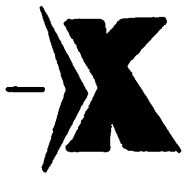

COLLECTED

PAPERS OF THE MEMBERS

OF THE

INTERNATIONAL COLLEGE OF APPLIED KINESIOLOGY

PRESENTED DEC. 2nd THROUGH 4th, 1981

SHELDON C. DEAL, D.C., N.D.
CHAIRMAN, I.C.A.K.

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* - Diplomate

INTRODUCTION

By

Sheldon C. Deal, D.C., N.D.

Chairman

This twelfth collection of papers by the members of the International College of Applied Kinesiology represents 43 papers written by 28 authors.

These papers will be presented by their authors to the general membership at the Winter meeting to be held in Acapulco on December 2, 3, 5, 1981. The authors welcome comments and further ideas on their findings either in Acapulco or you may write them directly as their addresses are included in the Table of Contents.

These papers do not represent the official educational material of the International College of Applied Kinesiology, but rather areas of special interest to the individual members which have been under research. The papers are presented in an unedited form.

The papers are being mailed out to the members well in advance of the Acapulco meeting. This will allow the membership at large to read the papers in advance which will save time at the Winter meeting and hopefully stimulate more questions from the members and more demonstrations from the individual authors.

We the members of I.C.A.K. can be proud of the amount of research being conducted and feel fortunate to have it at our fingertips in the form of these Collected Papers. It cannot help but be an asset to our health and also to the health of our patients.

By Dr. Jon R. Blossom

N E W F O O D C L A S S I F I C A T I O N S

Abstract: Certain foods can balance the energy in most, if not all, meridian findings using Applied Kinesiology as the indicator. Food like substances can seriously disturb the energy balance to any meridian. Our research has indicated consistantly that in two years, we have not found a single case where, if a person would eat entirely foods from Group #1 for three weeks or more, that Kinesiological indicator findings were abolished, and conditions like leukemia, post chemo-therapy, debilitation, kidney failure, lymphatic breast cancer and many severe emotional and mental disorders have all responded to the #1 regime.

Foods can be grouped generally into four major classifications, as to the known effect on the healing or health energy states.

GROUP #1 - LIVING FOODS: A-1, Perfect, Regenerative Foods

The highest form of natural life producing foods for non-lactating human beings.

All fresh sprouts, grown yourself in organic soil, used at home and within minutes of harvesting.

Fresh sprouts, grown in glass or sprout houses, at home.

Any fresh vegetables, fruit or sprout, purchased at organic food store.

Home organically-grown fresh vegetables, picked same day and used raw.

Home organically-grown fresh fruit, picked and used same day, used raw.

Rejuvlak (a cracked organic wheat or organic cracked rye, fermented with pure water into a high enzyme drink).

Fermented vegetables products, made at home (Saurkraut, seed cheeses).

Fermented bean and nut seed curd, made at home.

Puree of sprouts, flavored and dried into crackers.

Sprout juice, fresh, home raised in soil or in glass.

Yogurt, home-made from goat's milk.

GROUP #2 - HIGH ENERGY FOODS: Will maintain or sustain a high level of energy & health

Store-bought organic sprouts, used fresh.

Store-bought organic vegetables, used fresh.

Store-bought organic fruit, used fresh.

Whole (organic) grains, ground fresh at home and used within minutes, in sour dough products or unleavened products.

Same as above, but with natural yeast.

Home, organically grown and dried fruit.

. . . continued

GROUP #2 - continued

Home raised vegetables and fruit, lightly cooked in wok type utensil, using sea salt, tamiri, etc.

Herbs and spices, home raised or collected in the wild, used sparingly.

Store bought yogurt, made from goat's milk with natural flavorings and no sugar.

Fresh, ranch organic eggs, raw, soft poached or soft boiled.

Fresh, ranch organic eggs, used in lightly cooked foods with vegetables.

Fresh caught fish, used same day, poached.

Cold processed oils, fresh.

Non-salted butter, fresh.

Home-made cheese, made from goat's milk.

Home-milked goat's milk, Grade A, certified, raw.

Fresh pure deep spring water.

Fresh distilled or filtered water.

Most herbal teas or barley coffees.

Fermented fresh goat milk kiefer with fruit

Very small amounts of fresh comb honey, raw honey or maple syrup.

Fresh store-bought garden salad vegetables (organically raised)

Fresh store-bought cooked apples or applesauce.

Cooked chicken, ranch organically raised.

Organically raised red meats or game - once a week or less.

Cookies and cakes with fresh ground organic whole grain flour, freshly ground and used at once, with fresh or home dried fruit, honey and pure maple syrup.

Pizza, using fresh ground organic whole grain flour, white cheese, home canned tomatoes, vegetables such as carrots, etc.

Raw nuts, all but peanuts.

Popcorn, organically raised, dry popped, no oil.

Cooked whole grains for cereals.

Whole grain flour, freshly ground for pancakes, with sourdough starter.

Store-bought yogurt, no additives or flavorings.

Naturally dried raisins.

Oatmeal, old fashioned type, or steel-cut oats cereal.

Old fashioned peanut butter, raw, from organically grown peanuts.

Natural white cheese (from organic milk)

GROUP #3 - Will slowly deteriorate and undermine health.

Highly suspect because of no control of source or processing details.

Store-bought sprouts, alfalfa and bean

Processed honey (like Sioux Bee)

All store-bought (ordinary grocery) fresh vegetables and fruit.

All store-bought lettuce - Boston, bib, Romaine, and other leaf lettuces

All store-bought whole grain flours.

All store-bought whole grain breads and whole grain products.

All store-bought fresh meat, liver and eggs from turkeys and chickens.

All store-bought frozen fish, meats, turkeys and chickens.

All store-bought canned or frozen vegetables or juices

All store-bought canned or frozen fruits or juices

All store-bought yellow cheeses (cheddar, colby, etc.)

All store-bought yogurts (flavored and sweetened)

Coffee and black tea in tea bags

Most dried fruit.

Naturally sweetened commercial ice cream

Wine - non sweetened.

Non-sugared cereals

Some natural beers, some true fruit, honey-sweetened liquers.

Popcorn, air popped with sea salt and butter

"Quick" oats and oatmeal

Honey-sweetened soft drinks

Dark rum, in very small quantities.

GROUP #4 - Everything Else!!

These foods will not sustain life!! They eventually will kill you.

(A diet of any of these substances will produce abnormal behavior of cells and personality).

All store-bought packaged breads, both white and brown

All store-bought packaged snacks, such as potato chips, pretzels, corn chips, etc.

California head lettuce

99% of all fast-food restaurant food

Canned pickles and olives

Canned sweetened fruits or juices, or juice drinks and punches

. . . continued

GROUP #4 - continued

Dried fruits, such as sugar coated pineapple, dried bananas, etc.

All sugar products, candy, chocolate, etc.

All ice cream products from store or dairy-freeze type stores, etc.

All soft drinks with sugar.

Most beer and most liqueurs.

Whiskey, gin, vodka, etc.

All ham, pork, bacon and luncheon meats.

Processed American cheeses (Velveeta type).

White or flavored crackers.

All sugared cereals.

Popcorn with salt, popcorn oil and yellow coloring.

Peanut buter - hydrogenated.

Lettuces or salad greens which have been dipped in "Sta-white" (Such as that served in most restaurant salad bars).

We have instructed our patients who are on maintenance diets, that if they would eat all foods from Group #2, they will maintain a high level of health and energy. If they eat a food from Group #3, they must counter-balance it with a meal from Group #1. If they eat something from Group #4, they must eat two meals from the foods in Group #1.

Bibliography

Martin, Jeanne Marie, For the Love of Food, The Complete Natural Foods Cookbook, Davenport, Iowa: Bawden Bros.Inc., 1980.

Wigmore, Ann, We Reap As We Sow. Published by Ann Wigmore, D.D., Boston, Mass.

Bieler, Henry G., M.D. Food Is Your Best Medicine, New York: Random House, 1965

Wigmore, Ann & Earp-Thomas, G.H., Organic Soil, A New Concept in Diet, Boston, Massachusetts: Rising Sun Publications, 1978.

Price, Weston A., D.D.S., Nutrition and Physical Degeneration, La Mesa, California: Price-Pottenger Nutrition Foundation, Publisher, 1970.

Smith, Lendon, M.D., Feed Your Kids Right, New York, McGraw-Hill Book Company, 1979.

William Borrmann

FUNCTIONAL HEALTH APPRAISAL ALLERGIES

Allergy has been called the disease of the twentieth century. Hippocrates wrote over 2,000 years ago, "...it appears to me necessary to every physician to be skilled in nature, and to strive to know, if he would wish to perform his duties, what man is in relationship to the articles of food and drink, and to his other occupations, and what are the effects of each of them to everyone."

In the last several years doctors of all health professions are looking at individuals and how they react to their total environment. What they found was that people were experiencing allergic reactions to their environment which seemed to extend beyond the classic symptoms of hay fever, hives, eczema, and runny nose. The source of these allergic reactions were found in food, including water, natural pollutants (such as pollens, molds, animal hair, danders, etc.), and chemical pollutants. Many physical, mental and psychological problems were also traced to these natural and chemical pollutants.

These symptoms and/or diseases arising from allergies have been called ecologic illness. The doctor whose specialty is centered around an individual's relationship to his environment is called a "clinical ecologist." They come from diverse health field backgrounds and their new "bio-ecologic" science has been responsible over the past twenty-five years for new and exciting discoveries in the fields of allergy, clinical ecology, nutritional therapy, preventive health, orthomolecular psychiatry, and metabology.

Allergic reactions have been called the most frequently unrecognized cause of illness in the United States. In the Journal of Allergy and Applied Immunology, it was reported that in a test of 1,000 "normal"

individuals, fifty percent had recognizable allergy-like symptoms or sensitivities.

An English allergist, Dr. Richard Macharness, believes that at least thirty percent of all illness is completely due to allergy.

Allergy to modern technology and its by-products is another way it has been explained by other allergists.

It is a complex subject involving the reactions to foods, natural and chemical pollutants, with food ingestion being the most important of our contacts with the environment. Studies from many of the leading ecologists totally dismiss the fact that common foods are not involved in allergic reactions. These foods that we are going to list have been proven over the past twenty-five years in different studies to be the biggest offenders: wheat - eggs - white potatoes - pork - oranges - corn - cane sugar - milk - beef - coffee - carrots - tomatoes - both types of yeast (brewers/bakers) - apples - lettuce - oats - chocolate - peanuts - green beans - chicken - soy bean products - tea.

In a study of these foods by the Department of Neurology, Charing Cross Hospital, London, by Ellen Grant, eighty-five percent of the patients became headache free and twenty-five percent became high blood pressure free (hypertensive) when these foods were eliminated from their diets: eggs - beef - corn - cane sugar - milk - chocolate - wheat - tea - coffee - bakers yeast - orange.

Our metabolism, enzyme function, glandular balance, and nutritional intake many times are not able to ensure the protection they should give. Our bodies can only tolerate a certain amount of contamination before a toxic overload results and illness sets in. Because of the

processing, additives, and overall depleted nutrients in our foods we usually eat, many of us do not enjoy the health level we should. Our ability to resist disease is lowered to infection, as well as mental illness, and we have difficulty coping with our environment.

Dr. Theron G. Randolph, M.D., one of the pioneers in ecology, found that any organ can be affected by an allergic reaction with the gastrointestinal organs, the most common area of food allergy involvement, along with eighty percent of respiratory allergies. These allergies had the ability to imitate or mimic exactly the symptoms of duodenal ulcers, colitis, chronic appendicitis, and gallbladder attacks.

Dr. Mandell, M.D. put these symptoms under the heading of physiological because of their association with allergy: aches or stiffness in joints (as in arthritis) - itching or hives - head pains - migraine - drowsiness - dizziness - lightheadedness - vertigo (dizziness) - hot flashes - speech problems (stuttering and stammering) - muscle cramps - tremors - respiratory problems - rapid pulse - tachycardia (irregular heartbeat) - muscle stiffness - nausea - belching - cramps - hyperacidity - blurred vision - itch ears - compulsive eating (obesity) compulsive drinking (alcoholism) - insomnia - hypertension - urinary tract problems imitating urinary infections - hyperactivity - learning disabilities - autism - retardation - multiple sclerosis - schizophrenia - epilepsy - acute and chronic tiredness - irritability - despondency - depression - weakness - leg ache - tightness in back - aching in back, neck, upper back - low back pain with sciatic like symptoms - enlarged lymph glands, tender and swollen - numbness and edema (holding water in tissues, best seen around the eyes) - heart attacks usually associated with "acute indigestion" before or with

the attack many times with nausea and vomiting.

It is difficult for many doctors, as well as those not in the healing profession, to accept the fact that allergy is at the very heart of their symptoms or can be associated with so many mental and physical illnesses. Many patients report lifelong symptoms ranging from mild discomfort to incapacitating misery and have learned to live with these symptoms, accepting the discomfort as their normal aging process.

There seem to be certain clues that are associated with allergy such as: there may be bizarre combinations of symptoms (because of breakdown on a biochemical level) - symptoms may range from mild to severe. There may be reversible physical symptoms (one time knee aches, the next time or day, the left elbow) - may have symptoms of flushing or pallor - chronic exhaustion (many times confused with neurosis) - Dr. Mandell talks about a person with an allergy who will frequently touch his or her face with his hands, this has been labeled "allergic salute."

Studies have shown that food allergies fall into three types (1) fixed, (2) cyclic, and (3) addictive.

(1) A fixed allergy is defined as: every time you eat a food, you will have a reaction to it and will never develop a tolerance to it. They are the exception, not the rule.

(2) A cyclic allergy is defined as: a food may bother you sometime, but not all the time. Reaction to the food is usually cumulative, meaning that you may eat this food for several days (usually two to three) before symptoms would develop and then stop for a few days until system clears itself, then they may be eaten again.

These types of food make up to fifty percent of most of our food allergies. These foods if avoided for several weeks or months would allow a person to eat salami at a meal every 4 to 5 days without suffering a severe allergy response.

(3) Addictive allergy is defined as: a food that gets involved with the biochemistry of the body. That is to say, that foods to which we are allergic can become addictive to our bodies.

This type of allergy is insidious, subtle, and rarely suspected. With addictive foods, a person must get his food "fix" or there may be withdrawal symptoms. This addiction may be present for years without a person being aware of the addiction. Usually a person is never without the food in his diet to allow the allergy to present itself. That is to say, that if one eats the offending food at breakfast, they will again eat it at lunch, or if one eats it at lunch, they will again eat it at supper, thereby "masking" the reaction to the food.

There seems to be clues that are associated with addictive food allergy such as: certain specific symptoms occur when a person doesn't eat on time (many times this is assumed to be a hypoglycemia reaction, the hypoglycemia may work because it may remove the offending food, however, it may also begin a new addiction) - the food you love to eat the most - the food you crave - the food you eat on binges - these symptoms may remain active if the offending food is eaten as little as once every three days.

The two diseases that are associated with food cravings, binges, and addiction are alcoholism and obesity. The classic symptom of an addictive eater, compulsive eater is eating till full, but still feeling not satisfied. These foods usually are high calorie

foods, thereby resulting in obesity.

Persons having an obesity problem usually have no idea that their daily compulsive eating is associated with a physiological need to stop their withdrawal symptoms. These cravings, compulsions and need to overeat on certain foods may be so strong that they lose all sense of their total calorie intake. Even when they go on a diet, they always seem to include these addictive foods in their diet pattern and thereby, continue to have abnormal hunger responses. Insulin production may be increased to the point which may also cause abnormal hunger. It is also possible to be dealing with a malfunctioning pancreas (hypoglycemia problems) or a malfunctioning gallbladder and/or liver (low sugar storage and improper fat metabolism) and lack of proper foods in the diet.

Dr. Mandell has designed a test for compulsive eating which is included in this outline. If you answer any of the questions with a "yes" you are probably suffering from an addictive food allergy. Dr. Mandell in his book 5-Day Allergy Relief System, by Marshall Mandell, M.D. and Lynne Walter Scanlon (New York, 1979), paperback edition $2.75 also contains a self test for three different types of compulsive drinking.

Dr. Randolph an outstanding researcher in the field of alcoholism found that in many cases compulsive drinking was associated with some form of food addiction. What Dr. Randolph discovered was that even though alcoholism has been labeled as an addictive disease, it can no longer be ignored, that it may also be a type of food addiction. We do know that alcohol is manufactured from many allergic foods such as wheat, sugar, corn, yeart, barley, malt, and rye, as well as many others. Therefore, when the compulsive drinker stops eating these

foods, he may also suffer withdrawal symptoms. We also know that a drinker will take a drink to put off his hangover to stop the withdrawal symptom it is now believed. It is also known that alcoholics don't stop drinking because they are so far down, and they are afraid to continue drinking, because the adaptive system of the body has worn out the drinking no longer satisfied the addiction. If this person should decide to stop drinking before their adaptive system wears out, they will usually relieve their diet of addictive food.

To prove this theory, Dr. Randolph cites a case of an alcoholic who had stopped drinking for 26 months and suffered severe withdrawal symptoms when the food that was associated with his favorite drink was withdrawn from his diet. If these foods are not removed from a drinkers diet, they may continue their alcohol craving.

In the rise of alcoholism in children, it has been suggested that what they are suffering from is the effect of food dependency and/or allergy to milk and wheat which have been eaten over long period of time. The alcohol relieves the symptoms by blocking the effects of the food withdrawal, however, they exchange one dependency for another, they now depend on the alcohol, which in turn may become a craving or an addiction.

What of allergy in children? Dr. Mandell who was a pediatrician became interested in allergies while treating children with allergies in his practice. Dr. Mandell discovered that alleries were a common cause of illness in the children he treated. It was also assumed that children would outgrow their allergies in time. This, however, did not prove to be the case. Rather, a child through trial an error became master of his or her menu and learned to avoid those foods that created

his or her allergy, and others will remain ill, uncomfortable, tired, irritable, and other symptoms, that they will become accustomed to or perhaps travel from doctor to doctor seeking relief from some symptom, living a life that is never full of the energy, joy, and excitement that it should be.

What are some of these symptoms that many children have and seem to be associated with a food or air allergy: (1) hyperactivity (2) headaches (3) irritability (4) anger (5) restlessness (6) fatigue (7) abdominal pain (8) leg pain (calf) many times confused with growing pain (9) mental confusion (10) attitude (changeable/withdrawn) (11) depression (many times leading to suicide which is the third leading killer of children) (12) lack of concentration (13) eye problems (visual blurring) (14) drowsiness/sleepiness (15) itching (16) difficulty in writing (17) speech changes (18) urinary problems (bed wetting) urgency and or uncomfortable (19) problems in reading (dyslexia, perceptual disorder) (20) brain disorder or dysfunction. Refer to Children's Allergic Symptom Chart.

Dr. Mandell believes that an infants intestinal system is programed for mother's milk for the first two years of his or her life. However, an infant can develop an allergy while still in the mother's womb because of the food ingested by the mother, this plus a genetic disposition to certain foods. In testing allergic infants, Dr. Mandell discovered that fifty percent of infants tested were allergic to cow's milk and forty-eight percent were allergic to corn, these being the main ingredients in most infant formulas.

Dr. Mandell came to this conclusion, when children are sick allergy should be the first problem to be investigated, and if present,

corrected. Air allergy and or food allergy are the most important factors to be considered, and the fact that many symptoms may be delayed from a few to twenty-four hours after eating or breathing.

What of mental illness and allergy? Dr. Abram Hoffer, M.D., Ph.D. believes as Dr. Mandell, that in cases of mental dysfunction or illness that allergy should be ruled out first. Dr. Hoffer whose work in psychiatry and megavitamin therapy in correlation with mental illness states that it is very difficult for many doctors in the health professions to believe that allergic reactions can duplicate the exact symptoms of a psychiatric disease. Dr. Hoffer states that he has seen patients who have fasted for several days on nothing but spring water and be totally free of their psychiatric symptoms and then eat a food that they are allergic to and have the psychiatric symptoms return in one hour.

Dr. Mandell in a research study on allergy and the nervous system, found that seventy percent of the patients tested showed some form of cerebral allergy which ranged from mild symptoms to severe forms of mental dysfunction. Dr. Mandell with Dr. Wm. H. Philpott (Director, Fuller Memorial Sanitarium, S. Attleboro, MA) in a four year program, found that ninety percent of all patients who came to the sanitarium showed a significant degree of cerebral allergy. But most important, they were able to duplicate their symptoms by allergy tests.

How does one develop an allergy? We mentioned one earlier, a genetic weakness. Another is a weakening of a person's immune system by chemical pollutants in their environment. Many allergists believe that because our natural environment has been altered to an unnatural environment, we have become "allergic to the modern world."

In an article on allergy May, 1980, in the Let's Live Magazine, it states that twenty-five percent of the population are hypersensitive to chemicals, basically those related to petrochemical substances, because they are stored in the fatty tissues of the body, and when fatty tissues can no longer store these chemical substances, allergic reactions occur. Many times one can be on a balanced diet and yet feel ill because of such chemical pollutants as (1) gas (2) heating systems (faulty) (3) smoke (4) sprays (chemical) (5) paint fumes (6) auto exhaust fumes (7) glues (8) bleaches (9) moth balls (10) insect sprays (11) dry cleaning fumes and/or chemicals (12) synthetic clothes (cotton best) (13) polluted water (chemical additives).

How are allergies determined? We know of the skin testing methods which have proven reliable for air allergies (seasonal, dusts, molds, danders, etc.) and for most air chemical pollutants, but is not accurate for testing food allergies. Research indicates a twenty percent accuracy, that is to say out of ten tests eight tests will be wrong.

The best test or the test preferred by most clinical ecologists is the sublingual test. A suspected food is made into a testing solution and one drop of this solution is placed beneath the tongue. The reaction of the body to this drop of testing solution is that of producing a temporary food overload or a toxic reaction, which in turn bypasses the body's defenses and produces the myriad of allergic symptoms throughout the body.

Basic treatment of severe allergic patients in many of the controlled hospital units (of which their are only 5 in the U.S. at this time) is fasting followed by eating only single foods. This usually takes about 3 weeks. Procedure is for the patient to fast for several days (usually 4 to 7 days) so that their bodies will be cleared of all allergens. At the end of the fast, single foods are eaten and the patient watched for any reactions. This technique can create problems which can require medical attention and reactions have been noted to last for several days.

This technique has been modified by the late Dr. Rinkel who in 1960 developed different dilutions of food extracts using titration methods. These solutions or extracts could be used without the patient fasting. However, there still was the problem of severe reactions to the extracts. Dr. Carlton Lee discovered that if these extracts were diluted to an extreme degree, they had the ability to negate any severe reaction rather than provoking a reaction. As an example,

if one was addicted to milk and would have the addictive habit of drinking one quart of milk per day, diluting the milk to 0.1 cc of milk to 1000 cc of water which amounts to two drops of milk to one quart of water, then using two teaspoons of this extract daily, it would be possible to stop addiction within approximately three weeks. This technique is the one that is used by many clinical ecologists today.

Another technique is one the patient can use by himself or herself and was discovered by the late Dr. Arthur Coca. We explain this testing method later on.

Dr. Mandell in his book (Nutri-Book paperback) 5-Day Allergy Relief System suggests that a person fast for several days (four to seven days) on spring water and then begin a single food diet testing one food at a time being careful not to repeat eating the same food of the same family within a span of two days of each other, or to eat the same food within a span of four days. Complete instructions on the procedure of this fast are on page 301 of his book. It is also stated that if you are suffering from either (1) bronchial asthma, (2) epilepsy, (3) severe dizzy spells, (4) suicidal tendencies, (5) obesity, or (6) if you are on medication, you could undergo increased intensity of symptoms because of fasting and/or single food testing. Dr. Mandell gives this basic rule on fasting "when in doubt, don't fast." Other rules in fasting, you will usually feel worse before you feel better with the feeling better arriving about the fourth or fifth day into the fast. There can be weight loss because of the lack of water in the system, which resulted from the allergy. Perhaps the blood pressure will drop or rise and return to normal as the result of the fast.

For those of you who cannot fast, Dr. Mandell advises that you should avoid those foods suspected of creating allergies in your diet for at least 4 to 5 days before you start your single food diet. In other words, don't eat those foods you wish to test for at least 4 to 5 days before you begin to test them in your diet. This testing should last at least for 15 days and gives you the opportunity to test 45 foods, eating one food at a meal. On this diet, you may use (1) sea salt, (2) butter or oil, if they have been cleared from your diet, and they are now classified as a safe food, (3) no sugar, (4) white flour, (5) no ketchup, (6) no pepper, (7) no honey, (8) no vinegar, and (9) no lemon. If a food is found that causes an allergic reaction, it must be avoided for at least six weeks. It then can be tested again to determine whether or not you have a fixed allergy (meaning that everytime you eat this food it causes a reaction), or if it is of a cyclic nature (meaning that it is possible to eat this food for at least five days without it causing an allergic response). It is also recommended that (1) caffeine be avoided, (2) if possible, cigarette smoking be avoided, because of the undue stress it causes on the glandular system in this type of fasting and food avoidance, and (3) that toothpaste and mouthwashes be avoided, because they are in contact with the area below the tongue (sublingual exposure).

There is no easy way. The best approach to either fixed, cyclic, or addictive food allergy in all its forms is to avoid the culprit foods once they have been identified. Once identified, they must be avoided, which in turn may lead to withdrawal symptoms. They can then begin to establish their diet pattern which may be for life, using foods that have been proven to be nonallergic, and supplements especially those that have been proven to build-up the body's resistance to allergic sensitivity.

After eating single foods for 15 or more days and observing for any reactions, you may have found a food that disturbs you and you may not have. You now begin to combine some of these foods, first two, then three, then four. As we said previously, you will have tested approximately 45 foods; these must now be tested in combination. Many times they will give a reaction in combination. Another test that must be done is to eat these foods raw, if they were eaten raw before they must be eaten raw in your test period. The same holds true for cooked food. If they were eaten cooked before they must be eaten cooked in your test period. Many times you may eat a food in its raw state and have no reaction, but in its cooked state you will, and vice versa. Seasoning must be checked out. It might not have been the food; but any seasoning you have used, must be tested. One of the most difficult to detect is pesticides or substances added to the plants in their growing period. These substances may enter into the food by the root system and, therefore, not wash off. Therefore, you would be able to eat this same food from one source, farmer, your own garden, but not from another source. So it is advisable to shop around for an organic farmer who does not use chemicals on his crops.

Many times those who go on a diet that is low in carbohydrates lose many of their allergic reactions. This is usually the result of the avoidance of gluten that is in most grains, beans, and fruit. A diet that is mostly protein, low fat, and low carbohydrate is usually recommended for most who are suffering from food allergies. One can divide his ideal weight (this usually can be found from many of the charts put out by insurance companies, or what you consider your ideal weight to be, or what you wish it to be) by 15. This will give you the amount of protein in ounces you should have per day. This may be divided

into three or four meals per day, preferably four, to give you the amount per meal. This then can be multiplied by 80 to give you the amount of calories you will receive from the protein. As an example, if your daily protein is 10 ounces, multiply this by 80, which equals 800 calories. If you are on a 2000 calorie diet, subtract this 800 from 2000 equals 1200 calories you should eat in vegetables (preferably raw or slightly steamed), and no more then two fruits per day, and no more then 10 percent of your diet should be fat. So you have 1200 calories that should be in vegetables, fruits, and fats. The bulk of this should be in vegetables, no grain foods, sugar, sugar products, flour or flour products. A very simple diet that is balanced. If, however, your total calorie intake is 1200 or less, then a multiple supplement must be taken with each meal. Any diet supplying less then 1200 calories is considered a modified fast diet and needs supplementation to avoid depleting the body of essential nutrients which would result in tissue starvation.

SYMPTOMS USUALLY ASSOCIATED WITH ALLERGIES

SKIN SYSTEM

(1) Itching (2) burning (3) flushing (4) hot flashes (5) warmth (6) coldness (7) tingling (8) sweating at base of neck (9) hives (10) blisters (11) blotches (12) red sports (13) pimples

EYE SYSTEM

(1) blurring of vision (2) temporary loss of vision (3) double vision (4) spots before your eyes (5) pain in eyes (6) pain behind eyes (7) watery eyes (8) excessive tear secretions (9) crossing of eyes (10) bright lights or glare hurts eyes (11) color seems to look brighter (12) eyelids twitch (13) eyelids droop (14) eyelids are swollen (15) eyelids are red and have some swelling (15) red congested blood vessels

NOSE SYSTEM

(1) nasal blockage (2) itching (3) sneezing (4) runny nose (5) postnasal drip (6) sore (7) dry (8) postnasal discharge

EAR SYSTEM

(1) ringing in ears (2) popping in ears (3) fullness feeling in ears (4) earache (5) intermittent deafness (6) loss of some tomes (7) sounds seem louder than they are (8) fluid accumulation in middle ear (9) dizziness (10) vertigo (11) loss of balance (12) Meniere's (13) excessive ear wax

THROAT SYSTEM

(1) hoarseness (2) tickling (3) constantly clearing throat (4) itching palate (5) hacking cough (6) difficulty in swallowing (7) laryngitis (8) tracheitis (9) laryngeal edema

RESPIRATORY SYSTEM

(1) shortness of breath (2) tightness in the chest (3) not enough air getting into lungs (4) wheezing cough (5) mucus formation in bronchial tubes causing rattling sounds or vibrations in the chest (6) night cough (7) bronchitis (8) asthma

CARDIOVASCULAR SYSTEM

(1) increased heart rate (2) pounding heart (3) skipped beats (4) flushing (5) hot flashes (6) warmth (7) coldness (8) tinkling (9) redness or blueness of hands (10) faintness (11) pain in front of the heart (12) pain in left arm (13) pain in shoulder, neck, and jaw traveling down to the wrist (a pseudo-heart attack pain (14) rapid heart beat (15) night sweats (16) extra beats (17) palpitation

MOUTH SYSTEM

(1) dryness of mouth (2) salivation (3) canker sores (4) metallic taste in mouth (5) thirst (6) stinging tongue (7) toothaches (8) retasting foods

STOMACH (DIGESTIVE) SYSTEM

(1) burping (2) ulcer symptoms (3) heartburn (4) indigestion (5) nausea (6) vomiting (7) food intolerance (8) nervous stomach (9) excessive salivation

INTESTINAL/COLON SYSTEM

(1) rumbling in abdomen (2) abdominal pain (3) constipation (4) spastic colitis (5) emotional colitis (6) colic (7) cramps (8) diarrhea (9) passing gas (10) mucus or blood in the stool (11) itching or burning of the rectum

KIDNEY/BLADDER SYSTEM

(1) frequent (2) urgent or painful urination (3) inability to control bladder (4) bed wetting (5) vaginal discharge (6) itching (7) swelling

(8) redness or pain in the genital area (9) painful intercourse

MUSCLE SYSTEM

(1) fatigue (2) general muscle weakness (3) muscle pain (4) joint pain (5) joint swelling with local redness (6) stiffness (7) joint deformity (8) arthritis (9) soreness (10) chest pain (11) backache (12) neck muscle spasm (13) shoulder muscle pains (14) general spasticity (15) limping gait (16) limitation of motion (17) general muscle cramps (18) sluggishness

NERVOUS SYSTEM

(1) headache (2) migraine (3) sleepiness (4) drowsiness (5) grogginess (6) confusion (7) dizziness (8) loss of balance (9) staggering gait (10) slowness (11) dullness (12) unable to concentrate (13) depression (14) crying for no reason (15) tenseness (16) angriness (17) irritable more often than not (18) anxious (19) panic (20) feel stimulated often (21) feel overactive (22) feel frightened (23) feel restless (24) feel excessive anger uncontrollable (25) hyperactive with learning disability (26) feel jittery (27) have convulsions (28) head feels full or enlarged (29) have floating sensations (30) feel silliness (31) have poor memory (32) read without comprehension (cannot remember what I read)(33) have trouble writing (34) have hallucinations (35) delusions (36) stammering or stuttering speech (37) claustrophobia (38) paralysis (39) perceptual problems (40) loss of memory for words or numbers (41) mental slowness (42) feeling of apartness (unreal sensations)

BRAIN

(1) migraine headache (2) vascular headache (3) histamine headache (4) insomnia (5) tension headache (6) emotional headache (7) muscle spasm headache

BLOOD SYSTEM

(1) anemia (2) decreased white cells (neutropenia) (3) spots in skin (purpura)

ADDICTIVE FOOD ALLERGY SYMPTOMS

Please check all the questions that pertain to you. If you answer any of the questions, you are probably suffering from an addictive food allergy which is responsible for compulsive eating habits.

1. ( ) Does it disturb you to miss a meal?
2. ( ) Do you get headaches when a meal is missed?
3. ( ) Do you get unusually fatigued if a meal is missed?
4. ( ) Do you feel unusually depressed if a meal is missed?
5. ( ) Do you become very irritable after missing a meal?
6. ( ) Do you feel better after eating or have a feeling of more energy?
7. ( ) Do you have unusual weakness if a meal is missed?
8. ( ) Is any meal incomplete if a certain food is not eaten with it every time?
9. ( ) Do you eat something sweet all day long such as candy, or drink pop all day long?
10. ( ) Do you have times that you go on eating binges?
11. ( ) Do you use ketchup on almost everything you eat or unusual amounts of ketchup?
12. ( ) Do you mustard on almost everything you eat or unusual amounts of mustard?
13. ( ) Do you use vinegar on all your vegetables or unusual amounts of vinegar?
14. ( ) Do you use unusual amounts of relish on your foods?
15. ( ) Do you need a certain food or beverage before you go to work each day?
16. ( ) Do you have certain foods in your house at all times?
17. ( ) Does it upset you when you run out of your favorite food at home?

18. ( ) Do you have to eat a certain food everyday?
19. ( ) Do you crave certain foods?
20. ( ) Must you eat something before bedtime?
21. ( ) Do you keep food at your bed stand in case you wake up and cannot get back to sleep unless you eat something?
22. ( ) Do you eat either corn or potatoes at each meal?
23. ( ) Is it very difficult for you to stay on a diet?
24. ( ) Is there any food that you feel would be difficult for you never to eat again?
25. ( ) Does your daily food intake consist of mostly junk foods?
26. ( ) Do you carry food wherever you go?
27. ( ) Do you eat even though you have just eaten or have no appetite to eat?

CHILDREN'S FOOD ALLERGY SYMPTOMS

Please check all questions that pertain to your child. If any of the questions are answered, your child is probably suffering from a food allergy.

1. ( ) Does your child tolerate his formula or does he constantly spit up after eating?
2. ( ) Does your child suffer from any type of skin rash?
3. ( ) Does your child suffer from hives after eating?
4. ( ) Does your child suffer from eczema?
5. ( ) Is your child bothered with the croup?
6. ( ) Does your child vomit often for no reason or soon after eating?
7. ( ) Does your child have asthma?
8. ( ) Does your child have frequent earaches?
9. ( ) Did your child have tubes put into his or her ears?
10. ( ) Does your child suffer from a runny nose often?
11. ( ) Does your child have frequent colds?
12. ( ) Does not child suffer from hay fever?
13. ( ) Does your child have a stuffy nose often?
14. ( ) Does your child have poor skin color or pale skin color?
15. ( ) Does your child have dark circles or pouches under his eyes?
16. ( ) Does your child suffer from stomach aches often?
17. ( ) Does your child suffer from headaches often?
18. ( ) Is she or he a bed wetter?
19. ( ) Does your child act listless or appear to be depressed, no energy?
20. ( ) Does he or she appear to be over active?
21. ( ) Is your child bothered with colic?

22. ( ) Does he or she appear to be restless most of the time?
23. ( ) Does any food he or she eats appear in the bowel without being digested?
24. ( ) Does your child suffer from loose bowels (diarrhea)?
25. ( ) Is your child constipated or suffer from constipation?
26. ( ) Does your child appear unusually tired?
27. ( ) Does your child appear unusually tense or is he upset easily?
28. ( ) Does your child appear to be emotionally stable?
29. ( ) Does your child have cravings for certain foods?
30. ( ) Do certain foods stimulate him?
31. ( ) Do certain foods depress him?
32. ( ) Do certain foods make him sleepy?
33. ( ) Does your child suffer from car sickness?
34. ( ) Is your child affected by certain odors or fumes?
35. ( ) Does your child like to smell certain fumes like glue, paint, gasoline, etc.?

ALLERGY QUESTIONNAIRES

Designed to assist you in discovering if you have an allergy and to assist in discovering what the allergy might be.

Please check all questions that pertain to you. If you answer yes to any questions, you may have an allergy problem in the area that is being questioned. But first:

Please fill out the addictive food allergy symptom questionnaire to discover if you are suffering from an addictive allergy problem, and then:

Please fill out the children's food allergy questionnaire. Only try to answer it as to your childhood. There is a good chance that your allergy began in your childhood.

MOLD/YEAST QUESTIONNAIRE

1. ( ) Do you have problems during damp weather?
2. ( ) Do you have problems when you breathe in mildew (mildew on leather goods)?
3. ( ) Do you have problems with old house dust?
4. ( ) Do you have problems when you are in a damp basement?
5. ( ) Do you have problems in fall when raking dry leaves or making a compost pile?
6. ( ) Do you feel better in the winter?
7. ( ) Do you have problems after you have eaten cheese (moldy cheese as blue cheese, etc.)?
8. ( ) Do you have problems after you have eaten mushrooms?
9. ( ) Do you have problems after you have eaten cantaloupe?
10. ( ) Do you have problems after you have eaten vinegar?

11. ( ) Do you have problems after you have eaten sauerkraut?
12. ( ) Do you have problems after you have eaten buttermilk?
13. ( ) Do you have problems after you have drunk beer?
14. ( ) Do you have problems after you have drunk wine?
15. ( ) Do you have problems after you have drunk whiskey?
16. ( ) Do you have problems if you are around old furniture or sitting in same?
17. ( ) Do you have problems when the air conditioner is first turned on in the summer?

DUST QUESTIONNAIRE

1. ( ) Do you have a problem when you clean your house or emptying your vacuum cleaner bag?
2. ( ) Do you have a problem when shaking out or beating out your rugs?
3. ( ) Do you have a problem when you are close to the floor and rug?
4. ( ) Do you have a problem when making your beds and changing the sheets?
5. ( ) Do you have a problem when the furnace is first turned on in the fall?
6. ( ) Do you have a problem whenever you find yourself in an area that is dusty?

FEATHER QUESTIONNAIRE

1. ( ) Do you have a problem when you are around birds or wnen sleeping on a feather pillow?
2. ( ) Do you have a problem when covering your pillows with a slip cover or when fluffing?

3. ( ) Do you have a problem when you wear anything with down in it or when sleeping under a down comforter?
4. ( ) Do you have any problems eating poultry foods, duck, etc.?
5. ( ) Do you have any problems when visiting a friend who has birds?

FUR QUESTIONNAIRE

1. ( ) Do you have any problems around animals? Please list the animals: _____
2. ( ) Do you have any problems when you handle any substances containing animal hairs?

DANDER AND ODOR QUESTIONNAIRE

1. ( ) Do you have any problems when you inhale certain odors? Please list odors: _____
2. ( ) Do you have any problems when you come in contact with certain danders either from animals or substances that have come in contact with animals?

HYDROCARBON - PETROLEUM CHEMICAL QUESTIONNAIRE

1. ( ) Do you have any problems in a barber shop or in a beauty salon or after having your hair done from fumes?
2. ( ) Do you have any problems when using magic marker pens, coal fumes, diesel oil, tar?
3. ( ) Do you have any problems when using permanent hair dyes or dyes in clothing, cosmetics?
4. ( ) Do you have any problems with fumes: car gasoline, natural gas, naphtha, kerosene?

COSMETIC QUESTIONNAIRE

1. ( ) Do you have any problems using any tooth powders, deodorant powders, perfumes, shaving lotion, creams, lotions, etc.?

VEGETABLE OIL QUESTIONNAIRE

1. ( ) Do you have any problems when using these oils or substances such as hair wave solutions, shampoos, mineral oil, cold cream, waxes, furniture cleaners, hand creams?
2. ( ) Do you have any problems when using cottenseed oil or flaxseed oil on salads or in or on any foods?

TOBACCO QUESTIONNAIRE

1. ( ) Do you smoke? Do you feel worse after you smoke? Coughing? Phlegm? Etc.?
2. ( ) Are you bothered by smoke?
3. ( ) Are you bothered by the odor of tobacco smoke on another persons clothes?
4. ( ) Are you bothered by the odor of tobacco smoke in a room or on furniture?

TOXIC SPRAY QUESTIONNAIRE

1. ( ) Do you have problems when you inhale any type of garden sprays or household sprays that are used to kill insects?
2. ( ) Do you have problems when you are exposed to mothballs, crystals, inks, carbon paper?
3. ( ) Do you have problems when exposed to grass sprays that are used to kill grass weeds, household disinfectants, detergents, pine odors, burning wood?

FOOD ALLERGY QUESTIONNAIRE

1. ( ) Do you have gas after eating with much belching?
2. ( ) Do you have much intestinal gas after eating?
3. ( ) Is there much abdominal distension (bloating) after eating?
4. ( ) Is there any food that you avoid eating because it disturbs you? Please list them: _____

FOOD ALLERGY QUESTIONNAIRE (CONTINUED)

5. ( ) Do you suffer from diarrhea after eating certain foods, or after eating?
6. ( ) Do you suffer from constipation?
7. ( ) Do you have problems with abdominal cramps after eating certain foods?
8. ( ) Do you have spastic colitis?
9. ( ) Do you have pains on the right side of your abdomen after eating certain foods?
10. ( ) Do you have mucous colitis or notice much mucus in your stools?
11. ( ) Have you had or do you have gallbladder problems?
12. ( ) Do you suffer from hives after eating certain foods, or after eating?
13. ( ) Does your skin itch after eating certain foods, or after eating?
14. ( ) Do you have headaches after eating certain foods, or after eating?
15. ( ) Do you have dizzy spells after eating certain foods, or after eating?
16. ( ) Do you get very tired after eating?
17. ( ) Do you fall asleep after eating?
18. ( ) Do you get depressed after eating?
19. ( ) Do you feel that you have to eat a certain food everyday?
20. ( ) Do you eat everything or are there certain foods you dislike?
21. ( ) Do you over eat on certain foods or a food?
22. ( ) When a certain food is in season, do you eat it everyday or eat more then you should?

23. ( ) Do certain foods create indigestion?

24. ( ) Are you on any type of diet now? Please list the type of diet you are on:_____

25. ( ) Do you get sick or have nausea or headache if you do not eat on time?

26. ( ) Does eating make you feel better or stimulate you?

27. ( ) Do you feel better if you only eat one meal a day?

28. ( ) Do you feel better if you fast one day a week or more?

29. ( ) Do you feel exceptionally better if you skip or if you fast four days or more?

30. ( ) Do you feel worse if you fast for two or more days per week?

31. ( ) Do you feel worse if you drink alcohol?

32. ( ) Do you feel worse if you drink pop?

33. ( ) Do you feel worse if you drink fruit juices?

34. ( ) Do you feel worse if you drink coffee?

35. ( ) Do you feel worse if you drink tea, Chinese?

36. ( ) Do you feel worse if you drink tea, herb?

37. ( ) Does drinking alcohol make you feel better?

38. ( ) Does drinking pop make you feel better?

39. ( ) Does drinking tea, Chinese, make you feel better?

40. ( ) Does drinking tea, herb, make you feel better?

41. ( ) Does eating sugar or any food made with sugar make you feel better?

42. ( ) Does eating sugar or any food made with sugar make you feel worse?

43. ( ) Does eating wheat flour products make you feel better?

44. ( ) Does eating wheat flour products make you feel worse?

45. ( ) Does eating grains wheat - rye - barley - oats - buckwheat - bran - or wheat germ or products containing these grains make you

feel better?

46. ( ) Does eating grains wheat - rye - barley - oats - buckwheat - bran - or wheat germ or products containing these grains make you feel worse?

47. ( ) Does eating meat bother you? Please list meats:_____

48. ( ) Does eating beans bother you? Please list beans:_____

49. ( ) Does eating fruit bother you? Please list fruits:_____

50. ( ) Does eating vegetables bother you? Please list vegetables:____

_____

Note: Please list any other substance that bothers you that has not been listed:_____

Note: Please list any chronic infection you have or have had:_____

_____

ALLERGIES

Simple testing methods:

Pulse

Dr. Arthur F. Coca, M.D. wrote a book on pulse testing which is in paperback (Arc Books, New York, 1959) explaining the entire procedure for pulse testing for allergies. Many clinical ecologists believe that Dr. Coca's concept is sufficiently valid to make it worthy of using it in daily allergy investigations.

It simply consists of testing your pulse before you get out of bed in the morning. What he is looking for is your lowest pulse reading for the day. Than test again 30 minutes before eating breakfast or a single food or beverage. Then again 60 minutes after eating. Any increase in your pulse above 16 beats would indicate that something in your breakfast meal is disturbing your system, or if a single food is eaten or beverage drunk, it is creating an allergic reaction in your system.

What Dr. Coca is talking about is a normal range of your pulse throughout the day. He believes that this normal range should not exceed 16 beats for a resting pulse, and that any greater variation than this would indicate an allergy reaction. That is to say, if your low pulse for the day was 72 beats, it may go to 88 (72 plus 16 equals 88). If it goes higher, it would indicate allergic response to whatever you have been in contact with whether food, air, cosmetics, etc. Or if your low pulse for the day was 60 (if you are a jogger or have been exercising and your cardiovascular is strong and your pulse rate has lowered) then your normal upper limit would be 76, and anything above

that would indicate allergen disturbance.

To make it even simpler for those of you who wish to check every meal, take your pulse both before and after each full normal meal and any snacks you have during the day. If your pulse is 72 before each meal or snack and does not go above 88 in the next hour and a half, you may assume that the meal did not include any allergenic foods.

This does not work for everyone, and it is advised that you keep a diary or a daily record of the food eaten and your pulse reactions to it. It also must be remembered that the food tested must be eaten in the last two weeks. If you have not eaten the food in the last two weeks, you may have lost your sensitivity to it. Also, incidental foods must be taken into consideration, such as spices, sauces, dressings, and the like, when a full normal meal is eaten.

I strongly advise you read Dr. Coca's pulse testing book and the book How to Control Your Allergies, paperback Lachmont Books by Robert Forman, Ph.D. both excellent books in explaining how you can unmask your food and chemical allergies.

Saliva

William H. Philpott, M.D. conducted a study in which he monitored the acidity of the stomach and found it a useful measurement to a patient's reaction to various substances that are either eaten, breathed or drunk. In this study Dr. Philpott found that individuals varied greatly in their reactions to the foods that they had eaten, drunk, or to the air they breathed.

Dr. Philpott found that the degree of acidity of the stomach

may be measured by testing the saliva using a pH paper (pHydrion) of Nitrazine paper. These test papers have a test range of 4.5 (acid) to 7.5 (alkalinity), although papers with a test range of 5.2 (acid) to 6.8 (alkalinity) can also be used.

The test paper is immersed into a drop of saliva and read immediately in light other than fluorescent. The paper will change color according to the pH (degree of acidity or alkalinity).

Normal pH of saliva has a range from 6.4 to 6.8, which is slightly acid (neutral being 7.0). Put a drop of saliva on a spoon or on the bottom of a cup or glass and immerse a small strip of pH paper into it and read immediately. If the saliva reading is around 6.8 or higher, then we may assume that the stomach is not acid enough, in which case Dr. Philpott advises that you take two HCL (hydrochloric acid) tablets before you eat. A word of caution regarding HCL tablets, they should not be chewed, but swallowed, and they should not be taken by anyone who has an active ulcer.

Thirty minutes after eating and if pH reading is below 6.4, it is an indication that not only should you take from one to ten pancreatic enzyme tablets (usually five or less are sufficient), but also an alkali supplementation (sodium bicarbonate - potassium bicarbonate mixture - similar mixture that may be bought in a drug store Alka-Selzer Gold), pancreatic enzymes need an alkaline media in order to function. Strength of these pancreatic enzymes should be 400 to 500 mg per tablet.

To say it more simply, you should check your saliva upon

arising, if saliva is 6.4 to 6.8, take one to two HCL tablets before breakfast. Then again check saliva 30 minutes after eating and if saliva is again 6.4 to 6.8, 1 to 10 (usually 5 sufficient) pancreatic tablets are advised to assist protein digestion. However, if saliva is 5.0 or lower, then along with the pancreatic enzymes an alkali supplementation should also be given.

Urine

Many authorities believe that the most accurate measurement of the body pH is with the urine test. The pH level of the blood remains almost constant, while the urine (which is the fluid separated from the blood by the kidneys) is unbuffered and provides a more accurate measurement.

Measurement of the pH level of the urine should be taken at every passage of urine, except for the first passage after arising. Measurements should be taken for about 20 days to learn the proper pH level readings and to get a proper feel for the body's chemistry.

A 5.8 pH is good.

A 5.4 to 6.0 is an acceptable reading.

A 5.4 pH is too acid.

A 6.8 pH is too alkaline.

A 5.5 to 5.9 being the ideal pH.

When the body has a 4.8 pH, body chemistry is in danger.

With 5.0, body prone to develop cancer, arthritis, leukemia, diabetes.

With 5.2, body prone to heart attacks, muscle cramps, spasms, pains, constipation. May feel restless and fatigued in the middle

of the day or exhausted to the point that you are unable to sleep. In some cases mental instability (many patients in mental hospitals suffer from extreme acidity).

With 5.3, blood loses the ability to carry necessary oxygen needed by the body tissues at night in order to go to sleep fast, it usually results in a restless sleeping condition with tossing and turning because the brain is not receiving enough oxygen. May also be responsible for bed wetting. Body will also feel warm most of the time.

With a pH of 6.5, calcium (fluid) reserve is stripped out of the blood and will precipitate out into joints as deposited calcium. This can lead to severe physiological stress as well as reduce the body's ability to fight off infection and stress.

With a pH of 6.6, body will begin to have digestive problems as in bloating.

With a pH of 7.0, constipation presents itself and seizures may occur.

With a pH of 8.0, at this pH body may have headaches, nerve trauma, exhaustion, seizures, and/or spasms. Fluid calcium is removed from the muscles resulting in muscles losing their ability to rest and therefore, subject to muscle spasms, charley horses (heart attacks may result because of heart spasms). Body will be susceptible to bacterial infections.

With a pH of 9.0, severe problems may result.

Colon/Skin

Simple method of checking the colon pH is to use Bromthymol Test Reagent and an eye dropper. A small piece of fecal matter

is placed on a clean white, waterproof surface to which you would add a drop of Bromthymol Test Reagent. Mix together and observe for color. If mixture turns blue, the colon is alkaline. Patient will usually complain of a spastic colon with putrefaction (moderate amount of intestinal gas with odor) and constipation (alternating with diarrhea, puritus ani (rectal itching), hay fever, ulcers, mucous colitis (especially if colon is excessively alkaline, usually a pH of 8).

If mixture turns yellow, the colon is acid. Patient will usually complain of an atonic colon with fermentation (excessive intestinal gas - methane or marsh gas, almost odorless), and diarrhea, hemorrhoids, intestinal ptosis (sagging bowels), and colitis (especially if colon is excessively acid, usually a pH of 6.0 or lower).

The same results can be expected when reagent is placed on the skin.

The desired color for both skin and colon is yellowish-olive green usually pH of 6.7 to 6.9.

What about food supplements, are they helpful? They too, must be tested out for any allergic reaction, but they can be helpful. I believe that proper nutrition is the key to many of our problems. But, it also must be remembered that nutrition is not what we eat but what is absorbed into the system and used. Supplementing the diet of an individual so that they may have vitamins (which assists in maintaining the proper pH of the body), minerals (which assists

the buffer system), and amino acids (which assists the enzyme system which is responsible for all function in the body) in proper combination will assist in correcting many biochemical errors and thereby many allergic responses.

Supplements will assist in increasing the tolerance of the body's immune system in resisting the chemical substances we find in our foods and in the air.

What supplements are the best or what supplements should I use? Many believe that the three most important vitamins that should be added to the diet are vitamin C, B6, and B5 or pantothenic acid. I have included all the supplements that most authorities feel are necessary for one suffering from allergies below including the new glandular supplements which have been found useful in the last several years.

The most important of all of these supplements and the one that is receiving the most news is vitamin C. It is one of the most powerful immunizing factors known. It has the ability to inhibit the increase of histamine in the body which is the responsible agent in allergy attacks. Research indicates that the body will lose 50 percent of its vitamin C urinary output during an allergy response. The buffered vitamin C containing the minerals calcium, magnesium, and potassium (which work as an antacid) assists the body in maintaining a normal pH (allergic responses produce an acid reaction in the body tissues) this alkaline response usually occurs in an hour. If it does not, Dr. Levine suggests that you increase enough vitamin C to create a laxative effect in the body, which in turn will set off a chemical reaction which will block the allergic response. For this use, the powdered vitamin C works the best, because it doesn't

contain the binders, etc. which would slow the absorption of C into the system.

However, there is a caution since most vitamin C is synthesized from corn sugar. Those of you who have a sensitivity to corn should be aware this can bring on a reaction. The buffered C with the minerals seems to be tolerated better. So test out your C before you use it in large dosages.

I remind you again that all vitamins should be tested out before you take them in large dosages. Also it is not the vitamin you will be allergic to, but the binding agents, coating (many use vegetable coating or a vegetable dye - binding agents may be alfalfa or another vegetable binder) or preservatives. So, use only the best organic supplements you can buy from a dealer who knows the contents.

For those who are extremely sensitive, it has been discovered that the synthetic vitamins may be the best choice especially if they are sensitive to many of the vegetable and/or herbal binders that are used in organic products or many instances if they are allergic to brewers yeast or beef or pork which are also used in many organic products. Read your labels. I have had many patients say their vitamin isn't working, or they constantly come up on them and blame the vitamin, when in reality it is something they are allergic to in the tablet. Many times I have to use several different brands of a supplement before I find one that helps without creating an allergic response.

There is no cure for allergies, nor do we say that supplements will cure your allergy, but we can assist the body in combatting allergic responses and thereby make our life more useful and pleasant as God intended that it should be. Most of our problems come from trying to improve on a food that God already has made perfect.

Suggested supplements:

A	10,000 3 times per day (emulsified A which bypasses the liver and goes directly into the lymphatic system may be used in higher dosages).
E	100 to 300 I.U. 3 times per day (if you haven't taken E before, or if you have been taking small amounts, increase slowly to maximum amount. Take 100 I.U. per day for 1 month and then increase by 100 I.U. each month until 1200 I.U. is reached if this amount is needed). Vitamin E may have the tendency to increase blood pressure, so if you have blood pressure problems, consult with a nutritionally orientated doctor.
D	100 to 300 I.U. 3 times per day.
B1	100 to 500 mg. 3 times per day.
B2	100 to 500 mg. 3 times per day.
B3	500 to 1000 mg. 3 times per day. (Niacin can create a flushing and itching effect that may be uncomfortable to you. Use Niacinamide instead).
B5	100 to 500 mg. (Pantothenic acid considered by many to be extremely important in allergy responses).
B6	100 to 500 mg. 3 times per day (Pyridoxine).
B12	100 to 1000 mcg. (1000 mcg. equal to 1 mg.) once per day.
B15	100 mg. twice per day
PABA (Bx)	100 to 500 mg. 3 times per day.

C	2 to 4 grams 3 times per day (Powdered best tolerated with calcium ascorbate having the highest tolerance and with minerals calcium, magnesium, and potassium).
Calcium	1000 to 2000 mg. as chelate (meaning bound with a protein or in an oratate form or in an aspartate form) 3 times per day.
Magnesium	150 to 300 mg. as chelate (meaning bound with a protein or in an oratate form or in an aspartate form) 3 times per day.
Manganese	10 to 20 mg. as a chelate (meaning bound with a protein) 3 times per day.
Zinc	10 to 20 mg. as a chelate (meaning bound with a protein) 3 times per day.
Iodine	0.1 to 0.225 once per day.
Chromium	100 mcg. 3 times per day.
Selenium	100 mcg. 3 times per day.
Detoxifiers	Fruit pectin 200 mg. 3 times per day.
	Sodium Alginate 400 mg. 3 times per day.
	l-cystine 300 mg. 3 times per day.
	dl-Methionine 150 mg. 3 times per day.
	l-lysine 60 mg. 3 times per day.
	Chlorophyll 50 mg. 3 times per day.
Amino Acids	L-Glutamine 100 to 500 3 times per day.
	Tryptophan (helps to raise the serotonin level which has a tendency to be low in allergy susceptible people).

Glandular Conc: Adrenal, thyroid, kidney, spleen, pancreas, thymus are the raw glandular recommended by most authorities.

For those who are allergic to pork or beef, they must be tested for sensitivity. Herbs in some instances may be substituted, they also must be tested for sensitivity.

Adrenal, thyroid, and kidneys must function properly and produce the proper amounts of hormones in order to control body pH. If they do not function properly, the body pH tends to swing from alkalosis to acidosis and back again in giant cycles. Therefore, to properly control the pH, the adrenals, thyroid, and kidneys must be in good working order.

Pancreas is related to sugar metabolism as well as proteins and fats. In those with hyperinsulism problems, they may be running into a carbohydrate allergy in which case a pancreatic enzyme would be helpful.

Thymus and spleen are the germ filters, and function as a poison filter for the lymphatics along with the tonsils. They assist in fighting the allergens that come into the body to produce histamine reactions.

Heroal Suggestions: Alfalfa, Ginseng, sarsaparilla for those who are allergic to beef or pork glandular concentrates. Adrenal substitution.

Brigham Tea, Queen of Meadow, Camomile and Golden Seal for those who are allergic to beef or pork glandular concentrates. Kidney substitution.

Catnip (useful in hypoglycemia), Comfrey, saffron, Dandelion and juniper. Pancreas substitution.

Camomile, Echinacea, parsley, Poke root, yellow dock and yarrow. Spleen substitution.

Echinacea, Poke root, mullein, and Golden Seal. Thymus substitution.

Irish Moss, Poke root, Kelp, parsley, Mullein, Bayberry, Black Cohosh and Lobelia (especially for hyperactivity). Thyroid substitution.

These may be checked out by using pulse testing. Three herbs per day may be tested. Test between each meal.

Simple Thyroid Test

A simple test for thyroid may be done by you at home to determine if thyroid is functioning properly using a thermometer. Thermometer is placed on night stand next to your bed. Set your alarm 10 minutes early and after you are awake, before you get out of bed, place thermometer below your armpit and leave it there for 10 minutes. Remove after 10 minutes and read. If it is below 97.8, thyroid is usually hypofunctioning, if higher than 97.8, may indicate hyperfunctioning. Females should test three days before the menstrual cycle. Blood testing using the T3 and T4 testing may be necessary to make a positive diagnosis. However, the thermometer is a simple and useful indicator for thyroid disturbances.

Note: Occasionally a very high vitamin A intake for extended periods of time may depress thyroid function. Also, possibly that person will show hypothyroid in testing, but the symptoms will indicate a hyperfunctioning. In these cases, thyroxin is locked out of the tissue cell and accumulates in the bloodstream and causes both hyper- and hypothyroid function at the same time. In these cases, the use of RNA (ribonucleic acid tablets) can be used to unlock the tissue cell resistance and let the thyroid hormone in. RNA should be given in step dosage, that is to say 4 per day the first day, then 6 per day the next, until resistance factor is broken. Many patients require up to 15 tablets per day to unlock resistance.

Simple Adrenal Test

One such test is the Ragland sign, which is a drop in systolic blood pressure when a patient arises from a supine (laying down) to a standing position. Normally there is a rise, or at least a maintenance of the systolic blood pressure on standing.

The other is the Rogoff sign, which is observed when a light is shone into the eyes and the iris is observed for constriction. Failure to constrict or inability of the iris to constrict indicates hypoadrenal function.

Muscle Weakness - Kinesiology

With a relative HCL deficiency, there is always a bilateral pectoralis major clavicular division weakness, which is associated with a temporal bulge cranial fault. This can be tested by testing a weak pectoralis muscle and having the patient take in a half breath. If muscle is strengthened, the test is positive.

Corrected by having the patient take an inspiration of a half a breath and temporal bulge exaggerated, done several times. In these cases, there is also a parietal descent on the opposite side with an associated weak anterior scalene muscle. This is tested by having the patient exhale a half a breath and test anterior scalene. If strength is corrected, test positive. Corrected by having the patient exhale a half a breath while lifting the parietal bone superior, several times.

In Summary

The most common allergens are believed to be eggs, wheat, white potato (this belongs to the night shade family and also includes cayenne, chili, eggplant, green pepper, paprika, red pepper, tomato, and tobacco), milk, oranges, chocolate, beer. Wheat includes bamboo shoots, barley, corn, millet, oats, rice, rye, wild rice, triticale (wheat), sorghum, and sugar cane. Oranges include grapefruit, kumquat, lemon, lime, and tangerine. Beans would include carob, cowpea, lentil, licorice peas, peanuts, soybean. Apple would include pear and quince. What are we saying? If you are allergic to one thing, you may be allergic to its entire related family. An excellent book for these lists of related foods is How to Control Your Allergies, Larchmont Books (paperbook) by Robert Forman, Ph.D. I would advise you add this book to your library.

Testing Foods

A test food should be a food ordinarily eaten at least once every three days. If the foods you are eating include wheat and/or grains, milk, eggs, chocolate, or malt, which are common

allergy foods, they should be tested first.

The food chosen to test should not be eaten for four days and then eaten. Most reactions will occur in an hour or two after eating with symptoms that will leave no doubt in your mind that there is a specific cause and effect with this food that you have tested. Many doctors find that a reaction only occurs after eating a test food for three days in a row, many times seven days are needed. These are extreme cases, but many times necessary to establish an allergy in difficult cases.

Test your pulse 30 minutes and 60 minutes after eating to see if there is an increase then be aware of your entire body. Are there any changes that were not there before: runny nose, upset stomach, mucus in throat, sneezing, coughing, cramps, gas or indigestion, stomach or intestinal area, loose bowels, sinus ache, headache, migraine, itching eyes or any other symptoms that are disturbing. The stronger these symptoms are and the more unpleasant the symptoms are, the more toxic the test food is for you and the better off you will be without it.

One thing to be aware of, research indicates that if procedures are followed as we have outlined, that testing was approximately 80 percent accurate. However, reactive symptoms can be delayed sometimes for several hours, sometimes the next day, which usually occurs when food is eaten at the supper meal. Therefore, any food eaten after the test food should be a safe food, meaning a food that has been tested before and found to cause no reactive symptoms.

Nutrition Safeguard

When testing, be aware that it is still important to maintain

normal nutrition. If a multitude of foods are found to cause allergy symptoms and are removed from the diet, their loss from the diet must be made up with safe nutrients, such as vitamins, minerals, and protein. The two most likely to be affected are usually protein and calcium. Doctor Sagen Ishizuka, a Japanese doctor, after 40 years of research came to this conclusion about sodium and potassium. He believes that these two minerals are the key minerals that determine the strength of a persons body, their adaptability to weather changes (meaning how a person is influenced by weather changes - moods - depression and irritability). In children, chewable calcium or a liquid calcium along with a chewable multiple and/or liquid and a powdered protein can be obtained and used to replace milk, eggs or meat if they must be removed from the diet. Most people are not allergic to all meats and, therefore, may replace another meat in place of the one that must be removed. For those who wish no meat at all, a mixture of beans and grains can be used if they are found to be safe, plus some powdered or protein tablets.

Dr. Randolph in his reserach studies on allergy discovered that usually when reactions occur to test food, it is most always associated with an acid reaction in the body. This reaction can be relieved by using an alkalizer mixture composed of sodium bicarbonate (two parts) and potassium bicarbonate (one part) in 8 ounces of water. This can be bought from a drug store and mixed by you or there is a commercial mixture called Alka-Seltzer Gold (aspirin free) which when mixed with water turns into a similar compound and is as effective.

This makes one wonder with all of the alkalizers sold today for indigestion and headaches whether these are allergy related symptoms.

Voll Reflexes

Those patients showing a positive Voll Reflex AD 1 will usually have symptoms of abdominal pain, gastroenteritis, cystitis, or any interference with any organ function in abdomen due to the allergy. Found on the lateral side of the index finger first joint just lateral to the fingernail, right hand.

Usually affects the lower portions of the body including the extremities, organs in the lower pelvis and/or abdomen.

Usually sensitive to chemical substances in the environment and/or foods, preservatives, coffee, sugar, hydrocarbons, if related to digestive problems.

Homeopathic remedy that has assisted this type of allergy is Chlorox in tablet form, 4 tablets added to the diet 4 times per day. 3x - 6x - 30x muscle testing is usually necessary to determine which strength restores the energy to the Voll allergy reflex point AD 1.

Those patients showing a positive Voll reflex AD 3 will usually have symptoms of headaches, rhinitis, sinusitis, conjunctivitis, bronchitis. On right index finger just inferior and lateral third joint.

Usually affects the skin of head, organs of head, oral cavity and sinus.

Usually sensitive to pollen, mold, dust, dander allergies and/or foods, preservatives, coffee, sugar, hydrocarbons, if related to nervous disorders.

Homeopathic remedy that has assisted this type of allergy is Apismel, 4 tablets added to the diet 4 times per day. 3x - 6x - 30x muscle test to see which restores the energy to the Voll allergy reflex point AD 3.

Note: Some cases may need RNA challenge to uncover allergy, usually necessary with intermittent sypmtoms.

Check for associated hypodrenia, hypoglycemia, and hypochlorhydria associated with food allergies.

Muscles affected bilateral weakness of pectoralis major clavicular and weakness in sartorius, latissmus dorsi, and pectoralis major sternal.

Organs possibly affected: liver, pancreas, adrenal, and thyroid.

Cleansing Food-Water

There is a method to cleanse food from chemical additives. Dr. Hazel Parcells, Ph.D., suggests this formula using Clorox to cleanse chemical contaminated food. Use 1/2 teaspoon of Clorox to one gallon of distilled or spring water. Do not use any other bleach product, only Clorox works. Place into the gallon of Clorox fruits or vegetables. The thick skinned fruits and leafy vegetables will require 10 minutes of soaking to cleanse. The root vegetables and heavy-skinned fruits will require 15 to 20 minutes of soaking to cleanse. You should make a fresh gallon for each group of fruits or vegetables you wish to soak. Remove from the Clorox soak and place into a fresh water bath for 10 to 15 minutes. This formula has been used for 10 years with no apparent problem.

You may also disinfect drinking water, one drop of Clorox to a glass of water to decontaminate it. Useful when traveling in different countries.

A doctor in India, Hement Pathak, discovered that five drops of castor oil in a little juice or water taken on an empty stomach in the morning is often useful in preventing allergies that occur in the intestinal system, skin, and sinus areas. This same technique has been reported in the Medical Research Bulletin, of the A.R.E. Clinic, Inc., by Dr. Wm. A. McGarey, Medical Director.

BASIC COMMON ALLERGY FOODS TO AVOID IN ALLERGY TESTING

Beverages:	Alcoholic beverages, caffeine beverages (coffee, cocoa, cola, other soft drinks with caffeine), grape, apple, cranberry juices, all nectars, papaya juice, prune juice, sweetened orange and grapefruit juice or drinks, ovaltine, tea (Chinese -herb).
Dairy Products:	Milk, cheese, eggs.
Vegetables:	The night shade family (white potato, cayenne, chili, eggplant, green pepper, paprika, red pepper, tomato, and tobacco), carrots, lettuce, green beans, potato chips, corn, corn chips. Dried beans and peas, hominy, lima beans, as well as others in bean family, carob, cowpea, lentil, licorice peas.
Fruit:	Apple and family which includes pear and quince; oranges and family which includes grapefruit, kumquat, lemon, lime, and tangerine; blueberries, bananas, dried fruits, raisins, dates and figs, and any products with these fruits canned in syrup, grapes, guava, huckleberries, mango, and plantain.
Nuts:	Peanuts, soybeans, cashews, peanut butter, chestnuts.
Meat:	Canned meat, cold cuts, hot dogs, salami, sausages, scrapple (most of these are usually packed with some form of sugar preservative made from corn), chicken, pork, beef, mutton, lamb, veal, turkey.

Grains/Flour:	Wheat which would include bamboo shoots, barley, corn, millet, oats, rice, rye, wild rice, tritical (wheat), sorghum, sugar cane, white bread, white flour products, wheat flour products, crackers, grits, matzoth, pancakes, pizza, rolls, waffles. Most of these contain gluten, refer to gluten free diet chart.
Desserts/Sweets:	Cake, chewing gum, chocolate, cookies, custards, dessert topping, ice cream, jello, pastry, pie, pretzels, puddings, candy (hard), caramel, honey, jam, jelly, malt, marmalade, molasses, sugar (white) sugar (brown), syrup (corn), syrup (maple), syrup (sorghum), chocolate.
Artificial Sweetners:	Dextrose, fructose, glucose, hexitol, lactose, maltose, manitol, sorbitol, sucrose are all forms of sugar and are not allowed when used in the form of artificial sweetener. Many of these have a high concentration of carbohydrate. Powdered Sweet and Low is 90 percent carbohydrate.
Canned and Bottled Goods:	Most canned soups and juices, ketchups, mayonnaise, mustard, salad dressing, and some canned vegetables contain corn sugar or corn sweetner.
Tobacco:	Cigarettes, cigars, pipes, chewing tobacco.
Drugs:	Alcohol containing drugs, anacin, APC, Aspirin B.C., Cafergot, cold tablets (4-way), depressants, Empirin, Midol, narcotics, stimulants, Stanback, Trigesic, Sal-Fayne.

Note: All of these foods and drugs may also be involved if one has hypoglycemia.

BASIC COMMON ALLERGY FOODS TO AVOID FOR ALLERGY HEADACHES

Foods Containing Tyramine:

Ripened cheeses such as Gruyere, Brie, Camembert, cheddar.

Meat/Fish: Smoked fish, fermented sausage (bologna, salami, pepperoni, summer), hot dogs, chicken livers, pork (eat no more than 2 to 3 times per week), fermented foods in general such as pickled or marinated.

Any foods containing large amounts of monosodium glutamate, such as Chinese foods.

Vegetables: Onions, pods of broad beans such as lima, navy, and pea pods, avocado.

Vinegar (except white vinegar).

Pizza.

Fruit: Bananas (no more than 1/2 per day, citrus foods (no more than 1 orange per day), canned figs.

Sour cream, yogurt.

Chocolate, nuts, peanut butter.

Hot fresh breads, raised coffeecakes and doughnuts.

Excessive tea, coffee, cola beverages (no more than 4 cups per day).

Avoid all alcoholic beverages if possible. If you must drink, drink no more than two normal size drinks per day. Suggested drinks: Haute Sauterne, Riesling, Seagram's VO, Cutty Sark (Scotch), Vodka.

Foods Containing Phenylethylamine:	Chocolate, aged cheese, red wines.
Foods Containing Histamine:	Alcohol, port, Chianti, and other red wines.
Foods Containing Octopamine, Dopamine:	Pods of broad beans, lima, navy, and pea pods.

GLUTEN-FREE DIET

It must be understood that gluten-free flour has no therapeutic or nutritional value. To exclude all gluten from the diet, begin by learning which foods contain gluten. At the present, there is no alternative. You cannot even have one bite of a gluten containing food for as little as one gram (1/28 of one ounce) can create an allergy problem.

Most gluten free flour is produced from 70 percent milled, bleached white flour. This produces a flour which has its vitamins, minerals, proteins, and fats reduced drastically. Some of the B-complex vitamins are replaced (especially B-1 and Niacin). The mineral iron is replaced, but there is no replacement for the vitamin E or the unsaturated fatty acids that are removed.

FOODS FORBIDDEN ON A GLUTEN-FREE DIET

Commercial Flour Foods:	Baking powders, all commercial breads, cakes, cookies, crackers, crumpets, doughnuts, meringues, muffins, pancakes, pastries, waffles, bagels, bread crumbs, bread rolls, crisp bread, matzoth, pretzels, rusks.
Protein Foods:	All commercial preparations containing fillings, e.g. sausages, stews, luncheon metas, meat patties, meat pies, meatloaf, mincement, frankfurters, croquettes, meat pastes, canned meat, cold cuts (unless they are 100 percent all meat, no filler). Pickled fish, frozen fish in sticks or covered with crumbs, or cakes as in fish fingers, canned fish in sauce, fish paste.

Dairy Products:	Synthetic cream, malted milk, cheese spreads.
Fat Foods:	Commercial salad dressings, mayonnaise.
Gravies/Sauces:	Gravy thickeners and mixes (unless stated that they are gluten-free). Thickened sauces, bottled sauces, chef sauce, anchovy sauce, horseradish sauce.
Spices (Condiments):	Celery salt, curry powder, mustard, ketchup, pickles, piccalilli.
Grains:	All flours containing the grains of wheat, barley, rye, oats, buckwheat (kasha) and flours made from.
Cereals:.	All cereals containing wheat, barley, rye, oats, or buckwheat. All patent cereals, including baby cereals, (unless gluten-free), dumplings, groats, macaroni, noodles, spaghetti, canned corn, vermicelli, semolina. Any of these may be used if guaranteed to be gluten-free.
Commercial Beverages:	Beer, ale, gin, whiskey, coffee, instant coffee, cocoa, chocloate drinks, malted beverages (Horlick's), Cocomalt, Milo, Ovaltine, Postum, tomato juice.
Vegetables:	Vegetables in sauces, mayonnaise, cream, baby preparations (unless guaranteed to be gluten-free), vegetable mixes.
Commercial Desserts:	All filled chocolates, toffees, fudge, caramel, marzipan, chewing gum, all cones, wafers, crumbs, powders, health ice cream.
Commercial Fruit:	Glace fruit, baby preparations (unless guaranteed to be gluten-free).

Commercial Soups: All canned and dried soups, all thickened soups, all cream soups, soup powders.

Commercial Snacks: All potato chips and French-fried potatoes (unless guaranteed to be gluten-free).

Commercial Spreads: Fish paste, meat spreads, chocolate spreads, cheese spreads, sandwich spreads, peanut butter (unless guaranteed to be gluten-free).

Note: Many instant coffees may contain a certain amount of gluten. Nescafe is guaranteed to be gluten-free. Coffee and strong tea act as stressors and therefore can increase blood fats and cholesterol.

If in doubt with any product, omit item from your diet. So many processed foods are adulterated with either wheat, rye, oats, barley or buckwheat or monosodium glutamate that it is better to be safe than suffer the allergy reaction. Monosodium glutamate may be added to salad dressings without declaring same on label.

Therefore, unless it states on the label that it is gluten-free, assume that it is not.

Suggested Reading: Food Food, Gluten Free by Hilda Cherry Hills, 1976, Keats Publishing, Inc.

ACID ALKALINE ASH FOODS

CODE: The pH value of foods is divided into two separate values. One, the pH value of foods before digestion (oxidation), and the other the pH value (the alkalinity-acidity reaction of food on the body) after digestion. When foods are digested, they are metabolized by the body which results in the formation of an ash residue. If this ash residue is predominately sodium, potassium, calcium, and magnesium, it is called an alkaline ash food. If, however, it is predominately sulfur, phosphorus, chlorine, and uncombusted organic acid radicals, it is called an acid ash food.

Animal Protein (after digestion)

Acid ash content average pH value 3.0. Mushrooms 4.9.

Poultry (after digestion)

Acid ash content average pH value 3.0.

Fish-Sea Food (after digestion)

Oysters 4.5, lobsters 4.0, sardines 3.4, crabs 4.5, shrimp 3.3, haddock 2.5, herring (smoked) 5.5, fish (fresh) 3.3, frog 3.3.

Dairy Foods (after digestion)

Eggs 3.0, egg white 1.7, egg yolk 7.5, cheese (American) 1.6, buttermilk 0.7, whole milk 0.5, ice cream 0.1.

Grains (after digestion)

Cereals in general 3.0, barley 3.0, rice (white) 7.8, rice (brown) 2.8, wheat 10.9, rye 11.3, dry corn 1.7, corn flakes 1.6, cornmeal 1.6, white bread 2.2, crackers 2.3, soda crackers 1.0, Zwieback 1.6, macaroni 3.0, spaghetti 3.0.

Nuts (after digestion)

Almond 13.5, chestnut 9.1, coconut meat (dry) 8.5, coconut (milk) 7.5, coconut meat (fresh) 6.0, water chestnut (Chinese) .2, filbert 2.1, Brazil nut 3.2, walnut (English) 8.5, peanut 10.6.

Fruit (after digestion)

Lemon (with the peel) 8.5, peach (raw) 8.2, plum (raw) 8.2, blackberry 7.7, guava 7.7, lemon 7.7, cantaloupe 7.5, loganberry 7.4, cherry (sweet) 7.3, orange 7.1, apricot (fresh) 6.6, grapefruit 6.4, nectarine 6.2, banana 6.0, pineapple 5.8, raspberry 5.7, tangerine 5.7, mango 5.0, gooseberry 5.5, quince 4.9, orange (juice) 4.5, cherry (sour red) 4.1, lemon (juice) 4.0, pomegranate 3.5, pear (fresh) 3.4, grapes 2.7, strawberry 2.6, apple 2.2, watermelon 2.2, blueberry 1.4.

Dried Fruit (after digestion)

Dates 9.6, peach 12.1, raisin 25.3, apricot 36.6, fig 43.7, prunes (dried) 20.3.

Vegetables (after digestion)

Cabbage 6.2, kohlrabi 6.0, bean (snap) 4.8, radish 4.8, eggplant 4.5, okra 4.5, Brussels sprouts 4.3, broccoli 4.2, horseradish (raw) 4.2, cabbage (red) 3.9, cauliflower 3.2, chicory 3.2, pumpkin 3.2, squash (winter) 2.8, cabbage (Savoy) 2.7, corn (sweet) 1.8, pea (green fresh) 1.3, asparagus .1, watercress 2.3, olive (green pickled) 3.8, artichoke (globe) 4.3, bean (dried white) 4.3, artichoke (Jerusalem) 10.3, lentil 10.5, chard 20.4, bean (lima dried) 41.6, dandelion greens 17.5, sprouts (soybean) 16.5, spinach 15.8, cucumber 14.2, bean (fresh lima) 14.0, beet 11.1, avocado 10.7, kale 10.5, chive 10.4, carrot 10.2, rhubarb 10.2, endive 9.6, parsnip 8.6, rutabaga 8.5, onion (dry) 8.4, tomato (ripe) 8.3, celery 8.1, watercress 8.1, shoots (bamboo) 7.7, lettuce (iceberg) 7.7, peas (dried) 7.4, leek 7.3, potato 7.2, potato (sweet) 6.7.

The number following the listed food is the pH number. A value of 0 or low number denotes strong acidity; 7 neutrality; and 14 strong alkalinity.

PH VALUE OF FOODS BEFORE DIGESTION

Fruits

Melon (honeydew) 6.3, cantaloupe 6.5, currant (red) 4.8, coconut (water) 5.0, banana 5.1, figs (fresh) 5.1, watermelon 5.3, papaya 5.4, persimmon 5.5, melon (casaba) 5.7, currant (black) 6.0, lime (juice) 2.0, lemon (juice) 2.1, grapes (American) 2.8, plum (Damson) 3.0, pomegrante 3.0, plum (prune type) 3.0, cherry (red sour) 3.1, cranberry 3.2, blueberry 3.2, strawberry 3.4, pineapple 3.4, grapefruit 3.4, apple 3.5, peach 3.5, grapes (European) 3.5, raspberry 3.7, orange (juice) 3.7, kumquat 3.8, orange 3.9, pear 3.9, nectarine 3.9, tangerine 4.1, cherry (sweet) 4.1, blackberry 4.3, apricot 4.4.

Dried Fruits

Raisin 3.9, date 4.7, apricot 9.5, currants 1.7, figs 30.0.

Vegetables

Cucumber 5.4, onion (dry) 5.4, pepper (sweet green) 5.4, radish 5.7, leek 5.7, cabbage (red) 5.7, chive 5.8, parsley 5.8, celery 5.8, endive 5.9, fennel 5.9, lettuce (iceberg) 5.9, lettuce (looseleaf) 5.9, carrot 5.9, chicory 5.9, watercress 5.9, lettuce (Boston bibb) 5.9, olive (green) 6.0, cabbage 6.0, cabbage (Chinese) 6.1, avocado 6.4, horseradish (prepared) 3.5, tomato 4.2, beets 3.5, beans (string) 1.6, cauliflower 1.6, mushrooms 1.2, squash 1.0, peas (green) 0.3, asparagus 0.2, lima beans (dried) 12.0, mustard greens 8.0, turnip greens 8.0, dandelion greens 8.0, beet greens 8.0, kale 7.0, Swiss chard 5.0, parsnips 3.6, lima beans (fresh) 4.5, soybeans 12.0, parsley 2.0, corn on the cob 0.5, lentils 1.5.

Nuts

Walnuts 2.4, peanuts 0.7, almonds 3.6, coconut 2.0.

FOOD ACIDS

Note: Most fruit acids are alkaline in their ash and are useful for the elimination of various toxins, acids, and other metabolic impurities. Germs and bacteria cannot live in fruit juices containing citric, malic, and tartaric acids. They seem to have a powerful germicidal affect. Numbers listed behind are the approximate gram content per 100 grams (3 1/2 ounces) of edible portion.

Sulfur Foods

These have an acid reaction to the tissues and are listed in order of sulfur content.

Lean beef, dried bean, chicken, heart, liver, turkey, ham, pork, salmon, peanuts, clams, lamb, veal, cocoa, Brazil nuts, oatmeal, dry peas, hard cheese, eggs (whole/fresh).

Citric Acid Content of Foods-Fruits

Lemon juice 6.0, pomegranate 4.5, lemon 3.8, black currant 2.3, lime juice 2.0, blueberry 1.56, cranberry 1.46, grapefruit 1.4, red raspberry 1.3, black raspberry 1.0, strawberry 1.0, orange .9, pineapple .8, peach (fresh) .3, apricot (dried) .3, fig (fresh) .3, pear (fresh) .2, banana .2, apple .01, blackberry .01, sweet cherry .01, gooseberry .01.

Vegetables

Lima bean (fresh) .6, potato .5, rhubarb .4, tomato (ripe) .3, kale .3, wheat germ .3, Brussels sprouts .2, broccoli .2, cauliflower .2, cabbage (common) .1, parsnip .1, pea (green fresh) .1, asparagus .1, beet .1, artichoke (globe) .1, carrot .09, spinach .08, wheat bran .08, potato (sweet) .07, squash (summer) .04, bean (snap) .03, lettuce (iceberg) .02, okra .02, onion (dry mature) .02, celery .01, cucumber .01.

Oxalic Acid Content of Foods-Fruits

Lime .1, gooseberry .08, lemon peel .08, orange (with peel) .07, raspberry .05, grapes (American) .02, orange .02, red currant .01, strawberry .01, blackberry .01, blueberry .01, grapefruit .01, red raspberry .01, apricot (fresh) .01, grapes (European) .01, plum .01, banana .006, prune (dried) .005, pear (fresh) .003, peach (fresh) .002, cherry (red sour) .001.

Vegetables

Beet greens .9, purslane leaves .9, spinach .8, spinach (New Zealand) .8, chard (Swiss) .6, rhubarb .5, parsley .1, beet .1, celery .05, potato (sweet) .05, okra .04, bean (snap) .04, carrot .03, endive .02, dandelion greens .02, onion (green) .02, pepper (sweet green) .01, turnip greens .01, kale (leaves and stems) .1, kale leaves .01, parsnip .01, collards .009, cabbage .007, mustard greens .007, tomato (ripe) .007, cabbage (Chinese) .007, lettuce (iceberg) .007, eggplant .006, Brussels sprouts .005, potato .005, broccoli .005, cress .005, asparagus .005, bean (lima) .004, sweet corn .003, turnip .001.

Nuts

Almond .4, cashew .3.

Malic Acid Content of Foods-Fruits

Plum 2.4, prune 1.4, gooseberry 1.2, quince 1.1, cherry (sweet) .9, grapes .6, apricot (dried) .8, apple .7, banana .3, peach (fresh) .3, cranberry .3, lemon juice .2, watermelon .2, blackberry .1, strawberry .1, pear (fresh) .1, pineapple .1, blueberry .1, orange .09, persimmon .09, grapefruit .08, loganberry .08, black currant .05, red raspberry .04, fig .01, lemon .01.

Vegetables

Rhubarb 1.7, cauliflower .3, parsnip .3, squash (summer) .3, carrot .2, cucumber .2, turnip .2, Brussels sprouts .2, artichoke (globe)

.1, celery .1, eggplant .1, lettuce (iceberg) .1, onion (dry mature) .1, bean (lima fresh) .1, pumpkin .1, mushroom .1, bean (snap) .1, broccoli .1, okra .1, tomato (ripe) .1, asparagus .1, cabbage (common) .1, spinach .09, pea (fresh green) .08, kale .05.

Tartaric Acid Content of Foods-Fruits

Pineapple, grapes.

LAXATIVE FOODS

Vegetables

Lettuce, spinach, celery, okra, turnips, squash, parsnips, carrots, cauliflower, pumpkin, onions, Agar-Agar.

Fruits

Prunes, dates, raisins, oranges, apples, bananas, pears, peaches, grapes, grapefruits, watermelons, lemons, blueberries, cherries.

Grains

Bran (two tablespoons daily with full glass of water), bran muffins, bran bread, whole wheat bread.

Nuts

Walnuts, butternuts.

Oil

Olive oil

Dairy Products

Buttermilk, yogurt.

CONSTIPATING FOODS

Fruits - Grains

Blackberries, white rice, barley, white bread.

Dairy Products

Boiled milk, cheese.

Protein - Gravies

All meat, hard boiled eggs, brown gravy, flour gravy, gruel gravy.

LAXATIVE FOODS

Herbal Laxatives

These are ingredients that have been traditionally used as a laxative.

Cascara Sagrada Bark:	Eases habitual constipation.
Cayenne:	Stimulates lower bowel action and equalizes circulation, cleanses intestines.
Rhubarb Root:	A mild soothing laxative and tonic. Excellent for infants. Cleans and tones bowel.
Ginger Root:	Very conductive with other laxative herbs.
Licorice Root:	Very effective for chronic constipation.
Buckthorn Bark:	Regulates bowels and cleans and regulates the blood system.
Mandrake Root:	A very powerful bowel evacuation.
Psyllium Seed:	Relieves stress during evacuation, cleanses intestines, and removes putrefactive toxins.

Other Ingredients That Could be Added

Burdock Root:	Very efficient in purifying the blood.
Calamus Root:	Valuable stomach remedy, improves gastric juices, prevents acids, gases and fermentation in the stomach.
Chickweed:	Effective in purifying the blood and fat digestion useful in obesity.
Fennel Seed:	Effective in weight problems or obesity and increases urine flow.
Golden Seal:	Aids digestion. Considered to be the most valuable herb in the herb kingdom.

Peach Leaves:	Has an excellent influence over the nervous system. Useful in bladder, kidney, and uterine function.
Senna Leaves:	Senna leaves are most effective for killing worms, when combined with other herbs indicated for worms. Senna is a valuable mild and effective laxative.
Wahoo Root Bark:	God has given us a wonderful laxative for all our improper eating. It improves appetite and gastric digestion and slowly but persistently relieves cholacemic poisoning. It will induce a mild but steady flow of bile.
Yellow Dock Root:	Tones up the entire system, including the blood. An excellent blood purifier.
Agar:	Excellent for weight reducing, constipation. Tones the intestinal muscles, aids regularity of bowel movements.
Balmony Leaves:	Excellent remedy for worms in the stomach. Fine tonic for the liver and useful in constipation.
Bee Pollen:	Increases body weight in underdeveloped persons and also aids in weight reduction. An ideal body regulator in all body functions.
Cayenne Pepper:	Could be called the miracle herb. It is the most wonderful herb we have in cases of constipation. It assists in stimulating the peristaltic motion of the bowels. Most effective if given in small doses daily. Works best with other herbs.
Celery Seed:	Celery is alkaline and contains organic sodium which assists in keeping inorganic insoluable

calcium (acid forming starches) in solution until the body eliminates. Very useful as a neutralizer in the body, therefore, helpful as an antidote to alcoholism.

Chamomile Flowers: Excellent for dissolving kidney stones, also useful for spleen function. As a face lotion, firms tissue keeping the skin young looking. Useful as a bedtime drink for insomnia. Also assists fatigue.

Chives: Influences the kidneys and bladder, assists in gravel, scalding urine, and irritation at the neck of the bladder. In the suppression of urine and obstruction of the urinary tract, it increases the urine, relieves an irritated bladder.

Corn Silk: Corn silk is one of the best remedies for kidney and bladder troubles, also useful in bedwetting.

Cubeb Berries: Gives tone to stomach and bowels, good for bladder troubles, scalding urine, increases flow of urine.

Fenugreek Seed: The whole seed has a very cooling affect on the bowels, lubricates the intestines and is very healing.

Queen of Meadow: Similar to chives remedy for gravel in the bladder, urinary disorders, increases the flow of urine.

Uva Ursi Leaves: Relieves the congestion and tones bladder. Useful in gravel, stricture, suppression of urine and catarrh of the bladder.

Herbs Useful in Diarrhea

Wild Alum Root:	Arrests diarrhea, relieves dysentery.
Shepherd's Purse:	A general clearing of all diarrhea.
St. John's Wort:	Useful in dysentery and diarrhea.
Cayenne:	Cleaning and cleansing of intestine.
Comfrey Leaves:	Cleanses, impurifies, and reduces infection.
Pleurisy Root:	Eliminates excessive mucus accumulation in gastro-intestinal tract.
Sanicle:	Cleanses and heals.
Chamomile Flower:	Tonic against infection and toxic poisons.

Other Ingredients That Could be Added

Agrimony Root:	Useful in all liver complaints.
Calamus Root:	Refer to laxatives.
Lobelia:	Most powerful relaxant known among herbs. Has cleansing affect in various liver problems. Removes obstructions in the liver. Excellent for nervous disorders.
Mandrake Root:	Has no equal in problems of the liver.
Plantain Leaves:	Kills worms in stomach and bowels, useful in diarrhea.
Poke Root:	Most useful in enlargement of the glands, spleen, and especially the thyroid. Useful in kidney inflammation and enlarged lymphatic glands.
Valerian Root:	General nerve tonic.
Psyllium Seed:	The whole seed. Assists in relieving autointoxication, the cause of many diseases, by cleansing the intestines and removing the putrefactive toxins.

FOOD COMBINING DIET (+ Polarity -)

Positive Foods (+)

The non-starchy vegetables are eaten with positive foods (+) which consist of PROTEINS - NON-STARCH VEGETABLES AND ACID FRUITS and TOMATOES. Meat protein should always be eaten with tomato juice, stewed tomatoes, canned tomatoes or fresh grapefruit.

Protein

Fish (best choice-no skin)
All fowl (no skin)
Lean meat (no fat)
Lamb (no fat)

Acid Fruits

Lemon	Grapefruit
Limes	Cranberries
Strawberries	Tomatoes (canned)
Raspberries	Blackberries
Blueberries	Gooseberries
Currants	

Dairy Foods

Milk (low fat-certified)
Buttermilk (low fat)
Yogurt (low fat)

Grains

Wheat germ

Non-starchy Vegetables

Watercress	String beans
Garlic	Spinach
Onions	Endive
Turnip greens	Eggplant
Dandelion	Cucumber
Green peppers	Kale
Kohlrabi	Leeks
Mushrooms	Mustard greens
Okra	Oyster plant
Parsley	Radishes
Rutabagas	Artichokes
Asparagus	Beets
Beet tops	Cabbage
Cauliflower	Celery
Chard	Sprouts

Note: Never eat meat and fish alone, always include tomatoes or grapefruit or tomatoes by themselves or grapefruit by itself. The non-starchy vegetables may be eaten in any combination with or without meat or tomatoes. Meat may be eaten twice a day,

best for lunch and dinner. Fruit for breakfast (remember no citrus fruits if herpes are a problem), and/or milk, buttermilk, or yogurt.

ALLERGY POLARITY COMBINATION DIET CHART

Negative Foods (-)

The non-starchy vegetables are eaten with negative foods (-) which consist of FATS - CARBOHYDRATES - STARCHES and SUGARS. Citrus acid fruits should not be eaten. Starchy vegetables should be eaten with non-starchy vegetables while sweet fruits whether fresh, stewed, dried, canned or water packed should be eaten for breakfast or in between meals.

Starchy Vegetables

Sweet potatoes
Parsnips
Pumpkin
Peas
Carrots
Potatoes

Grains

Whole wheat bread
Whole wheat flour
Cereals - crackers
Cornmeal (yellow)
Canned corn

Beans (Legumes)

Dried beans, peas, lentils
Peanuts
Soybeans

Sweet Fruits (Dried)

Dried fruits: dates, figs, raisins

Processed Sweets

These are best eliminated from the diet.

Non-starchy Vegetables

Artichokes
Rutabagas
Asparagus
Radishes
Parsley
Betts
Beet Tops
Cabbage
Cauliflower
Celery
Chard
Dandelion
Endive
String beans
Watercress
Garlic
Green peppers
Kale
Kohlrabi
Leeks
Mushrooms
Mustard greens
Okra
Onions
Oyster plant
Cucumber
Eggplant
Spinach
Turnip greens

Sugar, candy, syrup, honey, jams and jellies, cookies, pastries, cakes, and others that are similar.

Fruits (Fresh)

Bananas, avocados, cantaloupes, watermelon, and grapes.

Oils - Fats

Butter, cream, meat fat, oils

Juices (Fruit)

No citrus

Only use cherry juice, grape juice, prune juice, pineapple juice, and fig juice.

Note: Starches should always be eaten with non-starchy vegetables.

Best for lunch and dinner.

Sweet fruits and sweet juices best for breakfast, or in between meals, never with meals.

REFERENCES

DIET RELATED TO KILLER DISEASES, V NUTRITION AND MENTAL HEALTH HEARING BEFORE THE SELECT COMMITTEE ON NUTRITION AND HUMAN NEEDS OF THE UNITED STATES SENATE NINETY-FIFTY SESSION JUNE 22, 1977

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Pergamon Press, New York, Toronto, Oxford, Sydney, Frankfurt, Paris

NUTRITIVE VALUE OF AMERICAN FOODS IN COMMON UNITS
Agriculture Handbook N. 456
Agricultural Research Service, United States Department of Agriculture
Washington, D.C., Issued November 1975

COLLECTED PAPERS OF THE MEMBERS OF THE INTERNATIONAL COLLEGE OF APPLIED KINESIOLOGY
Diagnosis and Treatment of Allergy Using AK by Anu De Monterice, M.D.
New Life Publishing Co., 1001 N. Swan, Tucson, AZ 85711

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These may be obtained from Hollister-Stier, the large allergy supply house with outlets in various states. The main office is in Spokane, Washington
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Color Coded Systems, 7759 California Avenue, Riverside, CA 92504

PSYCHOLOGICAL REVERSAL

Roger J. Callahan, Ph.D.

"We have left undone those things which we ought to have done; and we have done those things which we ought not to have done; and there is no health in us."

The Book of Common Prayer

Abstract

The phenomenon of psychological reversal (PR) is identified. The implications of PR for any form of successful treatment or activity are discussed. The relationship between PR and switching is considered. Corrective procedures for PR are mentioned. It is hypothesized that any treatment or procedure will be less effective or totally ineffectual if a client, patient or student is reversed in that specific area of his psychology.

Reversal Callahan

A few months after I was first introduced to the phenomenon of muscle testing, I had the following experience with one of my clients who had many problems including being overweight. She had been dieting with little success for years. I asked her to picture herself thin the way she wished to be. I wasn't surprised when she went weak because I knew she had certain fears associated with being slender and sexually attractive.

What surprised me was, when I asked her to picture herself thirty pounds heavier than she was (she was already thirty-five pounds heavier than her desired weight), her muscle got extraordinarily strong. I had her say "I want to lose weight" and she went weak. When I asked her to say "I want to gain weight", she tested strong.

I tested six other clients who had been dieting for months or years without success. They all showed the same pattern; I call it a psychological reversal. I first considered the possibility that this reversal phenomenon was associated with fear of sexuality. Some psychologists and psychiatrists believe that some individuals are overweight in order to obscure their

fear of sex. This possibility was put to rest when I found the same psychological reversal in one of my male chronically overweight clients who was a middle-aged, big, tough, happily married construction foreman. I knew him well and was quite confident that he harbored no fears of being slender and sexually attractive.

I began testing all my other clients with their major presenting problem, e.g., "I want to get over my anxiety attacks"; "I want to have a better relationship with my wife (husband, lover)"; "I want to be successful in business"; "I want to overcome my frigidity, impotence, premature ejaculation, etc."; "I want to be a successful and/or fine actor, singer, musician or composer". The negative or reverse of each sentence was also given and tested.

I was flabbergasted at the results of these tests. I found to my chagrin that the majority of my clients got weak when they thought of getting better and got stronger when they thought of getting worse. No wonder psychotherapy is so difficult! Looking back at my thirty years of practicing psychotherapy, I

knew I had many clients in the past whom I would now label as reversed. They had done well even though it was a hard, long struggle for both of us. Something in therapy, over a long period of time must have overcome the psychological reversal. But, whatever it was, it was slow, indefinite, excruciatingly frustrating to both client and therapist. Before mentioning some corrective procedures, let's look more closely at a PR.

What Is A Psychological Reversal? -- A psychological reversal exists when a person claims he desires to achieve a specific goal but his actions and major motivation, as well as his results, appear to be contrary to his stated goal. Superficially or outwardly he appears to be striving to achieve (in the specifically reversed area), but he will grossly or subtly sabotage the effort.

A psychological reversal is revealed when a person who tests strong has the indicator muscle go weak when he states or imagines a positive goal that he says he desires to achieve. When he states or imagines the failure or negative of that goal he tests strong.

Reversal Callahan

Testing strong on failure is required in order to consider it a PR. If the individual tested weak on achieving and failing, it could merely be due to the stress associated with that area.

Lie detection methods measure stress indicators such as heart rate, blood pressure, respiration rate and GSR. Bates (1) discovered that when a lie is told, even without deceitful intent, visual acuity declines. Many have demonstrated that an indicator muscle goes weak when a person doesn't tell the truth. Certain magic specialists use their sensitive perception of subtle muscle strengths and weakness in a "guide" who, unbeknownst to the "guide", leads them directly to hidden objects.

From a motivational standpoint, a PR is a perversion of how one's system ought to work. When a person thinks about his aspirations or his positive goals he should feel strong and healthy - not weak and sick.

If you imagine that a person carries around with him an internal conditioning response system, somewhat like the Shick system for quitting smoking, where a mild

stress or unpleasant shock is given when the object to be avoided is seen or thought about, then you can see what the person in psychological reversal is up against. He is punished with stress (goes weak in the clear) when he thinks of his goal and rewarded with strength when he thinks of failure. A perversion, if there ever was one. He is not geared for success, he is geared for failure and repeated failure is what happens.

Anyone who works with people is aware that some very intelligent and seemingly highly motivated individuals fail no matter what program, method of treatment, coaching technique, educational procedure, (or whatever) is used. With such chronic failures, it seems likely that when some particular technique is successful, it may be a function of the ability of the technique, coach or doctor unwittingly to correct the PR that is the most relevant factor in treatment success. Conversely, some teachers, coaches or doctors may induce a reversal in some of their clients.

Many psychologists and others have stated over the years that certain patients <u>want</u> to be ill, or <u>want</u> to

be disturbed, or even die, even though the patient actively seeks out help. Freud postulated a death instinct. Ellis points out that most neurotics are self-sabotaging and self-defeating (3). Some religions and individuals believe in possession by devils or evil spirits.

I believe that the actual foundation for all of the above notions is the phenomenon of psychological reversal.

Although PR is an all or none phenomenon, it exists in degrees. For example, some who are PR for weight may weigh three hundred pounds or more and others may be carrying only ten pounds of excess weight that they have been unable to lose but trying to lose for fifteen years or more. Some reversed gamblers may merely consistently lose a significant but tolerable sum of money on each occasion, while their more severly reversed brethren will lose everything they own or can borrow or steal on any occasion.

The proclivity for PR varies greatly among individuals and may very widely within an individual over time. I observe that as an individual progresses in psychotherapy,

increases his self-awareness, enhances his self-acceptance and, most importantly, improves his way of living, his tendency to reverse is greatly lessened.

I imagine that there is a point or a fine line between a reversed and non-reversed state. Some individuals live constantly close to that line, on one side or the other, while others are far removed from that point, on one side or the other. All therapy, educational procedures, treatment procedures, etc., to be maximally effective, need to be oriented toward eliminating or reducing the degree of reversal as well as implementing its own dictates.

Massive Reversal -- Soon after discovering PR, I found some clients who were reversed on everything good or desirable in life, not just in a particular psychological area. This client goes weak on anything good and tests strong on anything bad. I routinely check for this by having the client say "I want to have a good life" and "I want to be miserable" and testing an indicator muscle for each expression. These are vague general statements and are effective in revealing the massively

reversed individual. In prone individuals this massive reversal can occur in an instant provoked by the slightest form of stress, upset, or self beration.

Although it appears to be rare, there are some massively reversed individuals who are not reversed in a certain area. I was lecturing and demonstrating to a group of actors and I tested a man who was reversed in every area tested. His teacher suspected that he was not reversed in acting and asked me to test him on this. Much to my surprise, he was not reversed in the area of acting.

A good example of what I call a massive reversal is presented by Coca (2, p. 50): "It all seems simple. And yet I know people who are bedridden with nothing but time on their hands, who would not devote the time and energy necessary to complete a survey."

An example of a psychological reversal is "I know automobile owners who, if told they were pouring a corrosive chemical into their car engines when they used a specific type of gasoline, would spend days testing the truth of my statement. But these same people, if

told they are pouring what are to them poisons into their own body engines, would not take one hour to test the truth of my statement" (2, p. 50). He is describing one who is reversed on their health but not reversed on car care. Auto mechanics doubtlessly could cite many instances of individuals who are reversed on care of their car.

Relationship to Switching -- In May, 1981, I obtained Walther's new book (5) and from reading this I conclude that PR and switching are probably related. For example, since reading about Goodheart's Bnai Brith effect (5), I have found that when a reversal is induced (by having the PR prone individual tune his mind or think about his chronic problem), each individual has shown that effect. When the reversal is corrected, by any means, the effect is not present.

I am confident that there are at least thousands of other adverse effects, psychological as well as physical, as yet unidentified that occur when a PR is present.

If switching is fixed in a client, the repair will be immediately overturned if the client tunes his mind

into an area of psychological reversal. This is why it is so important for the AK practioner to be aware of the psychological reversal phenomenon.

Because of the nature of psychotherapy, more psychological reversals are evoked in that profession than perhaps any other kind of endeavor. This is doubtlessly one of the major reasons for psychotherapy being so inefficient.

It is necessary to alert any client to his PR so he can take quick and effective action to fix it, or them, and clear the way for effective treatment.

I have a mature (38 year-old) college student who is not generally switched (or massively reversed) who has never had a problem reading. However, she is PR for chemistry (no other subject) and when she thinks about chemistry, she becomes PR. Upon reading chemistry, she shows the Bnai Brith effect. This does not occur when she reads other subjects. I believe that specific dyslexia (as well as all the other problems inherent in switching) occurs whenever her mind tunes into chemistry.

Academic subjects that an individual is "psychologically blocked" on are subjects that trigger a PR and bring on the consequent problems inherent in switching. Simple corrective procedures can bypass this formidable obstacle and permit the "blocked" individual to achieve in hitherto difficult or impossible areas.

Since I've identified the phenomenon of PR I can often, though not always, detect it in a client's manner, facial expression, attitude or verbal content. The obvious form of PR expression is outright hostility, negativism, sarcasm or hopelessness. Some clients are much more subtle than others. Repeated failure for no obvious reason is a usual sign of PR.

In the past, I used to spend hours, weeks and maybe months or even years striving to overcome a client's negativism (or PR). Now it can be done rapidly and the time spent in psychotherapy is, therefore, dramatically more efficient. Interestingly, one extremely reversed client quit therapy the moment I revealed his reversal to him.

Reversal Callahan

An example of using PR outside of psychotherapy is the following: The first time I tried Goodheart's glabella temperature lowering procedure on a client (4) (a young woman with anorexia), I was so absorbed carrying out the procedure that I wasn't observing the client as carefully as usual. I tried for an hour and a half vigorously tapping this poor client's first toe and underneath her eye to no avail. Her temperature didn't vary one iota. I concluded that I must be doing something wrong and I listened to Dr. Goodheart's workshop tape (4) a few more times, but I couldn't find my error.

Two days later when I first awoke, I saw my client's face vividly in my mind. I leaped out of bed and shouted "She was reversed, she was reversed!" My half-asleep wife thought I had gone mad.

I had always been able to tell when this client was reversed from observing her facial expression. Ordinarily, I would have spotted it and corrected it immediately.

The next time I saw this client, I did a <u>retrospective</u> PR check. First I asked her to say "I want to have a good life" and she tested strong, and she tested weak

on "I want to be miserable". This showed that she was not massively reversed. Then I asked her to close her eyes and recall our last session. Then, while she held that picture in her mind, I tested her with those sentences again and she was reversed. We were both delighted for now we knew why the procedure didn't work.

In our next session, we repeated the procedure and we had to continually check for and correct her PR, but within ten minutes, her glabellar temperature went down two degrees. Since that second session, she has been eating three meals a day for the first time in fifteen years.

Incidentally, I have since used Goodheart's procedure on four other clients and three of them got reversed as I began tapping. A chiropractic colleague told me that the procedure was tried on a number of patients with no success. I see two possible reasons for this: patients who need this procedure show E.I.D. and there is probably some relationship to PR and, secondly, the vigorous tapping on the face is quite stressful to these people and, if they're not reversed or switched, the stress pushes them over the line.

Correcting a PR -- There are numerous ways to correct PR. Systematic research is required to establish the most effective and long-lasting cure of PR. At this point, I can report the findings in my psychological practice.

I find that if I have a client state "I profoundly and deeply accept myself", his reversal will be corrected. The exception to this has yet to be observed.

Because saying this corrects the reversal, it is an indication that the person is deficient in self-acceptance and excessive in denigrating himself in the PR area. The client may be completely unaware that he does this to himself.

Authentic self-acceptance cannot be achieved through the mere verbalizing of a fine-sounding statement. But, when uttering a particular statement fixes PR, it indicates an area of desirable achievement. It delineates a goal. That is the way I view "affirmations", i.e., the identification and explication of a suitable target or goal. I do not believe that an affirmation in and of itself is sufficient to effect long-term cure, although

it may give momentary relief. However, there must be follow-up, consistent behavior that is supportive to the idea in the affirmation.

Psychological reversal is associated with the small intestine alarm point. I found that tapping the top of the little finger while the mind is focused on PR fixes it. Nutritional substances such as Standard Process Vit. B, RNA, Sero-GI Forte also are corrective. I found that the Bach remedy "Rescue" is also corrective and recommend that it be taken every waking hour for two weeks.

After the PR is cleared, there is often a new weakness at the SI alarm point that will be revealed.

It is necessary to correct the SI alarm point again. It can be done with the identical nutritional supplement procedure that was just used to clear the PR, but now it must be repeated. The previous ingestion of the substance to clear PR does not clear the SI at this level. It's as if the mind must tune the receptors to carry out the repair at this newly revealed level.

Conclusion -- I hypothesize that a patient, client or student will not be cured or show sustained improvement in any particular area as long as he is psychologically reversed in that area. I hypothesize that this applies to cancer patients as well as someone who merely wishes to learn how to do a dance step. Nothing will work as effectively as is possible as long as a reversal is evoked in the area being treated or learned.

Fixing a reversal is not a panacea and does not cure any problem other than the PR itself. It makes it possible for treatment to contribute to cure. It is, I believe, a necessary precondition for effective cure or achievement in any area.

It is my policy since discovering PR to always make sure a client is not reversed before beginning any treatment procedure. If there is a PR, it is fixed and the client is also instructed on the importance and procedure of correcting it.

I believe that if you check patients who have been refractory to treatment or whose response has been limited, you will find a significant number of them who are reversed for that specific problem area.

References

1. Bates, W. H., Better Eyesight Without Glasses, New York: Jove, 1977.

2. Coca, A., The Pulse Test, New York: Arc, 1956.

3. Ellis, A., Reason and Emotion in Psychotherapy, New York: Lyle Stuart, 1962.

4. Goodheart, G., Kinesiology, Acupuncture, Nutrition, Neurolymphatics, Anaheim: Sounds on Health, Tape 2, 1981.

5. Walther, D., Applied Kinesiology, Pueblo, Colorado: Systems D.C., 1981.

A RAPID TREATMENT FOR PHOBIAS

Roger J. Callahan, Ph.D.

Abstract

A procedure for rapidly curing phobias is presented. The procedure is applicable to a wide range of phobias. Speculation on how it works is presented.

The majority of people admit to having a phobia (10). It's safe to assume that many more than this number have a phobia including those who won't admit it, as well as those who avoid the phobic situation so thoroughly that they are no longer aware that they have a phobia, e.g., "romantic phobia" (4). Sutherland et al (11) state that phobias are the most common problem presented to clinical psychologists.

A phobia is an excessive or disproportionate degree of fear for a situation, event, animal, object, or activity. The objects of phobias are limitless. Woody Allen, for example, once said that he was phobic for sea level. The degree of fear may vary from mild to overwhelming. Severe agoraphobics are unable to leave

their homes.

Freud believed that phobias were a palatable substitute for Oedipal fear (7). Psychoanalytic treatment of phobias, however, has been noteworthy for its ineffectiveness. Few modern psychologists agree with Freud's view.

In recent years, Behavioral Therapy, including approaches utilizing systematic de-sensitization, relaxation, and working with hierarchies of fear and Ellis' Rational-Emotive Therapy have radically improved the effectiveness of phobia treatment. These relatively efficient psychotherapy methods, however, still can be quite time consuming and often take months or sometimes years to achieve cure or significant reduction of the acute fear response.

Diamond (5), in a discussion of sounds as therapy, mentions relieving fear of going to the dentist by finding an alarm point associated with that fear and fixing the weakness in that meridian.

I have since tried variations on this procedure with numerous phobic clients (and even strangers) and

I have found this combination of applied kinesiology and acupuncture to be the most powerful method of treatment I have ever seen or heard of in thirty years of psychological practice.

Psychological Hydrophobia: A Case Study -- Mary is a 48 year-old woman who had an overwhelming fear of water. She was terrified that water was going to get her and completely envelop her. The fear, she said, was far worse than any fear of dying. She had been plagued with nightmares about water "getting her" as long as she could remember. Her parents told her that they are unable to recall a time when she was free of this debilitating fear. If she heard or read about a flood or any kind of accident involving water, she would have a severe anxiety attack.

We had worked on this problem for a year and a half using hypnosis, systematic de-sensitization and deep relaxation. As a result of this work, she was able, for the first time in her life, to sit with her feet dangling in the shallow end of a swimming pool. However, she still was unable to look at the water and she always had a severe headache after the therapy session. She

still could not walk closer than about fifteen feet near the deep end of the pool, fearing to be drawn into the water.

In trying this new procedure on her, I first checked her for a psychological reversal (3). I had her say "I want to get over my fear of water" and her indicator muscle tested strong. I then had her say, "I want to keep my fear of water" and she tested weak. If she had been reversed for her phobia, it would have been necessary to correct that before any treatment procedure was begun.

We were in the house and I asked her to imagine being close to the swimming pool outside and she began to shake and she tested weak in the clear. She was too anxious to continue with that instruction and she appeared to be getting ill, so I told her to imagine herself being farther away from the pool. She was weak in the clear and the muscle strengthened when she touched her stomach meridian. She mentioned that she felt an awful feeling in the stomach whenever she thought of water.

Reversal Callahan

The meridian was strengthened using Diamond's sound for the stomach meridian, "Ba Ba Ba" (5), while thumping her thymus. I have since found that any means of strengthening the meridian will do as well. I have found that tapping the beginning and end of the stomach meridian or putting an acu-aid at the end and/ or beginning works extremely well.

After the procedure, she tested strong when imagining being close to the pool. We went out to the pool and she was thrilled because it was the first time she could recall having no fear of water. She immediately walked down to the deep end, leaned into the pool and splashed her hands with delight. She said, "I feel no fear, but I know I shouldn't jump in the deep end because I don't know how to swim". I was glad to hear her say that because she had no previous dealings with bodies of water and I didn't want her to feel careless with her newly won freedom.

That evening it was windy and raining. She was always afraid of rain because it might develop into a flood, even though that never happened where she lived. She drove to the beach by herself on the way home,

another first, and watched the huge waves in the storming Pacific Ocean. She reported that there was not even a slight apprehension.

Almost a year and a half has passed since this rapid cure and there has been no relapse. Her nightmares about water have disappeared.

Other phobias that I have treated successfully in this manner include: fear of heights; flying; snakes; fear of asking attractive women for dates; talking on the telephone; fear of jumping in deep end of pool; riding horses in the mountains; spiders; singing for an audience; acting; fear of dentist; fear of group therapy; driving a car; fear of going to a party; fear of being in a large theatre; an artist's fear of publically expressing satisfaction with her paintings; fear of public speaking; fear of impotence; and fear of being inorgasmic.

I find that almost all phobias involve the stomach meridian. The only exceptions I've found, so far, are spiders, which was spleen in the two cases I treated; fear of asking attractive girls for a date or fear of people which is sometimes heart meridian; and some of

the sexual fears were bladder meridian. It appears that the cure is as effective regardless of the meridian, but about 95% involve the stomach meridian.

Theory: What Happens? -- Emotions consist of a mental appraisal concurrent with the perception of certain bodily states (1, 2, 6).

The phobic individual appraises an event, situation, or object as being threatening to him and feels the powerful physiological concomitants of acute fear. He feels exactly the same as does one who appraises an authentically threatening situation, event, or object to be dangerous.

When the phobic says he "knows" that he ought not to be terrified, but he is terrified, he is saying, in other words, that he wishes he didn't believe what he actually deeply believes in regard to the feared event. When one believes, rightly or wrongly that something is frightening, fear is felt mentally and physically.

It seems likely that at the physical level, acute fear or anxiety is related to the presence of adrenalin (1).

Restak (9) reports on Pomeranz's study showing that the blocking of pain responses with acupuncture occurred through the acupuncture causing a release of endorphins.

While preparing this paper, I read a report by Shaw and Pearson of a highly effective treatment of phobias using a drug (10). One of the writers overcame a severe public-speaking phobia by taking the drug Propranolol (8). The drug prevented the bodily symptom of severe anxiety and that was all she needed to be cured. I would add that a crucial factor in her cure was that her appraisal ability or faculty was not impaired by the drug as is the case with the use of alcohol or other depressants, tranquilizers, etc., which can not cure phobias. These drugs merely depress awareness of the moment and, after the drug wears off, the individual is at least as phobic as he was before or perhaps worse.

I believe it is likely that correcting the meridian imbalance either inhibits the production of adrenalin, releases an antagonist to it, or works similarly to Propranolol in blocking the beta receptors. Knowledge

here awaits the result of physiological experimentation.

Special Problems -- The presence of severe multiple phobias or severe agoraphobia usually has other complications such as hypoglycemia, schizophrenia, or borderline psychosis. Such individuals can be highly responsive to the phobic treatment, but it is not as effective as it is with the treatment of simple phobia. These people have many accompanying problems that have to be attended to in addition to clearing up a specific phobia. On the other hand, when such a client is able to be successful with a phobia, a real basis for desperately needed self-confidence is established. Such confidence can launch a major thrust forward into total recovery.

The Logistical Problem -- When a client tests strong while thinking of the phobic situation (and he's not reversed), he is cured of the phobia at that moment. If the client is immediately exposed to the phobic situation, the client knows he is cured. He has confidence in himself, in the therapist and in the procedure.

However, if there is a time-lapse between the cure and the exposure, the client quite naturally will begin

to doubt that he is cured. This doubt, centering around the already highly-charged phobic situation, may reduce the effectiveness of the procedure.

The ideal situation, of course, is to have the phobic situation handy. In each case the cure rate has been 100%. I have taught patients and their mates how to carry out the treatment so they could do it without me, e.g., flying in commercial aircraft.

Recently, I have been experimenting with the use of acu-aids and they seem to reduce this logistical limitation.

To the uninitiated, the procedure may seem a little peculiar or even weird and that may present a minor problem. But when they experience the powerful positive effect, that is no longer a difficulty. As the treatment becomes well-known, this problem will disappear.

I once carried out this treatment with a complete stranger whom I observed cowering with fear on an observation tower in San Diego. She would not move from the center of the tower and she was afraid to look at the view or let go of the center post near the stairs.

I told her I could help her get comfortable and that I was a psychologist who was doing research on phobias. She obviously didn't believe me, but her boyfriend urged her to give it a try. I gathered that if it weren't for him, she wouldn't ever have gone near the tower. When I began the procedure, she looked at me like I was some kind of nut. Like most people, she hadn't ever seen anything like it. Also, she was reversed (3).

Within a few minutes she was standing next to the edge of the tower and enjoying the lovely view in comfort.

This incident made it very clear to me that it is the power of the technique itself which cures the phobia rather than suggestion or any possible charismatic effect.

There are many people who are phobic for certain medical and dental procedures. A claustrophobia prevented an acquaintance from taking specialized X-rays that were needed to diagnose a life-threatening condition. Others go through excruciating psychological suffering submitting themselves to procedures for which they are phobic. Many young children suffer horribly in doctors' offices, clinics

and hospitals. Whenever this extensive suffering is due to a phobia, it is completely unnecessary and can be eliminated with this simple technique.

Perhaps one of the most severe by-products of a lingering phobia is the continuing injury that it does to a person's self-esteem (2, 12). The individual knows that he is submitting to an irrational fear and this knowledge, whether conscious or not, erodes his regard for himself. The continued submission to a phobia, whether or not the person is aware of it, reduces one's confidence to deal with difficult issues in his life.

Conversely, of course, the major benefit of overcoming a phobia, besides the relief obtained in the phobic area, is the knowledge that a fear was overcome that was believed impossible to overcome. This knowledge contributes to an individual's self-esteem and increases his general self-confidence, paving the way for him to develop and grow in other areas of his life as well.

Summary of Phobia Treatment --

Phobias Callahan

1. Check for a possible psychological reversal. Ask the client to state "I want to be cured of my phobia" and "I want to keep my phobia", testing an indicator muscle after each utterance. If the client is psychologically reversed, i.e., he says he wants to be cured but tests weak on that statement and tests strong for keeping his phobia, then correction must be made before going further (3).

2. Establish that there are no alarm point weaknesses. Test an indicator muscle for strength and then have the client think of the phobic situation. If the indicator muscle goes weak in the clear, therapy localize the stomach meridian. If the indicator muscle doesn't strengthen, find the correct alarm point. (The odds are about 95% in favor of the stomach meridian being involved.) If the client doesn't weaken in the clear, find the alarm point; it is likely to be stomach. If no alarm point is involved, make sure the client is continuing to think of the phobic situation (REM is not necessary). If he tests strong, then again check for reversal and correct it.

3. Correct the alarm point weakness by any means and re-test the indicator muscle. It will now test

strong. As a precaution, again test for a psychological reversal. A psychological reversal will disguise a weakness. If not reversed, the client is, in effect, now cured.

4. If immediate exposure to the phobic situation is not possible, carefully demonstrate alarm point strengthening technique to client so he may repeat it as necessary. A severe lack of confidence can momentarily overturn a correction. Instruct client how to use acu-aids which seem to provide a continuing flow of corrective energy.

5. If the client revealed a psychological reversal for the phobia, have him routinely correct the psychological reversal before attempting meridian correction. If the client isn't psychologically reversed and corrects for it, the treatment is innocuous, but if he is psychologically reversed and he doesn't correct it, the treatment procedure will not work. An easy psychological reversal correction is for the client to tune his mind to the phobia and to tap the tip of each little finger in turn while uttering "I deeply and profoundly accept myself".

6. The client knows he is cured when he experiences exposure to the phobic situation without debilitating anxiety. One experience like this is sufficient to permanently cure the majority of phobias.

For example, about eight months after Mary overcame her phobia of water, she casually mentioned that she had been made president of the senior ushers board at her church. This job entailed speaking in front of groups of people. Because of her fear of this, she had turned down this job for three years. She was, she said, afraid but she had confidence that she could now overcome her fear. We did the phobic treatment procedure and, since then, she has been enjoying her active role in the church.

References

1. Arnold, M., Emotion and Personality, Vol. II, p. 223, New York: Columbia, 1960.

2. Branden, N., The Psychology of Self-Esteem, Los Angeles: Nash, 1969.

3. Callahan, R., Psychological Reversal, Collected Papers of ICAK, Winter, 1981.

4. Callahan, R., A Guide to Romantic Love, New York: A & W, 1982.

5. Diamond, J., Speech, Language, and the Power of the Breath, pp. 14-15, New York: Archueus, 1979.

6. Ellis, A., Reason and Emotion in Psychotherapy, New York: Lyle Stuart, 1962.

7. Freud, S., The Problem of Anxiety, New York: Norton, 1936.

8. Physicians Desk Reference, pp. 570-571, Oradell, N.J., 1973.

9. Restak, R., The Brain, p. 343, New York: Warner Books, 1979.

10. Shaw, S. and Pearson, D., "Getting Rid of Phobias for Good", Reason, June, 1981, pp. 86-87.

11. Sutherland, E.A., Amit, Z. and Weiner, A., Phobia Free, New York: Jove, 1978.

12. Weinberg, G., Self Creation, New York: St. Martins, 1978.

A FILMED COMPARISON OF RUNNERS BEFORE AND AFTER KINESIOLOGICAL TREATMENT

by: Richard J. Caskey, B.S., D.C.

ABSTRACT:

This paper is by no means considered to be an end product, but actually a developmental beginning to an on-going research project with runners. We have begun an undertaking in which we are utilizing videotaping and motor drive 35 mm. photography to visually document on film the noticeable changes that take place in runners before and after progressive kinesiological treatment. This first paper will deal mostly with the procedure and portocol for filming and treating that we are now in the process of refining. At the spring, 1981 I.C.A.K. meeting, I became quite impressed with Dr. Goodheart's observations of Dr. Gideon Ariel's sonographic computerized analysis of athletes. With this concept in mind, I couldn't help but reflect back on the countless postural and gait changes that I have witnessed in practice that were quite obvious to the human eye immediately or progressively after treatment. It seemed reasonable that many changes should be quite demonstrable on filming equipment much less sophisticated and more readily

available than Dr. Ariel's 10,000 frame per second equipment. Our purpose in this initial aspect of study is to visually substantiate the efficacy of Applied Kinesiology (AK) as a means of altering the biomechanical errors and breakdowns in runners. We would hope that this method might avail itself as a useful tool, not only for practicing kinesiologists, but also for coaches and trainers alike. We are currently in the process of working with a varied group of runners ranging from low mileage joggers to a few world class runners. At our Acapulco winter meeting, I will have available slides and video tapes of the changes of at least twenty runners and will present a few of which show the most significant change.

METHOD:

For subjects, we have specifically chosen runners with definable complaints or injuries related to running. It was my opinion that those people who had a describable problem would more likely reveal running distortions visable on film. We also looked for individuals who had not been treated previously with AK. Our basic procedure is filming subjects on a motorized treadmill, which points out our first shortcomings of equipment. The particular treadmill we are using can be varied in speed, but the speeds are not measurably accurate and in the case of certain runners, the machine is unable to attain a speed fast enough for the

runner's normal pace. Also, because of the unit's instrumentation panel, which is directly in front of the runner, it is almost impossible to attain front view pictures. Therefore, we are forced by equipment limitations, to take a series of static and running films from a lateral and posterior-anterior (P-A) view. It was evident after our first few filmings that many static postural changes were occuring; therefore, we are including static postural films in our protocol. We have asked our male runners to run with only shorts to allow for optimal visualization of upper body mechanics. We have set the precedent that the participants must use the same running shoes in all filming sessions to eliminate the possible factor of change due to equipment variation. This also presents a problem because certain participants are running in shoes which are either not biomechanically sound for their particular needs or the shoes themselves have broken down into a deviated form (i.e., a shoe which is dropping in on it's medial border due to chronic pronation). There have already been cases where we realized that certain remaining visual running problems were mostly attributable to the deviated shoe, but we felt that for purposes of accuracy, we should not alter the shoe if we were attempting to claim that treatment caused change. Our protocol also includes various views of the shoes alone to show wear patterns. (We are also waiting to see in future filmings if, by changing the runners gait deviation, we will be able to see any change of the shoes

themselves, back to a more normal plane of wear.) Our filming equipment includes a video taping camera with audio recording and stop-action capacity, and a 35 mm. camera with a 5 F.P.S. motor drive. To allow for proper exposure and fast enough shutter speeds, we are using 400 ASA slide film push processed to 1600 ASA.

In reference to our filming and treating format, we are utilizing a standard protocol for each filming session. This protocol will be included. In order to facilitate the complicated job of organizing slides and editing tapes, we are including a numbered sign visable in each picture. The number zero indicates initial pre-evaluation films; with number 1 indicating films after exam and 1st treatment, number 2 indicating films after 2nd treatment, etc. Our procedural format is as follows:

1) Complete history and consultation.
2) Number 0 protocol filming.
3) Complete AK examination including all testable muscles, structural, cranial, nutritional, and acupunctural faults.
4) Treatment correcting all of the above findings. (A documentation of each mode of therapy is kept for each treatment.)

5) Number 1 protocol filming.
6) Same day immediate re-evaluation of previous findings.
7) Correction of all recurring faults or weaknesses.
8) Number 2 protocol filming.
9) Same day re-evaluation of recurrent faults. At this time, various factors such as reactive muscles, fascial stretching, aerobic and anaerobic muscle testing are stressed.
10) Correction of above problems.
11) Number 3 protocol filming may be done with patient tasting indicated nutrient.
12) Number 4-6 protocol filming done before and after weekly treatments for one month.

We have taken as much care as possible to maintain exacting records of specifically which therapeutic measures are taken at which treatment. We are also recording any at home instruction such as the runner stimulating his own neurolymphatics.

Protocol for Filming

Numbered signs to appear in each filming to indicate sequence.

VIDEO TAPING:

1) Static lateral full body posture
2) Running lateral full body
3) Running lateral ½ body (pelvis to feet)
4) Static P-A posture
5) Running P-A full body
6) Running P-A ½ body (pelvis to feet)
7) Running P-A, feet and ankles

MOTOR DRIVE 35 mm. PHOTOGRAPHY:

1) Static P-A view of shoes on flat surface
2) Static A-P view of shoes on flat surface
3) Static view of flat surface of shoe sole
4) Static lateral full body posture
5) Running lateral full body - 3 shots
6) Static P-A full body posture
7) Running P-A full body - 3 shots
8) Running P-A ½ body - 3 shots
9) Optional views based on individual exam findings
    a) Overhead view of feet to show relative internal or external rotation of the leg
    b) Patient lying supine with view showing relative pronation or supination of feet

There are a few remaining options we are still deciding on. Our concern is whether to prevent the doctor and runner from seeing the films between treatments. This could then qualify as a type of blind study, but our feelings are that our purpose should be to institute a means of using the video tape as instant feedback. This instant feedback has been valuable in guiding therapeutic directions. An astute observer had commented that the runners should not see the films until the end, because many athletes are very aware of their bodies and able to make mental changes to correct or alter stride. Therefore, we are not showing the films to the runners until completion of all filming.

We have already mentioned certain variables of study such as the speed control of the treadmill and the pre-existing wear pattern of the shoes. There are definitely other variables including diet and emotional stress. As kinesiologists, we are quite aware of the fact that various dietary or mental stresses can alter the strength of certain muscle groups. In light of this phenomenon, we are advising correct eating habits and nutritional supplementation when indicated, and keeping records or our recommendations. We have made a practice of having each runner keep a concise diary of his subjective observations of his running and any noticeable changes.

RESULTS:

It is currently impossible to render any statistical results, but the films themselves will tell the most revealing story. To date, we have been quite pleased and enthusiastic about the results we have seen. We are hoping that in the future we will be able to someway statistically analyze the results on some measurable level.

DISCUSSION:

It is our firm belief that this project will afford affirmation of what we as kinesiologists already know; that AK is a uniquely effective diagnostic therapeutic tool, especially related with sports management. We are truly excited about expanding our horizons with this project and including the monitoring of various measurable factors such as vital signs, aerobic capacity, vital capacity, and actual performance results. In order to visualize the runners in their natural habitat, we are even going to attempt to film them from a moving car with a portable camera. As previously mentioned, we will be sharing our collected films and data at the 1981 ICAK winter meeting. My special thanks to those who have helped tremendously with this project: My assistant, Jeff Fedorko, National College of Chiropractic (N.C.C.) intern; Tom Ballinger, head of N.C.C. Audio Visual Dept.; Daniel Driscol, D.C., head of Chiropractic Dept. N.C.C.; William Heinze, Ph.D., Director of Research, N.C.C..

A NEW APPROACH TO PRACTICE APPLICATION

by

Richard J. Caskey, B.S., D.C.

Since October of 1980, I have embarked upon a somewhat unique approach to practice involving a second location. I realize that quite a number of physicians maintain multiple satellite clinics, but this practice is actually 600 miles away. This paper is being written, not only to describe what I consider to be a valid, on-going research into the mode and application of therapeutic endeavor, but to answer the various queries I have received from other interested individuals.

The most obvious initial question is why a practice in Buffalo, New York when your regular practice is in the Chicago area. My first answer is that Buffalo is my home town and, therefore, there remains an endearing attachment. More importantly, my answer lies in the meaning of the word "doctor", which was originally equated with "teacher". I sincerely feel that we of the various health care professions have a need and responsibility to not only treat, but to educate our patients and community in all areas of good health. In Buffalo I saw an area, like so many others, that was somewhat behind the times as far as wholistic health care is concerned. With my extensive background

of lecturing to both professionals and lay people alike, I felt that not only might I help personal acquaintances, but also aid some of the local doctors in changing the existing concepts of natural health care and applied kinesiology (AK).

Based on a rather rigorous schedule in Illinois, we decided that we would be able to alot one extended weekend per month for visitation to Buffalo. Myself and my wife, Danuta (who has handled most of the business duties), have been flying from Chicago early on a Thursday morning and returning that Sunday evening. This once per month factor was our major concern, especially considering that in Chicago I practice in an office with frequent visits as a major portion of the treatment plan. As will be described a bit further on, this was not an insurmountable factor due to the nature of patients we have attracted.

You might wonder how it is even possible, while living 600 miles away, to attract patients other than family and close friends; our answer was to educate the community. Each Thursday evening is devoted to a health care class in which we try to share many of our ideas on natural health. These health care classes are each a three hour combination of lecture, audio visual, and demonstration about the classic three sides of the triangle of health and how AK may be used to deal with each area. We feel that these classes are vital, not only to stimulate new patients, but much more importantly, to stimulate a new

way of thinking. We have set a goal to educate the people in all areas of nutrition, exercise, nervous system, and emotional health so that we may effect a change in attitudes and life styles, which is so essential for a reversal of poor health. Each month we discuss certain basics and have emphasized specific topics in each lecture to interest people who are both new to the classes and also those who return each month. We have advertised the lectures with an occasional newspaper ad, but more specifically, with a monthly mailing of brochures, which describe the nature of that months lecture. Our mailing list is now rather extensive, including all of our existing patients, people signed in at previous lectures, health food stores, health clubs, colleges, and any establishments interested in wholesome living. Each month the number in attendance is growing from about 40 - 100 people per lecture.

To date, it has not been practical to rent a permanent facility, so we have made use of an executive suite in a fine hotel to act as our office location. The suite is a combination of side by side rooms, with one being set up as a reception area with desk facilities and other attractive sitting room furniture. The adjoining room is the living quarters in which we set up our portable table and other diagnostic equipment for examination and treatment. This room situation has worked our quite favorably; and when we have inquired patients as to their feelings about coming to a hotel, the vast majority prefers the plush, warm environment much more than the typically sterile doctor's

office.

In reference to procedure and nature of practice, we have found it essential to be entirely thorough and professional in every aspect of the word. In the first month's visit, we go through a full history and consultation with a totally complete physical, neurological, orthopedic, and applied kinesiological exam. Our exam includes testing every classic testable muscle and checking for all potential structural, cranial, acupunctural, and nutritional faults. Except in a very few immediately acute cases, there is no treatment until the next visit which is on the next month. During this ensuing visit, a written and verbal report is given to describe the nature of the problem. It is on this visit that treatment is initiated.

Owing to the unusual time factor, we spend more time with each individual patient trying to assure that all faults are corrected. We have strived to make an effort to eliminate all factors which contribute to the return of these faults. Special time is given so that each patient is instructed in his or her own exercise, dietary, or nutritional needs with special emphasis on at home, day to day patient responsibility. This, coupled with all the valuable information presented in the classes, gives a firm foundation for a new outlook on life. We initially started scheduling patients for exams and treatment on Fridays and Saturdays only, but when we started to put in 12 - 13 hour days we realized that we must utilize all available time. Presently, we are scheduling patients

on Thursday afternoon, all day Friday and Saturday, and a few Sunday morning.

Because of our emphasis on preventative care, we have attracted the right sort of patients for this situation. Most of our patients have chronic conditions such as hyperactivity, learning disabilities, chemical and glandular imbalances, and various musculo-skeletal complaints which have not changed with other modes of therapy. We have not had to deal with many acute situations, but when they have arisen, we have treated the patients on 2 or 3 of the days that weekend. When necessary, we have made provisions with a few of the other fine doctors in the area to provide emergency care. Patients who require X-rays are sent either to a local chiropractor, or in some cases, to a radiology lab. We ourselves check various urinary findings including Multistix, urinary sodium, calcium, and specific gravity.

My wife, Danuta, as mentioned, handles the vast task of orchestrating arrangements from Chicago and performing all the duties of receptionist secretary, and nutritional counselor in Buffalo. A private party has been employed to take various calls through the month for new patients, appointment changes, and patient questions or emergencies. We are promptly contacted as to the nature of the problem and, in most cases, I have been able to handle the problem over the phone with some timely advise or motivational inspiration.

The most rewarding part of this entire venture has been the results. When we initiated this practice in October, 1980, we had no way of knowing what sort of beneficial effect this type of practice might have. After 10 months of hard work and gratification, I am pleased to report that the results have surpassed our expectations. Not only have we seen demonstrable change in various definable symptoms, but have witnessed those intangible changes which occur when an individual has changed as a person. In an attempt to compare this sort of practice format with that of the regular frequent visit program we utilize in Chicago, suffice it to say, that each has its clinical relevance. For the truly acute situations, nothing compares with the unquestional benefits of seeing a patient regularly at that time, but for those somewhat difficult, chronic situations, this monthly approach is also quite valid. My own feelings are that the answer lies in helping those patients to make the necessary commitments to their own health.

Finally, some years ago, Dr. Goodheart introduced AK as an unsurpassed tool for evaluating human health. As members of the I.C.A.K., we ought to make it our responsibility to afford our therapeutic and teaching skills to as many others as possible. With so many sick people in need of our unique approach to health care, this is one more possible means of extending our horizons.

SPECIFIC POINTS FOR VITAMIN B2 AND VITAMIN B6 DEFICIENCY

by

SALVATORE V. CORDARO D.C.

ABSTRACT: Vitamin B6 facilitates a wide range of bodily functions. It aids in the production of antibodies and hydrochloric acid, as well as helping to maintain the sodium/potassium balance and the proper utilization of fats and protein. The Recommended Daily Allowance is as low as 1.5 - 1.8 mg. while therapeutic doses range much higher. A simple test for Vitamin B6 deficiency and a specific body point for therapy localization needed to be developed.

BACKGROUND: Vitamin B6, or pyridoxine, is a water soluble vitamin which is essential in the breakdown of amino acids and the metabolism of fats and sugar. It aids in the conversion of cholesterol into esters and in the production of catecholamines, a hormone for proper nerve impulses. B6 also has a significant impact on learning behavior.

The signs of B6 deficiency are widespread. There is a general loss of appetite and lack of HCL. There can be diarrhea, skin rashes, anemia and rheumatism. Other symptoms are depression, dizziness, hair loss, irritability and learning disabilities. Often the patient suffers from carpal tunnel, trigger finger or thumb, tingling, pain, numbness and edema in the hands and there may be an inability to wear rings. Personal experience has shown that carpal tunnel responds beautifully to B6 alone and with the use of Applied Kinesiology techniques accelerates repair rapidly.

Therapeutic applications of pyridoxine include nerve pain, diabetes, Parkinsonian neuritis, kidney stones, asthma, epileptic brain waves, red blood formation, artherosclerosis, high cholesterol, cystitis, hypoglycemia nausea in pregnancy, women on birth comtrol pills, inability to loose weight, psychiatric problems

and brain damaged children.

Since the body doesn't store B6 in large quantities, the vitamin can be easily depleted by alcohol, birth control pills, coffee and tobacco. Natural sources for B6 are blackstrap molasses, brewer's yeast, green leafy vegetables, organ meats, wheat germ and whole grains. However, in order to determine deficiency and to be able to work up and monitor a correct dosage I attempted to search for a point on the body that could be therapy localized.

DEVELOPMENT OF TEST: Dr. John Ellis in his book "Vitamin B6 - The Doctor's Report" shows a Quick Early Warning Test (QEW) that facilitates early diagnosis, which is illustrated below. The fingers must be able to touch the palm without flexing the knuckle joints. Inability to do so indicates B6 deficiency. "But," says Dr. Ellis, "capably performing the QEW test without difficulty or pain does not necessarily rule out a need at the cellular, or preclinical, level. Based on my observations and studies with approximately 5,000 patients on B6 therapy, I would doubt that a great many Americans are completely free of some degree of B6 deficiency."[1] Especially because of the potentially large number of preclinical patients I felt strongly that a point for therapy localization was essential.

Since B6 is involved in maintaining a healthy nervous system and blood supply, I felt that the already existing Neurovascular points might be useful in tracking down B6 deficiency. Therapy localizing neurovascular points alone was not satisfactory. But by TLing any neurovascular point that previously tested strong together with the B Complex point which is on the middle of the tongue we saw a positive response which could be negated only by Vitamin B6. Fifty patients were examined clinically in this way resulting in over 95% positive test results.

FOOTNOTE:

[1]Ellis, John M. and Presley, James, Vitamin B6: The Doctor's Report (New York: Harper and Row, 1973), p. 11.

SPECIFIC POINTS FOR VITAMIN B2 and VITAMIN B6 DEFICIENCY
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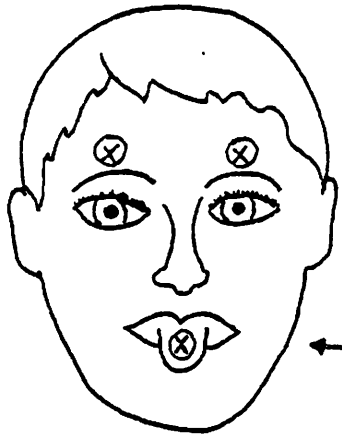
THE TEST: The test is conducted in the following way: Have the patient touch one finger on the middle of the tongue and one finger on any neuro-vascular point which has previously tested strong. You may have the patient use two fingers from the same hand or one finger from each hand to perform the test. If a previously strong muscle weakens, the patient is deficient in Vitamin B6. Dosage is determined by placing B6 tablet on the patient's tongue and retesting as above, working up the dosage to produce maximum strength. Subsequent monitoring should be made periodically to adjust level of the dosage.



Dr. John Ellis'
Quick Early Warning Test
Note that the fingers must be able to touch the palm without flexing the knuckle joints.

CHART:

	TEST				FIX		
	Any NV	B-Com	Together		Any NV	B-Com	B6
Over 50 Patients	neg	neg	pos		neg	neg	strong

SPECIFIC POINTS FOR VITAMIN B2 and VITAMIN B6 DEFICIENCY
SALVATORE V. CORDARO D.C.

ABSTRACT: Like Vitamin B6, Vitamin B2 is essential in a wide area of bodily functions. Involved in such diverse body parts as eyes, hair, nails, skin and soft body tissue, proper maintenance of adequate B2 levels is obviously important. Thus, the need for a TL point which isolates Vitamin B2.

BACKGROUND: Vitamin B2, known as riboflavin, is a water soluble vitamin. It is a very sensitive vitamin, being easily destroyed by light and freezing. It is utilized in the formation of antibodies and red blood cells, in the metabolism of carbohydrates, fats and proteins, in all cellular respiration and in the maintenance of mucous membranes. Animal experiments have shown the special properties of riboflavin as a cancer inhibitor. Dr. Otto Heinrick Warburg theorized that the key to cancer prevention was in the protection of cellular respiration through the utilization of riboflavin and niacin. Vitamin B2 has been found to help control the craving for sugars and greatly improves vision in the elderly. Riboflavin is used theraputically against acne, alcoholism, arthritis, athletes foot, baldness, cataracts, diabetes, diarrhea, indigestion and stress.

Symptoms of vitamin B2 deficiency include cracks around the mouth and lips, itching and blood shot eyes, sore, purplish tongue, cataracts, anemia, burning feet and hands, loss of hair, retarded growth. A good rule of thumb in the need for riboflavin is the more tension and anxiety, the heavier the weight and the less the intake of dairy products, the more riboflavin is needed. Vitamin B2 is found in blackstrap molasses, nuts, organ meats and whole grains. Besides excessive light and freezing, vitamin B2 is destroyed in the body by alcohol, coffee, excessive sugar and tobacco.

DEVELOPMENT OF TEST: Since one of the most common symptoms for vitamin B2 deficiency is cracks at the corner of the mouth, I first had the patient TL the corner of the mouth whether there was cracking there or not. If a

previously strong muscle weakens, this is an indication of Vitamin B2 deficiency. If a muscle does not weaken, however, then the patient must simultaneously TL the corner of the mouth and the B-Complex point in the center of the tongue. If a previously strong muscle weakens, a Vitamin B2 deficiency exists. Both positive tests are negated by Vitamin B2 only.

THE TEST: The test is conducted in one of two ways: Patient touches one finger to the corner of the mouth and a previously strong muscle is tested. If it weakens, a B2 deficiency exists. If muscle remains strong, patient touches one finger to the corner of the mouth and one finger on the center of the tongue on the B-Complex point. One or two hands may be used to TL these points. If previously strong muscle weakens, patient is deficient in B2. Dosage is determined by placing Vitamin B2 tablet on patient's tongue and retesting as above, working up a dosage to produce maximum strength. Subsequent monitoring should be made to adjust level of dosage.

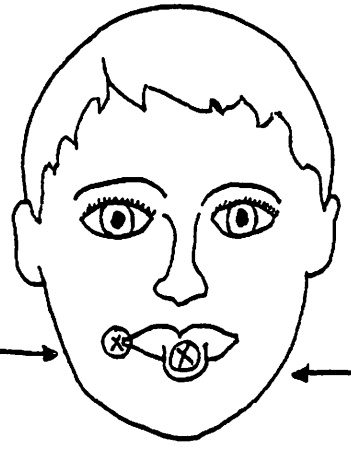


CHART:

	TEST				FIX		
	Corner of Mouth	B-Com	Together		Corner of Mouth	B-Com	Together
Over 50 Patients	neg/ pos	neg	pos		neg	neg	strong

BIBLIOGRAPHY:

Adams, Ruth and Murray, Frank, Body, Mind and the B Vitamins, Larchmont Books, New York, 1977.

Atkins, Robert C. and Linde, Shirley, Dr. Atkins' Super Energy Diet, Crown Publishers, Inc., New York, 1977.

Ellis, John M., and Presley, James, Vitamin B6: The Doctor's Report, Harper and Row, New York, 1973.

Fredericks, Carlton and Goodman, Herman, Low Blood Sugar and You, Charter Books, New York, 1969.

Newbold, H.L., Mega-Nutrients for your nerves, Peter H. Wyden, New York, 1975.

Hoffer, Abram and Walker, Morton, Orthomolecular Nutrition - New Lifestyle for Super Good Health, Keats Publishing, Inc., Connecticut, 1978.

Rosenberg, Harold, The Book of Vitamin Therapy, Berkley Publishing Co., New York, 1974.

A.K. RADIO AND TELEVISION PROGRAMMING

BY

Frederick J. Dieterle B.S.,D.C.

ABSTRACT

" If you enjoy lecturing and getting the word out, you ought to try these media. It's a new challenge in communication and one that is hard to pass up, if you feel even half way tempted. If done properly, it will greatly enhance the image of chiropractic, kinesiology and yourself in the community. It will educate and expand the awareness of the public as to the validity of natural health care and of course, your vast knowledge from hang nails to non surgical back care. If you're fairly quick on your feet, have an open line talk show."

INTRODUCTION

We have been on the air on a popular Christian station in Phoenix for over two years with great success and on four other stations; KXEG, KHEP, KIFN & KRDS from time to time. We have even carried news of the Hiatal Hernias and Ileocecal valves to the 390,000 Hispanics in South Phoenix; although it did present some special problems in terminology.

We were the first or second radio program of this type in the Phoenix area and we were told that due to the success of the present format, as opposed to straight advertising on television, radio, newspapers, Pennysavers and billboards, as some chiropractors are doing in Phoenix; this is why more than fifteen other

talk shows have sprung up in the area; from attorneys to dentists, podiatrists, acupuncturists, nutritionists and so on. One thing to remember is that the various professional groups as well as the Attorney General's office has deemed that it is within the realm of propriety and consumer protection that one may promote and advertise their particular skills in an effort to inform the public. I feel, however, that it must be done tastefully with a certain degree of sophistication and professionalism that informs rather than cajoles the public into coming to see you with seemingly flashing neon signs and autioneers tactics. It's simply not necessary.

HOW TO START

The best way to start is to check around your area and see which stations have talk show formats or the like. Introduce yourself and explain your objective with the program or marketing director over lunch. Don't sell yourself short or be over anxious, simply state that you would like to look at his rate card and you are trying to determine where you wish to do your program and need some demographics as to the type of audience they are reaching, as well as their rating on whatever rating system is being used in that area. Study this type of information and then if conditions are favorable, follow up with a subsequent meeting in your office, if you have a nice office and wish to impress him, or at the station so that you may view the

facilities. If you do not feel comfortable doing it yourself, obtain the services of a public relations firm, preferably someone that is smaller and has creative personnel who wish to see you grow and have your account in the future. They will do the foot work at surprisingly reasonable expense and probably know who in the marketplace would be interested in your type of program. They would probably receive a 15% discount of the normal rate card and that would be their commission so to speak. After which time, there would not be any additional charges to you for the programming other than the automatic 15% they would receive monthly, unless you use their services for other projects.

THE PROGRAM CONTENTS

We find that the public responds exceedingly well to our point of view and subject matter. Remember, as a point of confidence that you are the expert and will probably amaze yourself at the amount of knowledge that you have to call upon when answering everyday health questions.

Start the program by:

A. Reading letters of particular interest from listeners, answering particularly interesting questions from patients that week or month, mentioning a point of current interest that you have come across recently such as bee pollen, spirulina, pangamic acid or super oxide dismutase.

B. Give a particular case history of a patient who has a common ailment, but yet a unique twist perhaps and which you've obtained unparalled success, as usual. Keep it factual but make it colorful.

C. The audience's attention is limited as they may be at home moving around, on a picnic, working in their backyard or trying to read a book while they listen to you. There are certain words that will captivate their attention. The areas of greatest concern and in which they will identify as their own conditions as individuals are: fatigue, depression, headaches, pain in specific anatomical areas, lack of ambition, moodiness, weight loss, loss of libido, the use of vitamins, minerals, herbs, acupuncture, chiropractic, kinesiology, & hair analysis.

D. Vary the format. Have guess speakers. We have had local atheletes, psychiatrists, nutritionists, example: Ed Swartz, Paul Eck, school coaches, other doctors, associates, outstanding patients and etc.

E. You may have sponsors if you wish. From time to time many people will knock on your door and ask if they can be sponsors on your program. We chose not to do so and the program is sponsored by Sunrise Clinic only. Make sure the people you choose are responsible and related to the health field in a way that will enhance your image. Coors beer does not have preservatives, yet it falls into the doubtful category.

WHO LISTENS

It may amaze you, but we have a wide broadcast range and have had callers from three to four hundred miles away in the state. Ranging from Flagstaff in the north, to Douglas in the south, to Nevada. The majority of people that will follow up and visit you in your clinic are those that did not actually call on the phone and talk to you, but may be perhaps listening diligently for months on end. It is very rewarding to know this and they come with an attitude that is already very condusive to obtaining results. They feel they know you and have a very high opinion of you when they walk in the door ie: such as, a direct referral from a patient. Many of your peers and other doctors will be listening also as our experience shows. It is beneficial, therefore, to put occasional plugs in for the profession, stating that it would be desirable to see a chiropractor or kinesiologist in their areas for whatever particular condition they happen to be describing. The program can assist local association activities ie: a local legislative campaign which we discussed with the lobyists on the air and we obtained an amazing response from the listeners to the legislators.

POSSIBLE LIABILITY

You should always be aware that someone may not like what you have to say or agree with your opinion and you may accidently step upon some toes. There should be occasional disclaimers, either in the introduction or program break or perhaps dispersed

between the conversation. That you are not attempting to diagnose a particular condition,as it would be very difficult to do so without seeing the patient. That you are expressing merely your opinion or the opinion of someone you would like to quote as a possible relationship to the problem in a hypothetical sort of way. You may say too, that the condition should be seen by a competent physician and one that understands natural health methods. Don't knock the opposition, but be careful to point our that medicine is geared towards crisis intervention with the use of drugs and surgeries as their main tools, and that -- you deal with preventive health care and the normal health problems. I have sometimes mentioned the fact that using crisis intervention techniques in everyday health problems can create further complications and a possible crisis. It is common knowledge that there is a profound overuse of surgery and drugs in this country.

BROADCASTING

You may wish to drive down to the station do the broadcast in their facilities or you may opt to have a remote broadcast unit and perhaps some equalized telephone lines to broadcast from you office, home or someother location. We have a Norcom Maxi-tel which is an excellent unit. It's a sportscasters unit with many capabilities. We recommend it highly. We have been recently broadcasting from our new lecture chalet, called Sunrise Retreat, which is one of the highest points in the high pines and against the national forest in Prescott, about a

hundred miles north of Prescott. The broadcasts are very clear and it is certainly a pleasure to get out on the deck on a Saturday morning watching the squirrels and the birds and an occasional deer or bald eagles whooping overhead. Of course, this does not compare to barking dogs and Wally's father's lawnmower, which we frequently hear of in George's tapes. You may also pick the best tapes you have from previous programs and if you are going out of town, have the stations replay the tapes.

CONCLUSION

We are currently working on a television show format for a brief program on a weekly basis and feel that the acceptance of chiropractic, nutrition, and natural health care is at a point where several stations that would not otherwise have been interested in the recent past, are now looking at it with a serious note. We have preferred to stay the most part with Christian television and radio because we feel we would like to serve the needs of this particular community first, and tying in health with God's plan for your health in giving the people the superior point of view that God is truly interested in your bodies which is the temple of the Holy Spirit, simply as a different and more meaningful demension to caring for your body than simply wanting to look good. We feel that it is a project which does consume a large portion of your time and

preparation, etc. That one should not undertake unless they have a reasonable expectation of success based upon their motivation, desire, and preparation. However, it has been a real blessing to us to do this. It's our ministry, so to speak, and we feel that although the good Lord can certainly do the job without me, he will use us for constructive purposes. He will certainly improve our own lives immensely if we allow him to do so. One of the main themes of all our programs has been from the scripture, Hosea 5:6 " My people perish from lack of knowledge." And I believe that the healing miracle that many Christians look for is already contained within the potential of this human body,which is the pinnacle of physical creation, as we were created in His image and as George Goodheart so amptly puts: "is merely waiting to be released." However, it turns out, God gets all the glory anyway. In conclusion, should you wish to become involved in this sort of communication, I feel it would be very rewarding and strongly recommend it. If we can be of any assistance, please contact our clinic. We will be most happy to do so.

A GUIDE FOR THE CHIROPRACTOR AND DENTIST IN THE TREATMENT OF TMJ PROBLEMS

By D.H. Duffy, D.C.

A B S T R A C T: TMJ patients should receive TMJ manipulation, cranial, spinal and pelvic manipulation and applied kinesiology techniques prior to the fitting of dental splints due to the gross changes in occlusion produced by these manipulations. Following fitting by the dentist, the patient should wear the splint for approximately one week and receive further treatment by the chiropractor. The TMJ usually checks negative with the splint in place but positive without the splint. Manipulation reverses this condition and the patient is then ready for further splint adjustment by the dentist. The patient does not wear the splint following this manipulation and must be immediately refitted by the dentist. The dental appointment must immediately follow the chiropractic adjustment. Failure of the splint to produce muscle weakness following manipulative efforts is an indicator that the splint is no longer necessary however the symptoms and the dental opinion must concur with this indicator.

The use of "applied kinesiology" techniques[1] discovered by G.J. Goodheart of Detroit, Mich. have produced the most effective (to date) approach available for functional disturbances in the temperomandibular joint. An additional diagnostic approach discovered by this writer also helped to refine the techniques.[2] Most temperomandibular joint problems require corrections for joint dysfunction diagnosed during dental occlusion (clenching the teeth tightly) or wide opening (stretching the fascia and muscles) which require respectively; muscle spindle and golgi tendon organ techniques for overactive muscles, and fascial flushing for fascial/muscular dysfuntion (commonly called rolfing). The nutritional adjuncts used with these corrections are ostogen (a source of raw veal bone) and vitamin B12 which includes liver and stomach fractions along with small amounts of B12.

This article is written to offer an approach to the problem TMJ that requires a combined effort of chiropractic and dentistry and is not meant to instruct the beginner in TMJ problems. For this information the reader is referred to the writings of Goodheart and others in the Collected Papers of the Diplomates of the I.C.A.K.

Dental splints increase the vertical dimensions of the jaw joint which means that they induce a relaxation in the muscles involved in TMJ dynamics. This separation affects the masseter/buccinator (MB) in a manner so as to take the pressure of reactivity (as defined by Goodheart) off the major jaw opener, the external pterygoid (EP) which is struggling against the overdeveloped MB. The overdevelopment probably being due to pressures and stresses of life which in turn produce a total body tension which in turn causes us to chew with overwhelmingly unnecessary force. The imbalance in the MB and EP affect the joint space and symptoms arise which are invariably (in acute cases) accompanied by that pathognomonic indicator of muscle imbalance, the clicking joint. Nocturnal bruxing may play a part in the production of TMJ imbalance. Two little known causes of this are parasite infestations, (worms) and general lymphatic blockages (the former reported by Royal Lee, D.D.S.[3] and the latter recently reported by Goodheart).[4] Lee also reported symptoms attributed to ill fitting dentures some-

times being caused by giardia lamblia infestation which allegedly responded to a product now called Zymex Two produced by Standard Process Labs.[5] of Milwaukee, Wisconsin. Bruxing in children that is caused by worms will also in my experience, be accompanied by restless sleep wherein the child will be found up against the headboard of the bed. This is the result of a vain attempt to get away from the irritability at the anal area and will in itself produce upper cervical and cranial subluxations.

After the dental splint has been in place long enough, the muscles of mastication will have accommodated themselves by physiological elongation and contraction. The determination of the time for the next office visit is based solely on the economics of the patient and the time available to the patient and doctors (practically speaking). At this stage of the process, if the patient is checked by the chiropractor, therapy localization (TL) to the TMJ will be negative with the splint in place and positive without the splint. This also helped to give more insight to this writer as to some of the effects we have been measuring in our muscle testing etc. I.e., joint space proprioception or muscular reactivity which would then lead you to consideration of cranial bone correction or muscular intervention etc. and the various "tricks" of applied kinesiology such as the use of the hyoid movement, respiration, cranial challenges, vertebral challenges and extremity bone challenges especially where acupuncture meridians cross or are anatomically related can be used with great effect. In this regard I would mention in passing that the tarsal bones of the foot[6] have great physiological effects that are measurable clinically, physiologically and symptomatically.

The number of trips to and from the dentists are determined by the chronicity of the problem and the expertise of the doctors. The goal is to find the patient negative to kinesiological testing with or without the appliance in place. This negates the need for further TMJ treatments but may not negate the need for further dentristry and chiropractic treatment. We must not forget that the goal as far as the patient is concerned is relief of pain and discomfort and our very existence as doctors is based on symptomatology. If there are no symptoms there are no patients!!

How do we as chiropractors decide when to send the patient to the dentist? While each of us has a certain level of expertise and the percentages sent to the dentist will naturally vary, I think that in fairness to the patient the criterion should be whenever there is enough imbalance to produce a consistent clicking upon jaw movement which does not respond to four kinesiological treatments, the patient should then be sent to a dental TMJ expert. The D.C. who involves himself in these problems will soon know on the first visit which patients will require dental support. My own experience is such that I almost routinely refer to the dentist, those who show a constant click with wide deviations from the midline on opening and closing. I feel that the patient will save time and money by getting the dentist involved immediately.

The chiropractor is reminded to check the TMJ against aerobic/anaerobic activity also. This is one of the latest of Goodheart's impressive list of discoveries and solved a great deal of clinical problems in patient response. Quite often a TMJ will not show activity with TL and the various approaches including the latest EID technique (eyes into the distortion) until the jaw is put into action opening and closing a minimum of twenty times. This shows the need for iron and/or pantothenic acid.*

To summarize the approach recommended, in the beginning we have to determine if dental support is necessary and if so we make as effective a correction as possible prior to sending the patient to the dentist remembering that the chiropractor makes large immediate corrections and the dentist is the fine tuner who uses the appliance to help hold the correction until the muscles can equilibrate themselves physiologically. The D.C. then later (usually a week) rechecks the patient who is negative with the appliance in place and positive without it. The D.C. makes a correction and the important point here is to remember that the appliance now is not good for the patient-if a proper correction has been made the appliance will check negatively, i.e., make a muscle weak on jaw closure. This insures that further reduction in muscular imbalance has been made and the patient should go immediately to the dentist to have the appliance refit. Any delay in refitting by the dentist will allow a loss of correction due to residual weakness and spasticity in the muscles. The responses to proper TMJ manipulation are immediate and very gratifying to both doctor and patient. Low back pain, head and neck pain and extremity pain are often reduced or eliminated immediately without the use of harmful analgesics. The TMJ is truly a "master joint" of the body and is intricately involved in joint proprioception with all of the other joints. The chiropractic/dental team approach is a must for many of the common complaints seen in a general practice of not only chiropractic and dentistry but medicine as well. The sooner the medical practicioner realizes this the sooner he or she will be able to share in these clinical delights.

REFERENCES

1. GOODHEART, G.J., D.C., Applied Kinesiology Research Manual 1976. Privately published Detroit, Mich.
2. DUFFY, D.H., D.C.,Cranial Masking of Temperomandibular Joint Dysfunction, summer meeting of the I.C.A.K. Collected Papers of the Members of the I.C.A.K.
3. LEE, R., D.D.S., Applied Trophology 1957. Standard Process Labs, Milwaukee, Wisc.
4. GOODHEART, G.J. D.C., personal communication.
5. STANDARD PROCESS LABS, product information.
6. STRAUS, S., M.B.B.S., Acupuncture Inhibition of a Lasix-Induced Diuresis: A Somato-Visceral Reflex., *Am. J. of Acupuncture*, Vol 9, No. 2, April-June 1981.

* plus neurolymphatic treatment etc.

MUSCLE LAG TIME AS A CLINICAL INDICATOR OF PHOSPHORUS DEFICIENCY

By Daniel H. Duffy, D.C.

A B S T R A C T: Seven of eleven patients who showed a lag in muscle activation during hamstring testing while in the prone position responded to the administration orally of phosphorus in the form of Phosfood*.

During the practice of Chiropractic when using the muscle test as a diagnostic indicator one often sees the patient who seems to lag behind the testors pull. I.e., while testing the hamstrings the leg will move several inches before "locking". This is confusing and makes already difficult problems even more difficult to differentiate. While there are many reasons for this lag in response such as patient inattentiveness, hemispheric dominance problems (switching phenomenon) etc., there also appears to be a nutritional deficiency of phosphorus involved.

While testing a patient who showed this effect of muscle lag and who appeared to be otherwise mentally alert, I intuitively selected some phosfood to check for its effect on the situation. The response was immediate and profound on this patient who I knew consumed large quantities of white bread.(which led to the selection of the phosfood) I suspected that this was simply a lucky guess but decided to check the effect on other patients. Seven out of eleven responded in the same manner. This seems to be a high percentage however the current environmental conditions of the average patient will certainly act to produce a phosphorus deficiency in a high percentage.

Among the most common displacers of phosphorus that would affect patients would be lead from the usual sources such as auto fumes and aluminum from antiperspirants and deodorants etc. Both lead and aluminum will lock up the phosphorus and/or pull it off the phospholipids. Five of the seven positive tests showed positive testing to their own blood. I.e., tasting a drop of their own blood produced muscle weakness. All of the five thus produced responded to the simultaneous administration of vitamin C and trace minerals and two showed response to antronex*. The nerve sheath damage that results from lead and aluminum poisoning is also well documented. In the event the patient shows muscle lag time that responds to phosphorus they should be checked for the use of harmful items that would produce the shortages and counselled about the use of refined carbohydrates that have the element removed. Dipotassium creatine hexose phosphate is a cellular substance that will be interfered with which will in turn produce poor muscle response in terms of function, testing, and use. These patients will particularly complain of stiffness especially in the morning and may have nausea and vomiting, cramping, they will have insomnia and do a lot of coughing and drooling at night, (the pillow will smell of saliva), They suffer from excessive secretions which are thin and watery from the eyes and nose and often suffer an acid rebound after eating. Muscle and joint stiffness predominate and are in the main caused by a cooked refined food diet. (phosphatase is found only in raw food)

The most serious problem would probably be the rapid blood clotting time of these patients. Phosphorus can be considered a stimulant to the autonomic nervous system and the glandular system. It helps to neutralize alkalosis, dissolves calcium bicarbonate deposits in the soft tissues and in the kidneys in the case of kidney stones, lowers the viscosity of the blood, balances calcium, (e.g., in excess calcium it is wiser to administer phosphorus than to eliminate calcium in the diet) and is a remedy for excess hydrochloric acid flow in the stomach. I often relieve nausea immediately by administering thirty drops of phosfood in a glass of water, which is an excellent clinical indicator of the cause of the nausea. Many of these patients will present with chest symptoms due to gastric upset and many show an immediate response on the endocardiograph with improved heart function.

The phosphorus deficient patient will be helped by good sources of phosphorus as is found in phosphood or lecithin and are also benefitted by ostogen*as a source of phosphatase especially those who are on the cooked food diets so prevalent today.

In summary; those patients who show a lag in muscle response time during testing may be deficient in phosphorus and may benefit from an increase in raw food and a restriction in the exposure to lead and aluminum from usual sources.

*Trade names used by Standard Process Labs of Milwaukee, Wisc.

REFERENCES

1. LEE, R., D.D.S., Applied Trophology 1957 through 1959. Milwaukee, Wisc.

CROSS CRAWL ACTIVITY AND HANDEDNESS[1]

By Daniel H. Duffy, D.C.

A B S T R A C T: Of fourteen right handers, eight required left cross crawl activity-six required right hand activity. Of four left handers, one required right hand cross crawl activity-three required left hand activity. Of two ambidextrous patients, both required right hand cross crawl activity. One industrial accident case relapsed into a full blown pseudodisc like antalgia when using incorrect crawl activity. Seventy five repetitions of correct activity brought him back to the erect position on the plumb line.

The routine use of cross crawl activity[2] by determining the activity from the dominant hand of the patient can range from unobservable to disastrous effects on the patient. Although the effects may not be observed by the doctor by muscle testing etc. improper activity could greatly affect fine tuning control necessary for some highly skilled sports or job requirements.

The importance of proper crawl activity was noted by this writer on an industrial case who initially presented in a severe antalgia reminiscent of disc prolapse or herniation. Swelling of the disc and subsequently the severe antalgia and pain etc., yielded to proper correction of ileocecal valve dysfunction and minor subsequent manipulative efforts. The patient left for a short vacation and upon return lapsed into incorrect cross crawl activity. When next seen he commented that he was unable to do more than ten repetitions without "tightening up" and he was back in the severe antalgia. Upon checking his performance of the cross crawl activity it was noted that he was using improper head turning. Seventy five repetitions of proper head turning returned the patient to erect posture. While this case represents the extreme and would not be often seen it points out the powerful effect that this seemingly innocuous activity has upon the central nervous system.

Breathing in conjunction with moving also has a profound effect upon normalization of neuromuscular mechanics.[3] Posterior and anterior total pelvic movement coincident with, respectively, inhalation and exhalation often removes low back pain following coitus. This principle can occasionally be used by any joint in trouble. Simply test a muscle crossing the joint and use a trial and error method to determine breathing and limb movement in the difficult case that fails to yield to usual efforts. This can be used in the head and neck, shoulder, elbow, etc.

BIBLIOGRAPHY

1. Delacato, Carl H. "The Diagnosis and Treatment of Speech and Reading Problems." 1963, C.C. Thomas Pub., Springfield, Ill.
2. Goodheart, George J. "Applied Kinesiology Research Manual" privately published. Detroit, Mich.
3. Ibid.

THE NULL HYPOTHESIS

Joseph S. Ellison, D.D.S.

INTRODUCTION

On the introduction of any new mode of therapy the practioner or investigator must make a decision as to the validity of that new modality. The usual method is to make an inference about the entire population on the basis of a randomized sample of that population. The particular population characteristic under study or investigation is called the parameter. The decision or inference made about the given population is called the statisical decision. In attempting to reach the statistical decision the investigator often attempts to make assumptions or guesses about the population involved. These assumptions which may or may not be true are called statistical hypotheses. In the course of the investigation, the investigator submits these hypotheses to universally agreed upon rules or tests and then either rejects or accepts the statements concerning the population parameters. Often the investigator will state a hypothesis about a given population that he believes is false and then trys to disprove it. This is called the null hypothesis. In stating the null hypothesis the investigator makes a statement that is in opposition to what he seeks to prove. An investigator might therefore state the hypothesis: "Temporal tapping does not abolish the gag reflex". Research is carried out; if the findings disprove the above null hypothesis, the null hypothesis is rejected and the alternate hypothesis "Temporal tapping does abolish the gag reflex" is accepted.

This paper discusses the important statisical method of hypothesis testing and is subdivided as follows:

I. Measures of Central Tendency
   - A. The Mode
   - B. The Median
   - C. The Mean

II. The Standard Deviation

III. The Normal Distribution

IV. The Null Hypothesis
   - A. Type I and Type II Errors
   - B. Levels of Significance
   - C. The t-Test

DISCUSSION

I. Measures of Central Tendency

A. The Mode

The mode is defined as the particular observation within the sample that occurs most frequently. If more than one observation occurs more frequently than the others, the mode is termed multimodal. The mode is a good method of making a quick assessment of the data, but if the frequency distribution of the data is non-symmetrical its value or accuracy tends to diminish. For an example of the mode, suppose data was collected from a population consisting of 42 subjects requiring adjustment of the cervical vertebrae as follows:

C_1 - 7 subjects
C_2 - 6 subjects
C_3 - 5 subjects
C_4 - 3 subjects
C_5 - 12 subjects
C_6 - 5 subjects
C_7 - 4 subjects

Total - 42 subjects

The data places C_5 as the mode since C_5 was the vertebra that was most frequently adjusted.

B. The Median

The median is defined as the middle observation of data ranked from smallest to largest or vice-versa. If the ranked data is even

in distribution, the median will occur halfway between the two middle observations. Taking the previously accumulated data and ranking it from the smallest to largest gives the following result:

C_4 - 3 subjects

C_7 - 4 subjects

C_3 - 5 subjects

C_6 - 5 subjects

C_7 - 6 subjects

C_1 - 7 subjects

C_5 - 12 subjects

Either C_3 or C_6 occurs as the median since five observations fall midway in the sample. The median can provide for a useful description of the data and is relatively unaffected by extremes at either end.

C. The Mean.

The mean is defined as the sum of all the values of the data divided by the number of observations, where:

$\bar{X}$ = mean

$\sum$ = the sum of

n = number of findings or values in the data

In our previous sample:

$$\bar{X} = \frac{C_1 + C_2 \cdots C_n}{n} = \frac{7 + 6 + 5 + 3 + 12 + 5 + 4}{7} = 6$$

A disadvantage of the mean is that the mean can be more sensitive to extreme values than either the median or the mode. An advan-

tage, however, is that it is more easily worked into various statistical tests and is used quite frequently in statistical computation.

II. The Standard Deviation

Suppose that two groups of 420 patients were observed and the following results were obtained:

Group I	Group II
C_1 - 56	C_1 - 30
C_2 - 58	C_2 - 35
C_3 - 60	C_3 - 60
C_4 - 60	C_4 - 60
C_5 - 60	C_5 - 60
C_6 - 62	C_6 - 85
C_7 - 64	C_7 - 90

Computations disclose that both populations have the same mean (60), median (60), and mode (60) yet groups I and II are far from identical. Group I tends to be homogeneous while Group II shows a much greater dispersion. This comparative sample shows the great need to analyze the data and determine the amount of variability or dispersion of the sample population.

One method of analyzing the dispersion is through the average deviation from the mean. The average deviation is easily computed by subtracting each observation from the mean of the ob-

servations and dividing by the number of observations or:

$$\text{average deviation} = \frac{(x_1 - \bar{x}) + (x_2 - \bar{x}) \ldots\ldots (x_n - \bar{x})}{n}$$

In order to compute the absolute deviation all negative figures are connected to positive ones. Thus for Group I:

$$\text{average deviation} = \frac{4 + 2 + 0 + 0 + 0 + 2 + 4}{7} = 1.71$$

and for Group II:

$$\text{average deviation} = \frac{30 + 25 + 0 + 0 + 0 + 25 + 30}{7} = 15.71$$

It is therefore evident that the sample represented by Group II has a wide dispersion as compared to Group I and therefore the groups cannot be identical.

In order to obtain a meaningful result for the average deviation all negative numbers had to be expressed as positive integers. One way to compensate for this difficulty is to square $(x - \bar{x})$. If the sum of the quantity $(x - \bar{x})^2$ is divided by n - 1, and the square root of the resultant determined we have the standard deviation (s). Therefore $s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$

For Group I

$$s = \sqrt{\frac{16 + 4 + 0 + 0 + 0 + 4 + 16}{6}} = 2.58$$

For Group II

$$s = \sqrt{\frac{900 + 625 + 0 + 0 + 0 + 625 + 900}{6}} = 22.55$$

III. The Normal Distribution

Suppose you measured the difference in leg length of a series of patients having a category II pelvic fault involving the posterior ilium. Your resulting measurements would be an infinite number of different values within a range of possible values. Infinite variables such as the above are termed continuous random variables. In contrast, variables where there are discrete values of n such as the number of 24 year old males in Podunk Junction having a category II fault are termed discrete variables. If several measurements are taken of any continuous random variable such as the heights of 24 year old males in Podunk Junction, and plotted as a graph, it is most likely that the resultant graph would resemble the normal bell shaped curve with a peak at its center and the tails very close to the horizontal axis stretching out to infinity in both directions (figure 1). Since curves drawn from continuous random variables tend to be similar, statisticians have described a representative curve as a Standard Normal Curve, defined as the resultant of the distribution of a normal random variable with a mean equal to 0 and a standard deviation of 1. The letter z is used to represent any number comprising the normal random variable.

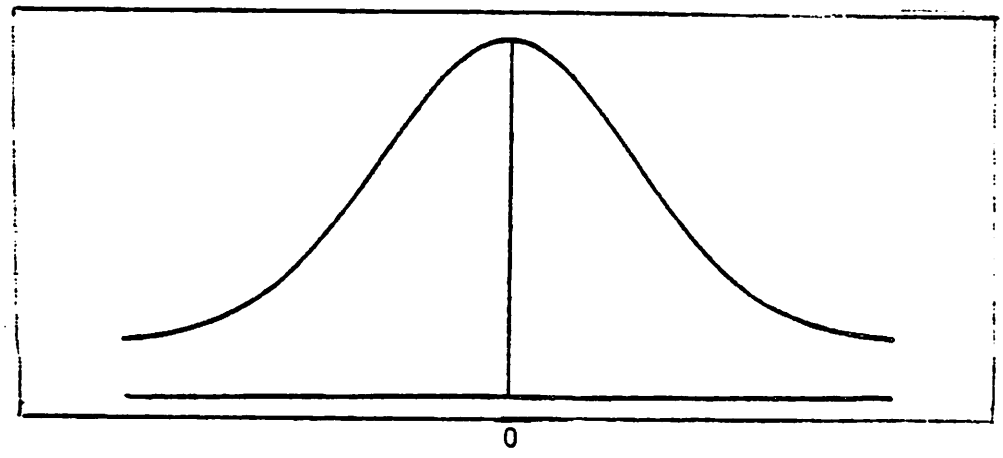


Figure 1.

8.

The standard normal curve enables the investigator to take any array of any specific continuous random variable and analyze it as it relates to the normal distribution for a given population. For example, given the normal distribution and given the value of z as shown in figure II, the area under the normal curve covered by the given variable z is shown by the darkened area above z which represents the area from 0 - z since the vertical line represents 0 the mean of the normal standard curve. Likewise figure III represents the area from 0 to another given value of z.

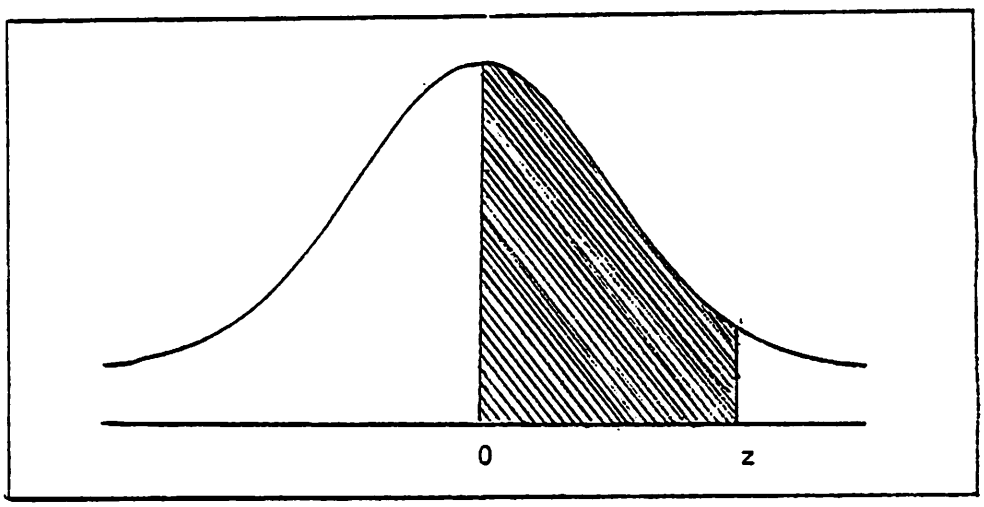


Figure II.

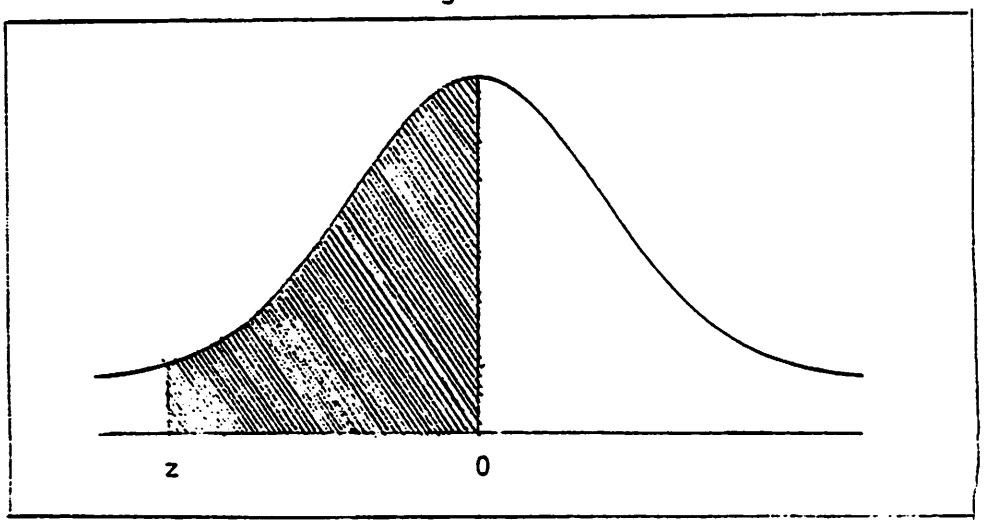


Figure III.

The standard normal table is used to compute or determine the area under the standard normal curve for a given value. For example if the variable z in figure II had a given value of 1.93, the standard normal table would show the shaded area equal to 0.47320 (table 1).

z	A (z)
1.50	.43319
1.51	.43448
.	.
.	.
.	.
1.92	.47255
1.93	.47320

Table 1

Likewise the area from z = 1.8 to z = 2.8 is equal to 0.03337(figure IV and table 2).

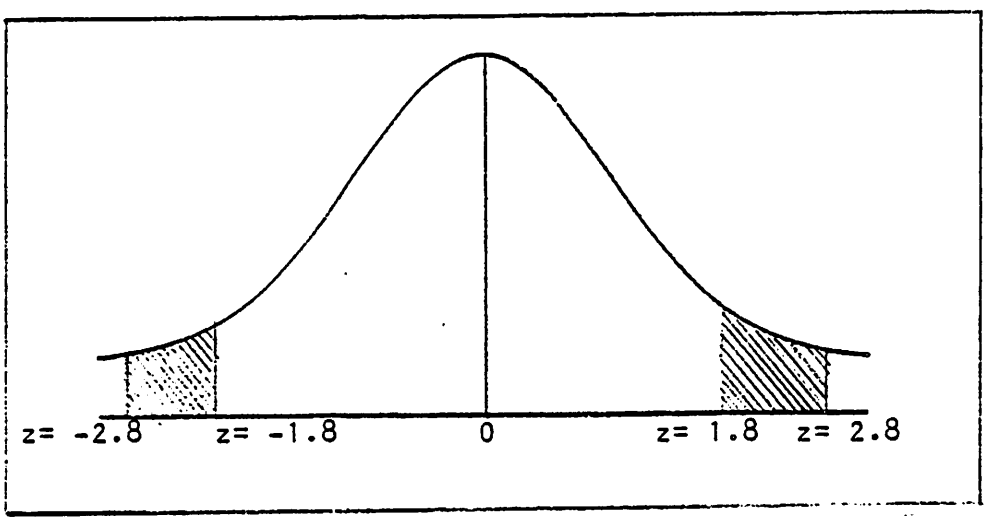


Figure IV.

z	A (z)
1.8	.46407
.	.
.	.
2.8	.49744

area z= 2.8 = .49744
-area z= 1.8 = .46407
.03337

The next section will illustrate how the standard normal curve is used to test a statistical inference made about any given test population.

IV. The Null Hypothesis

A. Type I and Type II Errors

When we state the null hypothesis, designated as H_o, there are two possibilities:

1. H_o is true or,
2. H_o is false

Type I error:

If H_o is true and we accept it, we have made a correct decision. If H_o is true and we have rejected it, we have made a rejection error. This is termed a Type I error.

Type II error:

If H_o is false and we reject it, we have made a correct decision. If H_o is false and we have accepted it we have an acceptance error. This is termed a Type II error.

In establishing a hypothesis the investigator must always weigh the possibility of committing either a Type I or Type II error for these two possibilities are always in conflict. If the investigator decreases the possibility of making one type of error, he increases the probability of making the other. If for example, as a chiropractor, we wanted to prove that chiropractic is better than Robaxin for low back pain we would state our null hypothesis as:

H_o: Chiropractic $<$ Robaxin for low back pain

and the alternate hypothesis as:

H_a: Chiropractic $\geq$ Robaxin for low back pain.

Our null hypothesis states that chiropractic is not as good as Robaxin for low back pain. If the data from our research does not support the above finding, we will be forced to conclude that there is a high probability that H_o is incorrect and that we therefore must accept the alternate hypothesis, H_a, that chiropractic is at least equal to or better than Robaxin for low back pain. Since the chiropractor is naturally interested in proving chiropractic is better, he would choose criteria to obtain as many rejections as possible or be more willing to accept a Type I error; since he would prefer to reject the null hypothesis. On the other hand if A. H. Robins, the manufacturer of Robaxin, were performing the same research, they would be more willing to make a Type II error since they would prefer to have as many acceptances as possible. If the entire population is examined, Type I and Type II errors will not occur; it therefore follows that sample size helps determine the probability of a Type I or Type II error occuring. The level of significance as determined by the investigator will to a great extent determine the possible type of error the investigator is willing to accept.

B. Level of Significance

In designing the experiment, the investigator determines the probability with which he would be willing to risk a Type I error. The usual specified levels of significance are 0.05 and 0.01. In

the first instance chances are 5 in 100 that he would reject the hypothesis when it should be accepted. In the second instance (0.01) he would be 99% confident that he made the correct decision. Therefore by accepting a 0.05 level of significance the investigator is more willing to accept a Type II error as compared to the 0.01 level of significance. Once the level of significance is determined the standard normal curve can be used to determine if any given value z statistically supports or rejects the hypothesis. If $z = \pm 1.96$, the area between $\pm z = 1.96$ is equal to 0.95 (figure V and table 3) with the area to the right of $+z = 0.025$ and the area to the left of $-z = 0.025$.

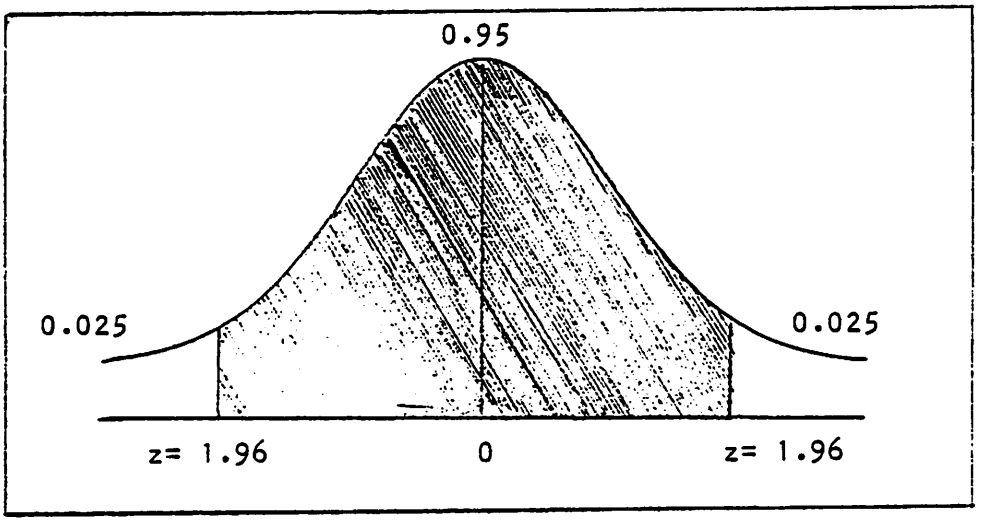


Figure V.

z	A (z)
.	.
.	.
.	.
.	.
1.96	.475
.	.
.	.
.	.
.	.

$0 - z = 1.96 \quad .475$

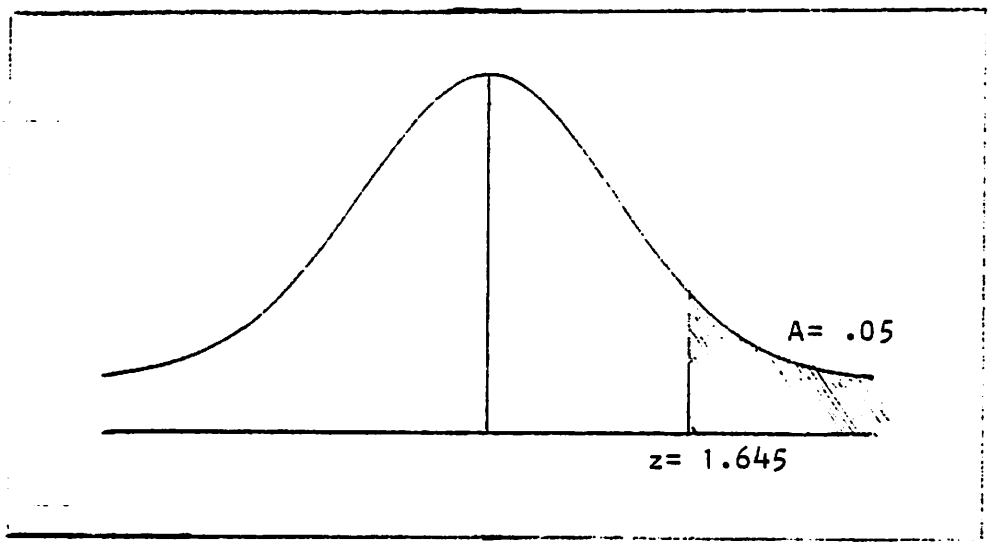
$0 - z = 1.96 \quad .475$

$.950$

Table 3

13.

The two areas (0.025) comprising 5% of the total area are called the critical regions or rejection regions. If the computations therefore shows z to be greater, then ±0.025 the value will fall within the critical region. This means that we can reject the null hypothesis at the 5% level and accept the alternate hypothesis. Since we are using both ends of a standardized curve this is termed a two-tailed test. The two-tailed test is often used to determine if one process is better or worse than another. If, however, one is only interested in finding if one process is better than another he could use a one-tailed test (figure VI and table 4).



z	A (z)
1.645	.050

Table 4

Figure VI.

In this case if z = 1.645, 95% of the area lies to the left of z. Therefore if any given value of +z ≥ 1.645 it will lie within the critical region at the 5% level of significance and we can reject the null hypothesis and accept the alternate hypothesis which is the one we were trying to prove.

C. The t-distribution and its use in hypothesis testing.

Using and determining values of z for a given population requires that the investigator know the standard deviation for the population from which the sample was drawn. Since this is seldom known, one way the investigator can get around this is by using the t-distribution. The curve for the t-distribution is similar to that of the z curve except that the t-distribution tends to be more dispersed (figure VII).

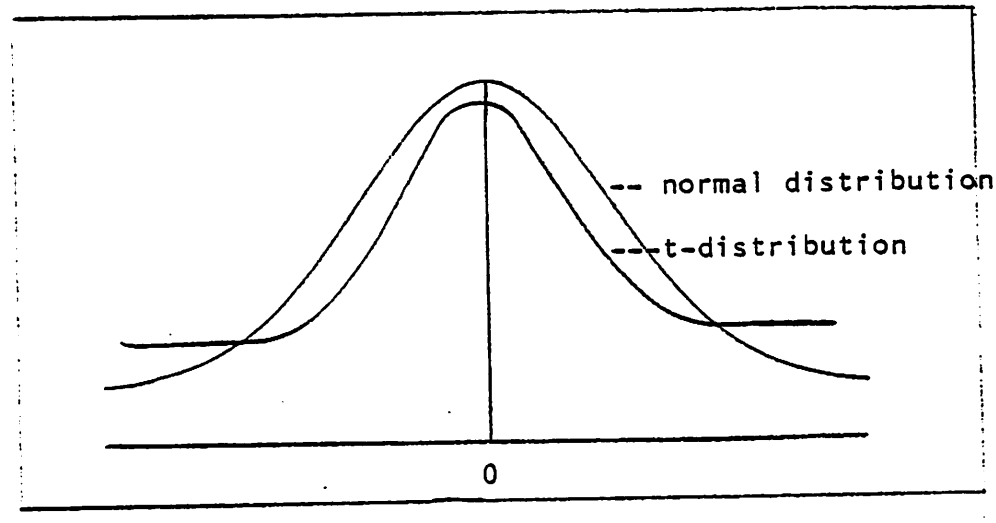


Figure VII.

As the sample size increases, however, the t curve more closely resembles the standard curve and at infinite number of samples the t-distribution equals the normal population. The number of observations comprising the sample is indicated as the degrees of freedom (df) which is equal to n-1. A population sample of 25 observations would therefore have 24 degrees of freedom. Where n is equal to 30 or above that distribution is considered to very closely parallel the standard curve and gives similiar

results. The t-test is often used for hypothesis testing as follows:

1. To decide if a population mean differs from a constant.
2. The paired t-test to determine if the mean difference between two measurements on the same subject differ from each other.
3. The unpaired t-test to determine if the means of two populations differ from each other.

1. The use of the t-test to determine if a population mean differs from a constant.

   Ex: The investigator wants to know if the mean systolic pressure of inmates in Rahway State Prison is greater than 120 mm of H_g.

   a. Establish the null hypothesis.

      (The mean systolic pressure of inmates in Rahway is equal to or less than 120 mm H_g)

      $$H_o \leq 120 \text{ mm } H_g$$

   b. Establish the alternate hypothesis.

      $$H_a > 120 \text{ mm } H_g$$

   c. Determine the level of significance.

   d. Calculate the mean of the measured systolic blood pressure of the sample population.

      $$\bar{x} = \frac{\sum x}{N}$$

   e. Determine the standard deviation (s) from the mean.

      $$s = \sqrt{\frac{\sum (x - \bar{x})^2}{N-1}}$$

f. Compute the standard error of the mean $\left[SE = (S/\sqrt{n})\right]$ where S equals the standard deviation and n equals the number of measurements in the samples.

g. Compute the value of t

$$t = \frac{\bar{x} - K}{SE}$$

where K equals the constant which the population is being compared to, which in this case is 120 mm H_g.

h. Calculate the degrees of freedom which is equal to n-1.

i. Using the values for t and df use a t-distribution table to look up a P-value (table 5).

df	Level of Significance				
	.10	.05	.025	.01	.005
1	3.078	6.314	12.706	31.821	63.657
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
16	1.337	1.746	2.210	2.543	2.921
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
120	1.289	1.658	1.980	2.358	2.617
∞	1.282	1.645	1.960	2.326	2.576

EX:

1. at 16 degrees of freedom at a .025 level of significance P = 2.210
2. at infinite degrees of freedom at .01 level of significance P = 2.326

Table 5

j. If the value of P exceeds the value for t for the given level of significance and therefore lies within the critical or rejection area reject the null hypothesis and accept the alternate hypothesis as being significant within the specified level of probability.

2. The paired t-test to determine if the mean difference between the measurements on the same subject differ from each other.

Ex: The investigator wants to determine if the tensile strength of the wound in guinea pigs is different at a daily dose of 0 mg of vitamin C taken daily as compared to the tensile strength when the intake is 2 mg daily.

a. Establish the null hypothesis:

H_o: The average difference between tensile strength measured at 0 mg of vitamin C and 2 mg vitamin C is equal to 0.

b. State the alternate hypothesis.

H_a: The average difference $\neq 0$

c. State the level of significance.

d. Pair the measurements taken for the two parameters and take the difference between the two measurements(d) (table 6).

Paired Differences in Tensile Strength

Guinea pig	0mg Ascorbic Acid	2 mg Ascorbic Acid	d
1	25	35	10
2	27	32	5
3	20	32	12
4	29	37	8
5	27	35	8

Table 6

e. Calculate the mean of the difference ($\bar{d}$)

$$\bar{d} = \frac{d}{n}$$

f. Calculate the standard deviation of the difference

$$S_d = \sqrt{\frac{\sum (d - \bar{d})^2}{n-1}}$$

g. Calculate the standard error of the mean difference

$$SE = S_d / \sqrt{n}$$

h. Compute the value for t where $t = \frac{\bar{d} - K}{SE}$ and $\bar{d}$ is equal to the mean of the differences. K is equal to 0 because the hypothesis is testing whether the mean difference is different from 0 and SE is equal to the standard error of the mean.

i. Calculate the degrees of freedom.

j. Using the values for t and df use a t-distribution table to look up a P - value.

k. If the P-value lies within the critical zone reject the null hypothesis.

3. The Unpaired t-test

Ex: The investigator wants to determine if the blood pressure in Group 1 on a high salt diet differs from Group 2 on a low salt diet.

a. State the null hypothesis:

There is no difference between Group 1 on a

high salt diet and Group 2 on a low salt diet

$$H_o: (\bar{x}_1 - \bar{x}_2) = 0$$

b. State the alternate hypothesis:

$$H_a: (\bar{x}_1 - \bar{x}_2) \neq 0$$

c. Determine the level of significance.

d. Calculate the mean of measurements for each group.

Group 1 = $\bar{x}_1$ $\qquad \bar{x}_1 = \dfrac{\sum x_1}{n}$

Group 2 = $\bar{x}_2$ $\qquad \bar{x}_2 = \dfrac{\sum x_2}{n}$

e. Calculate the variance S^2 for each group where variance for Group 1 is

$$(S_1)^2 = \frac{\sum (x_1 - \bar{x}_1)^2}{n_1 - 1}$$

and variance for Group 2 is

$$(S_2)^2 = \frac{\sum (x_2 - \bar{x}_2)^2}{n_2 - 1}$$

f. Calculate the pooled variance S_p^2 as a weighted average of the two individual variances

$$S_p^2 = \frac{(n_1 - 1)\, S_1^2 + (n_2 - 1)\, S_2^2}{n_1 + n_2 - 2}$$

where n_1 = number of measurements in sample 1

where S_1^2 = variance of S_1

and likewise for n_2, S_2

g. Use the pooled variance (S_p^2) to compute the standard error $S(\bar{x}_1 - \bar{x}_2)$ = of the difference between the 2 means

$$S(\bar{x}_1 - \bar{x}_2) = \sqrt{S_p^2 / n_1 + S_p^2 / n_2}$$

h. Compute the value for t:

$$t = \frac{(\bar{x}_1 - \bar{x}_2) - 0}{S(\bar{x}_1 - \bar{x}_2)}$$

where $\bar{x}_1$ = the mean difference of Group 1

$\bar{x}_2$ = the mean difference of Group 2

K = the constant is = to 0 as set up in the hypothesis

$S(\bar{x}_1 - \bar{x}_2)$ = standard error of the difference

i. Calculate the degrees of freedom.

$$df = n_1 + n_2 - 2$$

j. Use t and df to look up P.

k. Accept or reject the null hypothesis.

Conclusion

The null hypothesis is used to test whether an inference about a group is likely to be true. Rejecting the null hypothesis does not absolutely prove that the statistical sample comes from a population other than the known population. It only proves that it is highly unlikely that the null statement made about the population was correct. Even though hypothesis testing is subject to both Type I and Type II errors, when properly used it can be a valuable method for reaching a conclusion

about a population when there are fewer than three groups.

REFERENCES

1) Croxton, Frederick E., Elementary Statistics with Applications in Medicine and the Biological Sciences, 1953, Dover Publication, Inc., New York.

2) Schmidt, Marty J., Understanding and Using Statistics: Basic Concepts, 1979, D. C. Heath and Co., Lexington, Mass.

3) Khazanie, Ramakant, Elementary Statistics in a World of Applications, 1979, Goodyear Publishing Co., Santa Monica, California.

4) Weinberg, R., and Cheuk, S. L., Introduction to Dental Statistics, 1980, Noyes Medical Publications, Park Ridge, New Jersey.

5) Hayslett, H. T., Statistics Made Simple, 1968, Doubleday & Co., Garden City, New York.

6) Spiegel, Murray R., Theory and Problems of Probability and Statistics, 1975, McGraw-Hill Book Co., New York.

Joseph S. Ellison, D.D.S.

THE OCCLUSAL BITE GUARD AND TREATMENT OF THE TEMPEROMANDIBULAR JOINT

The vital significance of the proper functioning of the temperomandibular apparatus has been aptly described and demonstrated by Dr. George Goodheart. He demonstrated that because of the Humunculus, as described by Penfeld and Rasmussen, a properly functioning temperomandibular joint could be a vital adjunct to Chiropractic. One acceptable mode of therapy is the construction of a dental bite guard. The purpose of this paper is to describe the bite appliance as developed by the dental profession.

The use of the bite plate goes back at least as early as 1771 when John Hunter described an appliance to be worn over the lower teeth to correct an orthodontic deformity.[1] Subsequent to this, bite plates of many types have been constructed as either an adjunct to or the primary agent for orthodontic therapy.[2,3] Berliner in 1964 helped to popularize the use of bite guards for periodontal therapy.[4] Its use in periodontal therapy was further enhanced by its proven ability to help correct the habit of and damages resulting from bruxism.[5,6] It has also been shown that a splint can be used to correct osseous deformities such as bony craters, occuring as a result of periodontal disease.[7] To summarize; the bite guard has historically been used in dentistry for the following reasons:[8]

1. To take mobile teeth that are in trauma out of trauma by disarticulating them and putting them at rest. This hopefully will decrease the attendant mobility, prevent further damage and allow for healing.
2. To allow orthodontic movement of teeth without interference from the inclined planes of opposing teeth.
3. To eliminate the superimposed occlusal trauma that may be caused by the parafunctional habits that can develop and/or be accentuated by the prematurities that occur during orthodontic tooth movement.

4. To allow for extrusion of teeth with periodontal osseous deformities, such as craters in the bone, and the attendant coronal movement of the alveolar bone. This may have a tendency to shallow out the osseous lesions and therefore make them better.

A natural outgrowth of the use of bite plates as outlined above, was the realization that they could be a primary therapeutic modality for the treatment of temperomandibular joint disturbances.[9,10,11,12,13]

The developement of the bite guard for temperomandibular joint therapy has taken many paths and many different types of bite guards have been developed. Some of the common bite guards include the following:

A. Bite guards developed for use on either upper or lower teeth.
   1. Hard or soft acrylic overlay - placed over the maxillary or mandibular teeth to cushion the pressures of occlusion.

B. Bite guards developed for use on the upper teeth.
   1. The Hawley bite plate - the most popular, plastic is adapted to the palate and a labial arch wire placed over the anterior teeth.
   2. The Activator - developed in Britain, recently becoming more popular in the United States. Hard rubber is adapted to the palate and teeth allowed to move through functional forces.
   3. The Univator - A recent improvement of the Activator.
   4. The Sved appliance - placed on the palate with only the lower anterior teeth allowed to contact.
   5. Split plate appliance - widens the palate or narrows the upper posterior teeth.
   6. Schwartz appliance - placed over maxillary teeth in contact with all mandibular teeth. The appliance is gradually adjusted to harmonize the maxillo-mandibular relationship.

C. Bite guards developed for use on the lower teeth.
   1. The Gelb appliance - fits over the mandibular teeth and positions the mandible into a pre-determined relationship with the maxilla.

2. The Willie B. May appliance - placed over the mandibular teeth and used to establish the proper pivotal point of the mandible as determined by applied kinesiolgy. The acrylic is adjusted until there is only one contact point on each side to which the patient will test strong kinesiologically.

Conclusion

Bite guards were originally developed for use in orthodontics and later modified for periodontal and temperomandibular therapy. Because of the limited indications for bite guards, many dentists are not totally familiar with their usage and construction. This may present difficulty for a chiropracter who wants to use bite guard therapy as an adjunct to chiropractic. This paper made no attempt to compare various bite guards. It is the authors current opinion,however, that the concept developed by Dr. May is the concept of choice. His concept allows the mandible total freedom to rotate in three dimensional space according to the bodies own wisdom. This seems to closely adhere to the healing philosophy of chiropractic.

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1. Weinberger, B.W.: Orthdontics, an Historical Review of its Origin and Evolution, Vol.I, The C.V. Mosby Co., St. Louis, 1926.
2. ibid.
3. Kingsley, N.W.: Adenoid growths, mouth breathing and thumb sucking in relation to deformities of the jaws and irregular teeth, Dent. Cosmos, 34:360, 1892.
4. Berliner, A.: Ligatures, Splints, Biteplates and Pyramids, J. B. Lippincott Co., Philadelphia, 1964.
5. Posselt, V., and Wolff, I.B.: Treatment of bruxism by bite guards and bite plates, J. Ca. Dent. Assoc.,29:773,1963.
6. Solberg, W.K.,Clark, G.T., and Pugh, J.D.: Nocturnal electromyographic evaluation of bruxism patients undergoing short term splint therapy, J. Oral Rehab., 2:215, 1975.
7. Gratzinger, M.: The use of removeable orthodontic plate appliances in the management of chronic periodontal disease.,Dent. Clin. North Am., July 1959.
8. Kessler, Matthew.: The bite plate - an adjunct in periodontic and orthodontic therapy.,Jnl. of Periodontol., 51:3, 1980.
9. Ramfjord, S.P., Ash, M.M., Occlusion, W.B. Saunders Co., 1971.
10. Sarnat, Bernard G.: The Temperomandibular Joint, Charles C. Thomas Co., Illinois, 1964.
11. Shore, Nathan Allen.: Temperomandibular Joint Dysfunction and Occlusal Equilibration., J.B. Lippincott Co., Philadelphia, 1976.
12. Morgan, D.H., Hall, W.P., and Vamvas, S.J., Diseases of the Temperomandibular Apparatus. A Multidisciplinary Approach.,C.V. Mosby Co., St. Louis, 1977.
13. Gelb, H.: Clinical Management of Head, Neck and TMJ Pain and Dysfunction, W.B. Saunders Co., Philadelphia, 1977.

A LEFT BRAIN VIEW OF COLLECTED PAPERS OF THE MEMBERS OF THE INTERNATIONAL ACADEMY OF APPLIED KINESIOLOGY 1980 (SUMMER MEETING)

The Collected Papers of the Members of the International Academy of Applied Kinesiology has provided valuable input to the dissemination and quantification of knowledge of Applied Kinesiology. Since Applied Kinesiology holds great promise for mankind and has applications in all health professions, this paper makes an attempt to determine how well the Collected Papers might communicate with medical and allied health professionals.

According to Ornstein; the left brain may be determined to be predominately analytic and sequential in operation while the right brain is more holistic, relational and simultaneous in its mode of operation.[1] Traditional medicine tends to base its therapeutic approach on the mathematics of statistics and analysis by way of the scientific method. This analytic approach biases medicine towards the use of the left brain. Applied Kinesiology is holistic, relational and simultaneous in its approach and is therefore biased towards the right brain. Medicine makes great use of the clinical trial which may be defined as follows: "A carefully designed experiment with the aim of answering some precisely framed question. In its most rigorous form it demands equivalent groups of patients concurrently treated in different ways. These groups are constructed by the random allocation of patients to one or other treatment; such an allocation may be sometimes preferably be made within more but smaller homogeneous subgroups composing the total groups. Sometimes carefully matched pairs of patients may provide the contrast. In some instances patients may form their own controls, different treatments being applied to them in random order and the effects compared. In principle the method is applicable with any disease and any treatment...."[2]

Using criteria similar to the above, Ross in 1951 published an analysis of 100 randomly selected articles between January and June 1950 from: JAMA, American Journal of Medicine, Annals of Internal Medicine, Archives of Neurology and Psychiatry and American Journal of Medical Science. Ross found that 37% met the criteria. In 1960 Badgley examined 103 articles in two Canadian journals and found that 42% met the criteria. Gore, et. al. analyzed papers published in the British Medical Journal during three months in 1976. They found that 58% of the papers met the above criteria. In 1964 Schor and Karaten published a detailed analysis of the use of sttistical methods in 295 papers from 10 leading medical journals. Fifty three percent were totally acceptable.[3.] From the above analysis, it can be concluded that approximately 50% of the articles in leading medical journals reach a very high level of scientific acceptance.

Similar criteria were used to evaluate the Collected Papers of the International Academy of Applied Kinesiology 1980 (Summer). The volume contained a total of 79 papers. Approximately 26 papers could be classified as review articles, leaving a total of 53 clinical papers. Of the 53 remaining papers only one could be classified as approaching the above criteria. The clinical papers therefore had minimal left brain input.

It can be argued that Man's highest creative achievements are the products of complementary functioning of both right and left brain activity.[4.] If this is true, it seems that Applied Kinesiology must integrate more left brain activity in its approach to therapeutics in order to approach its great potential as an art and science for the benefit of mankind. A more integrated approach will enable Applied Kinesiology to communicate more readily with the left brain sciences. Without this communication and integration, Applied Kinesiology can never fully mature as a therapeutic modality and its scope and usefullness will be severely restricted and limited.

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1. Robert E. Ornstein, "The Psychology of Consciousness", W. H. Freeman Co. San Francisco, Calif., 1972, pp. 52-53.
2. Bradford Hill, "Principles of Medical Statistics", New York, Oxford University Press, 1971, p. 273.
3. Circulation, 1980
4. Robert E. Ornstein, "The Psychology of Consciouness", W. H. Freeman Co. San Francisco, Calif., 1972, p. 12.

HEALTH PRACTICES IN EUROPE

Joen Fagan, Ph.D.

Abstract: This paper gives some impressions of health practices in Europe obtained from observations and talks with several professionals during a trip to Germany, Switzerland, and Italy in June of 1981.

In Germany I gave a workshop for the psychiatric, psychological, and physical therapy staff of a private clinic in the foothills of the Bavarian Alps which specialized in treatment of patients with heart problems. In general, the treatment is very similar to American medical procedures; however, the physicians do believe that potassium (called Kalium) and magnesium must be given or other drugs and procedures may be ineffective. Exercise is emphasized, but dietary considerations are largely ignored. The food, tastily prepared, included large meals with fried foods, potatoes, butter, cheese and pastries. Weight loss and avoiding fats would be very unlikely.

Two brief vignettes: a psychologist asked for help with her migraines. T.K. located the cause of these in unresolved memories from childhood of a threatening, disapproving nursemaid, whose anger was now being projected onto others with the resulting over-efforts at trying to please. (Many Germans are now consciously trying to be very lenient with their children to counteract what they see as overly harsh and obedience-fostering practices). A psychiatrist asked for a private consultation for several physical concerns. He reported with delight that the AK findings were exactly what he had been told by his homeopath.

Homeopaths are also available in Switzerland, but, as is true in most of Europe, not widely accepted. (The exception is in England where Queen

Elizabeth's use of a homeopathic physician has provided social sanction). However, homeopathic remedies are routinely available in apothecaries and widely used for colds, upset stomachs and allergies. Swiss M.D.'s are beginning a drive to remove them from the shelves. In addition to homeopaths, natural healers are available, if poorly trained, and even licensed in one canton.

The Swiss, especially in the country, appear very healthy, fostered by hard outdoor work, much walking, and clean air and water. Every country home has its garden and its compost heap. Unfortunately, rats that burrow and eat grass roots and a rapidly spreading weed threaten the pastures, and the Swiss herder is increasingly resorting to poisons to control these problems.

Health food stores are beginning to emerge in the larger cities with their supplies of soy bean products and protein powders. The extent of the stores and the variety of products are several years behind the U.S. explosion. I was able to arrange meeting with a druggest at a health food store (combined with a store which sold perfumes, beauty supplies, etc.) who was suggested by a friend as having an excellent reputation for giving homeopathic remedies and food supplements for physical problems. We swapped recipes for dealing with stress, finding many commonalities, especially in dietary regimes and vitamin supplements. He introduced me to Taiga (pronounced Tiger), an herbal preparation that comes from the Soviet Union and is recommended for stress, nervous states, and problems with concentration. He compared it with gensing in its broad positive effects (but said he was not using gensing much since what he could obtain was of very poor quality). A final Swiss remedy which I liked very much was a pillow filled with a variety of herbs which is placed over painful areas. I cannot vouch for its healing efficacy, but the fragrance and warmth provided were delightful.

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The Thyroid

by Dr. Kenneth S. Feder

ABSTRACT. This paper presents a basic review of the innervation to the thyroid with some references to specific spinal manipulations which may influence thyroid function.

HISTORY

The history of thyroid treatment by the medical establishment reveals a stereotype approach to both diagnosis and treatment. In the 1920's iodine and dessicated thyroid were the two therapies in general use for thyroid treatment. Surgury was very common in treating thyroid malfunction, and evaluation of the thyroid was by pulse rate, presence of tremor or other clinical symptoms suspicioned to relate to the thyroid. As for a laboratory approach, the chief procedure was the oxygen displacement apparatus known as the basac metabolism machine.

At that time thyoid cases were usually diagnosed as too much or too little thyroid or enlarged thyroid. The treatment of a hyperthyroid patient was the administration of iodine, usually in the form of Lugol's solution, and if there was an unsatisfactory response to this treatment surgery was performed to remove a portion of the gland and thereby reduce its ability to function. In cases of hypothyroidism the use of desiccated whole thyroid was the therapy and surgury was performed in cases of thyroid enlargement whether it was due to adenomatous goiter or from neoplastic origin.

Principles of Manipulative Treatment Research has shown that changes in physiology of the thyroid gland occurs when the innervation of the gland is modified by the removal of the nerves or by abnormally stimulating the nerves by electrical currents. While this information is important in showing changes of nerve innervation to the thyroid, this is not the circumstance that is involved in response to related spinal manipulation. The modification of normal sympathetic or parasympathetic innervation as a result of a facilitated spinal segment will not cause a denervation effect. The essential response will be distortion of the innervation, which will alter the physiologic action of the gland, and

just as important, alter the response of the thyroid gland to responses from other external influences. The interaction of the thyroid with other tissues and organs is the outstanding characteristic of its physiology. This interaction with other components can occur in one of two ways: by its innervation or by influences brought by circulation. The intention of manipulation should be to improve the capacity of the thyroid to react and interact according to pattern.

Autonomic Neurologic References

The effect on the function of any organ, including the thyroid that may result from the facilitation response of a parapinal somatic dysfunction has to be transmitted from the spine to the organ by means of the sympathetic nervous system. Some of the effects of abberent sympathetic nerve activity are related to the thyroid gland innervation, and some are related to the sympathetic nerve effects on functionally related structures.

Innervation of the Thyroid Gland

In discussing the nerve supply to the thyroid gland, Williams in 1974 summarized it as follows:

The thyroid receives from both adrenergic and cholinergic nervous systems: the adrenergic supply from cervical sympathetic ganglia, and the cholinergic from the vegas nerves. It has been thought that the sole function of neurologic stimulation has been the regulation of blood flow to the thyroid. Although acute changes in blood flow do not appear to alter the rate of hormone release, the rate of perfusion influences the delivery o T.S.H., iodine and metabolic substrates and may eventually influence glandular function and growth. Recent studies together with evidence that adrenergic and other amines influence iodine metabolism in isolated thyroid cells and in vivo, indicate that the adrenergic nervous system can influence thyroid function through a direct effect on the function of the follicle cell.

Except for the benefit to the venous and lymphatic circulation of the thyroid gland by applying local manipulation to release fascial fixation or tension, most of the benefits to be derived from manuipulation are via autonomic innervation.

Innervation in the thyroid gland is provided by both the sympathetic and parasympathetic systems. The parasympathetic innervation is essentially

transmitted to the gland by way of the superior and inferior laryngeal nerves. Probably most of the parasympathetic influences are from the tenth cranial nerve. Williamson (1973) found a paraspinal somatic reaction area at the second cervical segment on the left side in 88% of the patients with thyroid dysfunction. The left-sided somatic response at C-2 is more liable to be related to the vagus nerve relationship because of the anatomic communication of the second spinal nerve only on the left side.

Sympathetic innervation is the primary nerve source. The autonomic nerves flow out from the spinal cord along its whole length. In spite of this rather widespread source suggested, it is likely that there are certain areas of the spinal column relationship and the sympathetic system that have more influence.

The nerves supplying the thyroid gland are transmitted to it with the arterial supply - the superior and the inferior thyroid arteries. The superior thyroid artery originates from the external carotid and the inferior thyroid vessel enters from below, from the subclavian via the thyrocervical trunk.

The origin of the sympathetic nerves that are carried by these vessels is probably related more to certain levels of the sympathetic chain and its spinal cord level of communication. The sympathetic nerves travel with the superior thyroid artery and are derived from the superior cervical sympathetic ganglion (Williams, 1974). The superior cervical ganglion is also related to the second cervical spinal segment via the ansa hypoglossal loop and could contribute to the high incidence of tissue reactivity found in the presence of the thyroid disease (Williamson, 1973). Also, the sympathetic contribution to the arterial supply will orginiate from the carotid plexus. The sympathetic nerve source to the carotid plexus is related more to the lower cervical sympathetic ganglion, which would be responsive to influence from facilitation of the lower cervical spinal segments.

To better understand the relationship of the innervation of the thyroid gland and its specific relationship to the spinal segmental nerves, let us review the details of their anatomy (Gray, 1973). It is more useful to subdivide the description into three parts: (1) vagal spinal relations, (2) sympathetic afferent, and (3) sympathetic efferent.

Vagal nerve supply to the gland comes from its superior and inferior laryngeal branches. The vagus nerve communicates at its inferior ganglion with the superior cervical sympathetic ganglion and the loop between the first and second cervical spinal nerves. (This part of the ansa hypoglossal loop has contribution from both the first and the second cervical spinal nerves.)

The sympathetic afferent, which is the least well-known part of the automomic nervous system, has been described as follows (Gray, 1973):

1. Afferent fibers from the blood vessels of the brain and meninges accompany the branches of the internal carotid and vertebral arteries passing through the upper cervical spinal nerves.

2. The visceral afferents from the larynx, trachea, esophagus, and thyroid gland are carried by the vagus or reach the sympathetic trunk through the pharyngeal plexus and pass through rami communications to the lower cervical (C-5 and C-6) and/or the upper thoracic spinal nerves.

The sympathetic efferent supply may be described as follows:

1. The superior cervical ganglion is the largest of the ganglia in the cervical portion of the sympathetic system. Among its branches are those to the upper two to four cervical spinal nerves. The upper communication to the upper two is almost constantly present and joins the loop between the first and second cervical spinal nerves. The third and fourth cervical spinal nerve connections are less frequent and may occur only occasionally.

2. The middle cervical ganglion is constantly supplied to the fifth and sixth cervical spinal nerves. Specifically named "thyroid nerves" from a plexus on the inferior thyroid artery and supply the thyroid gland and arise from the middle cervical ganglion.

3. The stellate ganglion is a common structure representing the combination of the inferior cervical and the first thoracic sympathetic ganglia. This ganglion has connection through its gray rami with the sixth, seventh, and eighth cervical spinal nerves and the upper two thoracic spinal nerves.

4. The first, second, third, fourth, and sixth, with more important contribution from the second, provide the white rami, which ascend in the sympathetic chain to the cervical ganglion distribution.

From this review of the anatomy it would be reasonable to conclude that the most significant neurologic relationship of the spine to the thyroid gland is (1) second cervical segment, (2) lower cervical, primarily cervicals 5 and 6, and (3) upper thoracic, with the most likely primary site at the second thoracic segment.

The summary of sympathetic nerve sources and relations is consistent with observations of osteopaths have used osteopathic manipulation as part of treatment of thyroid disorders. A majority of the clinicians who have applied manipulative procedures found the following somatic structural changes with consistency. Most of their manipulative work was related to one or more of the following areas of the spine: upper cervical (C-2), middle lower cervicals (C-4, C-5, C-6), and the upper thoracic area involving T-2 and/or its adjacent segments.

It is interesting to note the consistency of the gross distortion that can be observed with both hypothyroid and hyperthyroid disorders occurring in the upper thoracic spine. There is an amazing consistency in the flexion distortions involving the upper thoracic spine. There is a classic upper thoracic hump as part of the fat redistribution that occurs with hypothyroidism. Also, the roundness that is observed in the neck, face, and upper thoracic spine is as common as exophthalmos in Graves' disease. Hypothyroid disturbances have been associated with spinal functional problems of significance in the upper cervical (C-2) and upper thoracic (T-2) areas with hypothyroid disturbances. The major spinal reaction sites involved with hyperthyroid dysfunctions would be in the upper thoracic area and the lower cervical (C-4, C-5, C-6) segments.

There have been many advances in the last 40 to 50 years in the understanding of thyroid function. Although there have been advances in the evaluation and understanding of the thyroid, treatment for the clinically dysfunctioning thyroid has not paralelled these advances. Applied kinesiology however, has provided the doctor of chiropratic with a viable alternative in both the diagnostic and therapuetic approaches to thyroid treatment. By using kinesiology one can see that the thyroid is a most complex organ which is associated with other glands in the neuroendicrine system. An understanding of the thyroid is no longer as simple as too much or too little functioning but must encompass the interaction of the

thyroid with the entire neuroendocrine regulatory mechanism. Through applied kinesiology we recognize the pituitary and hypothalamic involvement, wee attribute dysfunctioning to structural abnormalities which affect the blood, lymph, and nerve supply and other systems to the thyroid. The entire five finger kinesiological approach gives the physician the opportunity to determine the cause of the thyroid dysfunction and treat accordingly.

References

1. Gray H. Anatomy of the Human Body, Philadelphia, Lee & Febryer 1973 p. 1004

2. Weinberg M. Osteopothic Medicine, New York, McGraw Hill 1969 p. 271.

3. Williams R. H. Textbook of Endocrinology, ed 5. Philadelphia, W. B. Saunders Co. 1974.

4. Williamson M. E. Thyroid dsyfunction and its somatic refexions: A primary report. J. AM Osteopath Assoc. 72:731.

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"FIXATION PALPATION" - A Fast Entry into Structural Faults

Key Words - Fixation, Palpation, Correlation of Palpation and Challenge.

ABSTRACT

Traditional motion palpation of the spine is contrasted to the challenge technique and correlated. A combination of both techniques provides a fast and detailed method of removing subluxation.

Applied Kinesiology provides us with mechanisms whereby we can therapy localize, challenge and remove subluxation complexes within the spinal column. Fixation palpation allows us to determine fixation between two or more vertebrae in six directions - flexion, extension, left and right rotation and left and right lateral bending.

Therapy localization appears to demonstrate only major subluxations between two vertebrae and once the major has been removed the subluxation component will no longer therapy localize although there may be several other directional subluxations within the complex. It has been our experience that the subluxation complex may have to be adjusted in three or four or even five directions to completely remove the subluxation.

It is our experience that spinal fixation ie. hypomobility in one section of the spine leads to hypermobility in other areas. For example mid-thoracic fixations particularly of the anterior ligament and lateral bending, causing a reactive or compensating hypermobility of the cervical spine and/or pelvis.

To date a comparison of fixation palpation and challenging have correlated exactly, if the doctor takes the time to carefully challenge all six directions of the subluxation complex, although removing the most obvicus subluxation will eliminate therapy localization to that complex.

Fixation palpation is an art which requires practice but in a short period of time the doctor is able to discern limited movement in the six directions mentioned above and he is able to adjust the subluxations and repalpate to determine the change in mobility. Again the subluxations will challenge prior to treatment and not challenge after treatment.

Fixation palpation has become an important part of chiropractic technique ie. structural faults in that it makes anlaysis faster, is less tiring on the doctor and the patient because it reduces the amount of muscle testing required and patients can be taught to appreciate the limitation of movement before the adjustment and the freedom of movement after the adjustment.

Because fixation palpation meets the criteria for Applied Kinesiology it is one additional method that we can use to the advantage of ourselves and our patients.

R.L. Gleeson B.Sc., D.C.

H. WALLACE GUNN, SR., D.C.

"TASTE AT A DISTANCE"

THROUGH OUR SENSE ORGANS WE EXPERIENCE THE WORLD AROUND US. IT IS THROUGH THESE SENSATIONS THAT WE RECEIVE CONTINUOUS AND DETAILED INFORMATION ABOUT SOUNDS, SMELLS, TASTES, TOUCHES AND TEMPERATURE. THE NERVOUS SYSTEM USES THIS INFORMATION TO REGULATE BEHAVIOR. IN PRINCIPLE, BEHAVIOR SHOULD ALWAYS BE BIOLOGICALLY 'CORRECT', THAT IS, APPROPRIATE TO A GIVEN SITUATION, SO THAT THE INDIVIDUAL CAN AVOID DANGER AND SURVIVE. THE IMPORTANCE OF OUR SPECIAL SENSES ARE NOT FULLY APPRECIATED UNTIL WE UNDERSTAND THE INTERPLAY OF THESE VARIOUS SENSATIONS.

THE PURPOSE OF THIS PAPER IS TO HELP US APPRECIATE AND UNDERSTAND HOW CLOSELY THE SENSATIONS OF TASTE AND SMELL ARE ALLIED, AND THE IMPORTANCE THEY BOTH PLAY IN THE TESTING OF NUTRIMENTS USING APPLIED KINESIOLOGICAL TECHNICS.

A NATURAL INSTINCT COMMON TO MAN AND ANIMALS IS THE ABILITY TO 'SNIF'. WHEN WE WISH TO SMELL SOME PARTICULAR SCENT MORE ACUTELY WE AUTOMATICALLY MAKE A SHARP INSPIRATION OR 'SNIF'. WHY IS THAT?

IN MANY ANIMALS THE SENSE OF SMELL IS VERY ACUTE, AND A LARGE PORTION OF THE BRAIN IS GIVEN OVER TO IT. IT IS ONE OF IT'S CHIEF LINES OF DEFENSE. IN MOST ANIMALS THE OLFACTORY SENSE IS OF PARAMOUNT IMPORTANCE, WARNING OF DANGER, GUIDING IN THE QUEST OF FOOD, AND MOTIVATING THE SEX REFLEXES. EVEN THOUGH MAN'S SENSE OF SMELL CAN BE CLASSIFIED AS RUDIMENTARY, AS COMPARED TO ANIMALS, MAN CAN DETECT CERTAIN SUBSTANCES IN A DILUTION OF ONE PART IN SEVERAL BILLION PARTS OF AIR. (ARTIFICAL MUSK AND MERCAPTIN). EXPERIMENTS HAVE SHOWN THAT THE HUMAN NOSE IS FAR MORE SENSATIVE THAN ANY MACHINE DESIGNED TO MEASURE SMELLS. THE SENSE OF SMELL IS MANY THOUSAND TIMES MORE ACUTE THAN THE SENSE OF TASTE. (ABOUT 25,000 IN THE CASE ETHYL ALCOHOL). WHY IS THAT?

"TASTE AT A DISTANCE" (CONTINUED)

THE OLFACTORY SENSATIONS ARE PART OF OUR PRIMARY LINES OF DEFENSE. YOU USUALLY SMELL OR 'SNIF' SUBSTANCES BEFORE YOU TASTE THEM. THIS IS A PROTECTIVE MEASURE TO AVOID EATING SOMETHING THAT MIGHT BE HARMFUL. IT IS A SCREENING PROCESS, AN ALERTING MECHANISM OF THE BODY. THE SENSE OF SMELL SERVES SEVERAL IMPORTANT FUNCTIONS. IT WARNS OF FOOD GONE BAD. OF POISONOUS FUMES OR SMOKE FROM FIRE. IT CAN ASSIST IN THE QUEST FOR FOOD. AIDS DIGESTION AND CONTRIBUTES TO THE PLEASURES OF EATING. IT IS IMPORTANT IN SEX LIFE. RECENT PHYSIOLOGICAL RESEARCH CONFIRMS THAT ODORS PRODUCED BY GLANDULAR SECRETIONS ARE SEXUALLY AROUSING. THEY ARE THE NATURAL 'PERFUMES OF LOVE'.

A VERY DEFINITE PROTOCOL HAS BEEN ESTABLISHED IN APPLIED KINESIOLOGY AS IT PERTAINS TO NUTRITIONAL TESTING : THAT IS MUST BE PLACED IN THE MOUTH AND THAT THE PATIENT MUST TASTE THE SUBSTANCE BY EITHER CHEWING OR SUCKING ON THE MATERIAL. THEN THE INDICATOR MUSCLE IS TO BE TESTED AND THE RESULTS NOTED. WE WOULD LIKE TO POINT OUT AND TO RE-ENFORCE THE IDEA THAT THE MERE PLACING OF THE MATERIAL ON THE TONGUE WITHOUT THE PATIENT TASTING IT, IS NO DIFFERENT THAN PLACING THE MATERIAL ANY PLACE ELSE ON THE BODY. TO BE EFFECTIVE THE MATERIAL HAS TO BE TASTED. WHY IS THAT?

THE RECEPTORS FOR TASTE ARE EMBEDDED IN THE TASTE BUDS, AND ARE LOCATED ON THE TONGUE, THE PALATE, AND THE PHARYNX. FOR THESE GUSTATORY CELLS TO BE STIMULATED, THE SUBSTANCES WE TASTE MUST BE IN SOLUTION IN THE SALVIA SO THEY CAN ENTER THE TASTE PORES. A DRY MATERIAL JUST PLACED ON THE TONGUE HAS NO TASTE. DESPITE THE MANY SUBSTANCES WE SEEM TO TASTE, THERE ARE BASICALLY ONLY FOUR TASTE SENSATIONS. STRICKLY SPEAKING, TASTE IN THE MOUTH RELATES TO SENSATIONS AND COMBINATIONS OF SWEET, SOUR, SALT AND BITTER. THE OTHER TASTE SENSATIONS ARE MORE CLOSELY LINKED TO THE SENSE OF SMELL, AND ALL TASTES ARE ENHANCED BY THE OLFACTORY SENSATIONS. WHY IS THAT?

"TASTE AT A DISTANCE" (CONTINUED)

SMELL COLLABORATES WITH TASTE. IF YOU HOLD YOUR NOSE AND CLOSE YOUR EYES IT IS ALMOST IMPOSSIBLE TO DISTINGUISH BETWEEN A MASHED APPLE AND A MASHED ONION. IF YOU CAN'T SMELL IT, YOU CAN'T TASTE IT. THE FLAVOR OF EXCELLENT ROAST BEEF OR THE BOUQUET OF WINE ARE ALMOST ENTIRELY PERCEIVED BY THE NOSE.

WHILE THE SENSE OF SMELL MAY APPEAR TO BE SUBSERVANT TO THE SENSE OF TASTE, WE SHOULD REALIZE THAT MANY OF THE FINER FLAVORS ARE IN REALITY SENSATIONS OF SMELL AND OLFACTION ENTERS LARGELY INTO MANY OF THE SENSATIONS WHICH WE GENERALLY CLASS AS TASTES. ONCE AGAIN, THE SENSE OF SMELL AND TASTE ARE VERY CLOSELY ALLIED AND IT HAS BEEN APTLY DESCRIBED AS 'TASTE AT A DISTANCE'. WHY IS THAT?

THE MUCOUS MEMBRANE LINING THE GREATER PART OF THE NASAL CAVITY HAS NO TRUE OLFACTORY FUNCTION. THE OLFACTORY RECEPTORS ARE CONFINED TO THE NASAL MUCOSA IN THE SUPERIOR NASAL CONCHAE AND THE ADJACENT NASAL SEPTUM. ALTHOUGH IT IS A SMALL AREA, THE OLFACTORY EPITHELIUM IS CONVOLUTED AND THUS PRESENTS A LARGE SURFACE. IT IS A SPECIALIZED TYPE OF EPTHELIUM AND DIFFERS IN IT'S GROSS APPEARANCE AND HISTOLOGICALLY FROM THE REST OF THE NASAL MUCOSA.

THE END ORGANS OF SMELL DIFFER FROM THOSE OF ANY OTHER SENSE, IN THAT THE CELL BODY OF THE PRIMARY NEURON IS SITUATED IN THE PERIPHERAL ORGAN ITSELF, AND IT IS STIMULATED DIRECTLY WITHOUT INTERVENTION OF A SPECIALIZED CELL. NO OTHER SENSORY MECHANISM POSSESSES BOTH THESE FEATURES. IT IS IMPORTANT TO REMEMBER THAT HERE AS NOWHERE ELSE, THE NERVOUS SYSTEM IS IN DIRECT CONTACT WITH THE EXTERNAL ENVIROMENT. SO, WHEN A PERSON 'SNIFFS', THE ODORUS MATERIAL IS FORCED INTO THE OLFACTORY AREA WHERE IT COMES IN CONTACT WITH THE OLFACTORY HAIRS OR CILIA THAT ARE COVERED ONLY BY A SEROUS FLUID FROM THE GLANDS OF BOWMAN. THIS CONTACT CREATES AN IMPLUSE THAT IS CARRIED ALONG THE OLFACTORY NERVE THAT TERMINATES IN THE PRIMARY

"TASTE AT A DISTANCE" (CONTINUED)

OLFACTORY AREA OF THE CEREBRAL CORTEX. IN THE CORTEX THE IMPULSES ARE INTRE-PRETED AS ODOR AND GIVE RISE TO THE SENSATION OF SMELL.

THE MECHANISM OF THE 'SNIF' APPEARS TO BE A COMPRESSING TOGETHER OF THE SEPTUM AND THE OUTER WALL OF THE NOSE AT THE FRONT OF THE RESPIRATORY PASSAGES SO AS TO DIVERT THE INSPIRED AIR INTO THE OLFACTORY AREA. THE MECHANISM OF THE 'SNIF' SHOULD BE UNDERSTOOD AND ITS IMPORTANCE IN TESTING OF NUTRITIONAL SUBSTANCES.

TO, REPEAT, THE NATURAL INSTINCT TO 'SNIF' IS A PROTECTIVE MEASURE. YOUR BODY KNOWS FROM THE SMELL OF THE SUBSTANCE IF IT WILL BE BENIFICIAL OR NOT. WE SAY IN APPLIED KINESIOLOGY, "ASK THE BODY AND IT WILL TELL YOU". WHY NOT ASK THE THE BODY THROUGH THE USE OF THE 'SNIF' IF THE SUBSTANCE IS BENIFICIAL OR NOT? THE SYSTEM IS THERE TO BE UTILIZED.

THE INFORMATION FEED TO THE BRAIN THROUGH THE OLFACTORY SENSATIONS AND THE BODY'S RESPONSE THROUGH THE FEED BACK OF THIS INFORMATION CAN BE UTILIZED MORE FULLY IN OUR DIAGNOSING AND TREATING OF PATIENTS.

I BECAME INTERESTED IN INHALATION THERPAY AFTER DR. JOHN BRIMHALL'S PRESENTATION OF HIS PAPER IN THE SUMMER OF 1979 AT ICAK. SINCE THAT TIME OUR OFFICE HAS BEEN TESTING PATIENTS AND THEIR NEED FOR NUTRITIONAL SUPPORT BY HAVING THE PATIENT'S 'SNIF' THE SUBSTANCES AND THEN CHECK THE INDICATOR MUSCLE. PRIOR TO DOING THIS WE CHECKED ALL PATIENTS BY DOING BOTH THE LINGUAL METHOD AND THE SNIF METHOD. WE FOUND THAT ONE METHOD WAS JUST AS ACCURATE AS THE OTHER. THIS THEN GAVE US THE OPTION OF EITHER METHOD. IN OUR EXPERIENCE OVER THE LAST TWO YEARS WE HAVE FOUND THE 'SNIF' METHOD TO HAVE MANY ADVANTAGES TO IT. IT WILL NOT ERASE YOUR INDICATOR, AS IS THE POSSIBILITY WITH THE PATIENT CHEWING OR SUCKING THE MATERIAL. IT IS A

"TASTE AT A DISTANCE" (CONTINUED)

MUCH EASIER AND FASTER METHOD. IT IS CLEANER AND MORE ECONOMICAL. THE PATIENTS LIKE IT A LOT MORE.

BESURE TO HAVE THE PATIENT 'SNIF' THE SUBSTANCE WITH A SHARP INSPIRATION, RATHER THAN MERELY SMELLING IT. FORCE THE ODOR UP INTO THE OLFACTORY AREA BY 'SNIFFING' IT. ANY KIND OF SUBSTANCE OR MATERIAL CAN BE TESTED THIS WAY. ASK THE BODY BY THE MOST DIRECT ROUTE TO THE BRAIN.....THE OLFACTORY SENSATIONS.

REFERENCES:

1. PHYSIOLOGICAL BASIS OF MEDICAL PRACTICE. BEST AND TAYLOR, SIXTH EDITION.
2. CORRELATIVE NEUROANATOMY AND FUNCTIONAL NEUROLOGY. J.S. CHUSID AND J.J. MC DONNALD, LANGE MEDICAL PUBLICATIONS.
3. PRINCIPLES OF ANATOMY AND PHYSIOLOGY. TORTORA AND ANAGNOSTAKOS, SECOND EDITION.
4. APPLIED KINESIOLOGY VOL. #1. DAVID WALTHER, D.C.
5. COLLECTED PAPERS, ICAK, SUMMER 1979. JOHN BRIMHALL, D.C.
6. BEHOLD MAN. LENNART NILSSON. LITTLE, BROWN AND COMPANY, BOSTON.
7. COMMON GLANDULAR DYSFUNCTION IN THE GENERAL PRACTICE. WALTER H. SCHMITT, JR., D.C.
8. COMPILED NOTES OF CLINICAL NUTRITION. WALTER H. SCHMITT, JR.,D.C.

A COMPUTER PROGRAM FOR USE IN WEIGHT REDUCTION

The following program was written for use in the management of weight. Attention has been given to supplying meaningfull information to the patient regarding weight as well as dietary advice and an exercise program.

This program was designed to meet the following criterion:

1. Determine the ideal weight of the patient.

2. Determine the average number of calories needed to support that weight as well as the average number that should be currently being consummed to maintain the present weight of the patient.

3. Determine the approximate ratio of proteins, carbohydrates and fats that the diet should consist of.

4. Determine an approximate Basal Metabolic Rate for the patient.

5. Offer sample diets for use in weight reduction.

6. Determine an appropriate aerobic exercise program for a person in poor condition for his/her age group.

This program was written for an Apple II computer using Applebasic. Minor changes in the program may be needed to adapt this program to any other computer. Attempts have been made to use Remark statements (REM) to inform you of the varying portions of the program. This program is currently in use in my office and has been modified a number of times. You will find it easy to modify the print statements to change the wording or recommendations to suit your personal needs.

For those of you who are considering a computer for use in the office, this program gives you an idea of one type of use, aside from the basic accounting and word processing abilities, that a computer offers.

David W. Leaf,D.C.
Route 44
Plymouth, Ma. 02360

```
 LIST 1,232
]
1   REM :WEIGHT MANAGEMENT PROGRAM DEVELOPED 11/80 BY DAVID LEAF.
2   REM :CREDIT GIVEN TO SHELDON DEAL FOR WORK IN HIS BOOK 'NEW LIFE THROUGH NUTRITION'.
3   REM : CREDIT TO CLARK ODEN FOR THE INFORMATION REGARDING BASAL METABOLIC RATE FROM BLOOD PRESSURE READINGS
4   REM : MEASUREMENT OF FAT % IS DONE USING CALIPERS FROM CAROLINA BIOLOGICAL SUPPLY
9   REM : PRINTER CONTROL
10  EM$ =  CHR$ (1): REM : ENHANCED MODE
12  NM$ =  CHR$ (2): REM : NORMAL PRINT MODE
14  GS$ =  CHR$ (29): REM : 10/CHARACTERS /INCH
16  RS$ =  CHR$ (30): REM : 12 CHARACTERS/INCH
20  FF$ =  CHR$ (12): REM : FORM FEED
90   INPUT "IF CURSOR IS NOT ON THIS LINE HIT ANY KEY";AA$
94   HOME
99   REM :INPUT FACTORS
100   INPUT "NAME = ";A$
105   INPUT "DATE =  ";Z$
110   INPUT "AGE = ";Z
120   INPUT "SEX = 1 FOR MALE  2 FOR FEMALE  ";C
130   INPUT "BUILD (1 SMALL 2 MEDIUM 3 LARGE) = ";E
140   INPUT "HEIGHT IN INCHES = (BAREFOOT)  ";H
145   INPUT "WEIGHT IN POUNDS =  ";F
148   GOSUB 900
149   REM :DISPLAY INPUT VARIABLES FOR CORRECTIONS IF NECESSARY
150   HOME : PRINT A$,Z$
152   PRINT : PRINT "AGE = "Z,"SEX = "C
153   PRINT ,"(1 - MALE 2 - FEMALE)"
154   PRINT : PRINT "HEIGHT = "H,"WEIGHT = "F
155   PRINT "B.P. = "S"/"T,"PULSE RATE = "P
156   PRINT : PRINT "BUILD = "E
157   PRINT "(1 FOR SMALL  2 FOR MEDIUM  3 FOR LARGE)
158   PRINT : PRINT "TOTAL MM. OF FAT = "X
160   PRINT : PRINT : PRINT "IF CORRECT HIT ANY KEY TO CONTINUE ----- ----TO CORRECT ENTRIES HIT RETURN------"
164   GET M$
166   IF  ASC (M$) = 13 THEN 100
199   IF C = 2 GOTO 300
200 W = ((H - 60) * .025 + 1.87) * H
201   REM :MALE WEIGHT FACTORS
210 M = W * 1.06
212 L = W * 1.14
220 W =  INT (W)
222 M =  INT (M)
224 L =  INT (L)
230   IF E = 2 THEN W = M
232   IF E = 3 THEN W = L
```

```
LIST 240,422

240  PRINT W,M,L
242  IF X < 30 THEN XF = 11: GOTO 400
244  IF X < 45 THEN XF = 16: GOTO 400
246  IF X < 60 THEN XF = 20: GOTO 400
248  IF X < 90 THEN XF = 25: GOTO 400
250  IF X < 120 THEN XF = 28: GOTO 400
252  IF X < 160 THEN XF = 32: GOTO 400
254 XF = 36
260  GOTO 400
299  REM :FEMALE WEIGHT FACTORS
300 W = ((H - 60) * .02 + 1.70) * H
310 M = W * 1.05
315 L = W * 1.15
316 W =  INT (W)
317 M =  INT (M)
318 L =  INT (L)
320  IF E = 2 THEN W = M
322  IF E = 3 THEN W = L
330  IF X < 18 THEN XF = 13: GOTO 400
332  IF X < 33 THEN XF = 18: GOTO 400
334  IF X < 42 THEN XF = 23: GOTO 400
336  IF X < 57 THEN XF = 28: GOTO 400
338  IF X < 64 THEN XF = 32: GOTO 400
340  IF X < 84 THEN XF = 37: GOTO 400
342 XF = 42
400  REM : PRINT ROUTINE FOR WEIGHT GUIDE
401 N = (F - W)
402 Y = N / 10 + 8: IF N < 8 THEN Y = 0
404  PR# 2
408  PRINT EM$: PRINT GS$: PRINT
410  PRINT "          WEIGHT  CONTROL  PROGRAM"RS$
411  PRINT EM$
414  PRINT : PRINT
415  PRINT ,A$,,Z$NM$
418  PRINT : PRINT : PRINT "OBEISITY IS A VERY SERIOUS SUBJECT. FAT ON YOUR BODY IS NOT ONLY UNBECOMMING"
419  PRINT "IT IS ALSO DANGEROUS TO YOUR HEALTH. STATISTICS SHOW THAT A PERSON OVER 45 WHO IS"
420  PRINT "A MERE 10 POUNDS OVER WEIGHT HAS DECREASED HIS OR HER LIFE SPAN BY 8%, AND FOR"
421  PRINT "EVERY ADDITIONAL TEN POUNDS OF WEIGHT THE DECREASE BECOMES 20% GREATER."
422  PRINT

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LIST 425,492

425  PRINT "YOUR CURRENT WEIGHT IS "F" POUNDS AND YOUR IDEAL WEIGHT IS "W" POUNDS (PLUS OR)"
426  PRINT "MINUS FIVE POUNDS). AT THIS LEVEL YOUR LIFE EXPECTANCY HAS BEEN REDUCED BY A "
427  PRINT "FACTOR OF "Y"%."
429  PRINT
430  PRINT "YOUR PRESENT WEIGHT ",F" POUNDS"
431  PRINT
432  PRINT "YOUR WEIGHT GOAL    ",W" POUNDS"
433  PRINT
434  PRINT "TOTAL NUMBER OF POUNDS ",(F - W)" POUNDS"
435  PRINT : PRINT "APPROXIMATE BODY FAT = "XF"%. WHICH EQUALS "((F * XF) / 100)" POUNDS OF FAT.": PRINT
436  PRINT "TOTAL NUMBER OF CALORIES THAT NEED TO BE LOST "(F - W) * 3500" CALORIES"
437  PRINT
440  PRINT "CALORIES NEEDED TO SUPPORT CURRENT WEIGHT  " INT (F / 2.2 * 30)" CALORIES"
441  PRINT
442  PRINT "CALORIES NEEDED TO SUPPORT IDEAL WEIGHT OF "W" POUNDS EQUALS " INT (W / 2.2 * 30)" CALORIES"
446  PRINT "CALORIES NEEDED TO BE REDUCED DAILY ARE " INT ((F / 2.2 * 30) - (W / 2.2 * 30))" CALORIES"
447  PRINT
450  PRINT "THE LOWEST SAFE LEVEL OF UNSUPERVISED CALORIE REDUCING DIET IS A 1400 CALORIE LEVEL."
452  PRINT "AT THIS LEVEL, IT WOULD TAKE A MINIMUM OF " INT ((F - W) * 3500 / (F / 2.2 * 30 - 1400))" DAYS"
454  PRINT "FOR YOU TO REACH YOUR GOAL OF "W" POUNDS."
455  PRINT
460  PRINT "IN DETERMINING THE CORRECT DIETARY INTAKE FOR YOU, YOU NEED TO CALCULATE THE "
462  PRINT "APPROPRIATE LEVELS OF CARBOHYDRATES, PROTEINS AND FATS IN YOUR DIET. AS A GENERAL"
464  PRINT "RULE, YOU NEED 1 GRAM OF PROTEIN FOR EVERY 2.2 POUNDS THAT YOU WEIGH. FOR YOU"
466  PRINT "THIS MEANS THAT YOU SHOULD BE EATING AT LEAST " INT (W / 2.2)" GRAMS OF PROTEIN PER DAY."
468  PRINT "THIS INTAKE OF PROTEIN WILL PROVIDE " INT ((W - 2.2) * 4)" CALORIES PER DAY AND THE"
470  PRINT "REMAINDER OF YOUR CALORIC INTAKE SHOULD BE 2/3 CARBOHYDRATES TO 1/3 FATS."
475  PRINT EM$: PRINT
476  PRINT ,"FOOD INTAKE PERCENTAGES": PRINT NM$: PRINT "MAINTENANCE DIET - NORMAL METABOLISM"
477  PRINT NM$: PRINT  INT ((W / 2.2) * 30)" CALORIE DIET"
478  PRINT : PRINT "PROTEINS", INT (W / 2.2)" GRAMS"
480  PRINT "CARBOHYDRATES", INT ((((W / 2.2 * 30) - (W / 2.2 * 4)) * .667) / 4)" GRAMS"
482  PRINT "FATS", INT ((((W / 2.2 * 30) - (W / 2.2 * 4)) * .33) / 9.1)" GRAMS"
484  PRINT : PRINT "UNSUPERVISED WEIGHT REDUCTION DIET"
486  PRINT "1400 CALORIE DIET VALUES"
487  PRINT
488  PRINT "PROTEIN ","125 GRAMS"
490  PRINT "CARBOHYDRATES", INT (((1400 - (125 * 4)) * .66) / 4)" GRAMS"
492  PRINT "FATS", INT (((1400 - (125 * 4)) * .33) / 9.1)" GRAMS"


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LIST 493,712

493  PRINT FF$
494  PRINT : PRINT "SUPERVISED 1000 CALORIE DIET"
496  PRINT : PRINT "PROTEINS","125 GRAMS"
498  PRINT "CARBOHYDRATES", INT (((1000 - (125 * 4)) * .666) / 4)" GRAMS"
500  PRINT "FATS", INT (((1000 - (125 * 4)) * .33) / 9.1)" GRAMS"
502  PRINT : PRINT "SUPERVISED 500 CALORIE DIET"
504  PRINT : PRINT "PROTEINS","62 GRAMS"
506  PRINT "CARBOHYDRATES","40 GRAMS"
508  PRINT "FATS ","12 GRAMS"
598  PRINT GS$: PRINT
600  PRINT EM$"APPROXIMATE METABOLIC RATE"RS$
601 Q = 112 + ((Z - 20) / 5)
602 BM =  INT (((S - T) + P) - Q)
604  IF BM > 0 THEN BM = BM / 2
605  PRINT NM$
606  PRINT : PRINT "METABOLIC RATE = "BM"  NORMAL RANGE EQUALS PLUS  15 TO MINUS 15"
610  PRINT : PRINT "VALUES ABOVE 15 INDICATE PROBABLE INCREASED METABOLIC RATES DUE TO INCREASED "
611  PRINT "THYROID FUNCTION. LEVELS BELOW MINUS 15 USUALLY ARE INDICATIVE OF A DECREASED"
612  PRINT "THYROID FUNCTION."
639  PRINT GS$: PRINT EM$
640  PRINT "500 CALORIE DIET"
641  PRINT RS$: PRINT NM$
642  PRINT "FOLLOW THIS DIET FOR        DAYS/WEEKS"
643  PRINT
644  PRINT "BREAKFAST:","FRESH FRUIT & UNSWEETENED FRUIT JUICE"
646  PRINT : PRINT "LUNCH:","SOUP AND SALAD WITH OIL AND VINEGAR DRESSING PREFERRED"
648  PRINT : PRINT "DINNER:","SALAD, 1/4 POUND OF LEAN MEAT, FISH OR FOWL & SOUP"
699  PRINT GS$: PRINT EM$
700  PRINT "IOOO CALORIE DIET"NM$
701  PRINT RS$
702  PRINT : PRINT "BREAKFAST:","1/2 GRAPEFRUIT OR 4 OZ. OF ORANGE JUICE, 1 POACHED EGG ON 1 SLICE"
703  PRINT ,"HIGH FIBER BREAD, 6 OZ. SKIM MILK, NON-CAFFEINE HERB TEA"
705  PRINT : PRINT "LUNCH:","LARGE SALAD INCLUDING CHEESE AND MEAT, 1/2 CUP SKIM MILK, 1 PIECE"
706  PRINT ,"OF FRUIT & HERB TEA"
708  PRINT : PRINT "DINNER:","BOUILLON, 1/4 POUND OF LEAN MEAT, FISH OR FOWL,  2 - 1/2 CUP "
709  PRINT ,"SERVINGS OF LOW STARCH VEGETABLES, 1 PIECE OF FRUIT AND HERB TEA OR WATER"
710  PRINT : PRINT "IN PLACE OF MEATS, COMPLIMENTARY VEGETARIAN FOODS MAYBE USED THAT SUPPLY"
711  PRINT "ALL OF THE AMINO ACIDS - SEE 'DIET FOR A SMALL PLANET' FOR DETAILS." PRINT
712  PRINT "     CONSULT A HYPOGLYCEMIC DIET FOR A LIST OF                FOODS THAT ARE LOW IN STARCH"
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LIST 713,799

713  PRINT FF$
730  PRINT GS$: PRINT EM$: PRINT "EXERCISE"RS$
732  PRINT NM$: PRINT "A COMMON FALLACY IS THAT EXERCISE WILL INCREASE THE APPETITE. WHILE NOT"
733  PRINT "TRUE OF MODERATE EXERCISE IT IS OF EXTREME EXERCISE. "
734  PRINT : PRINT "IT HAS BEEN NOTED BY EXERCISE PHYSIOLOGISTS THAT IF YOUR PULSE RATE EXCEEDS CERTAIN "
735  PRINT "VALUES THEN WEIGHT LOSS WILL NOT INVOLVE THE LOSS OF FAT. INORDER FOR YOU TO LOSE"
736  PRINT "FAT YOU SHOULD EXERCISE WITH YOUR PULSE RATE AT APPROXIMATELY "(220 - Z) * .80" BEATS PER MINUTI
737  PRINT "THIS IS EQUAL TO "((220 - Z) * .80) / 10" BEATS IN SIX SECONDS. AT THIS LEVEL, YOU WILL LOSE"
738  PRINT "ONLY FAT AND NOT BREAKDOWN ANY OF YOUR PROTEIN STRUCTURES."
739  PRINT : PRINT "WE WILL HAVE YOU BEGIN WITH A WALKING ROUTINE. THIS HAS BEEN ADAPTED FROM THE AEROBIC"
740  PRINT "EXERCISES DEVELOPED BY KENNETH COOPER, M.D.. THESE ARE PROGRESSIVE EXERCISES"
741  PRINT "DESIGNED TO NOT ONLY HELP YOU LOSE WEIGHT BUT ALSO INCREASE YOUR CARDIOVASCULAR"
742  PRINT "AND PULMONARY SYSTEMS. YOUR BEGINNING WALKING PROGRAM IS AS FOLLOWS:"
750  IF Z < 30 GOTO 779
751  IF Z < 40 GOTO 790
752  IF Z < 50 GOTO 800
753  GOTO 810
760  PRINT "WEEK","DISTANCE","TIME"
779  REM :UNDER 30 WALK ROUTINE
780  PRINT "1","1.0 MILES","15:00 MIN."
781  PRINT "2","1.0       ","14:00 MIN."
782  PRINT "3","1.0       ","13:45 MIN."
783  PRINT "4","1.5       ","21:30 MIN."
784  PRINT "5","1.5        ","21:00 MIN."
785  PRINT "6","1.5        ","20:30 MIN."
786  PRINT "7","2.0         ","27:30 MIN."
787  PRINT "8","2.0         ","27:00 MIN."
788  GOTO 820
790  REM  :30-40 WALK ROUTINE
791  PRINT "1","1.0 MILES","17:30 MIN."
792  PRINT "2","1.0       ","15:30 MIN."
793  PRINT "3","1.0       ","14:15 MIN."
794  PRINT "4","1.0       ","14:00 MIN."
795  PRINT "5","1.5       ","21:40 MIN."
796  PRINT "6","1.5        ","21:15 MIN."
797  PRINT "7","2.0        ","29:00 MIN."
798  PRINT "8","2.0        ","28:00 MIN."
799  GOTO 820

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LIST 800,

800  REM :40-50 WALK ROUTINE
801  PRINT "1","1.0 MILES","18:00 MIN."
802  PRINT "2","1.0       ","16:00 MIN."
803  PRINT "3","1.5       ","24:00 MIN."
804  PRINT "4","1.5       ","22:30 MIN."
805  PRINT "5","2.0       ","31:00 MIN."
806  PRINT "6","2.0       ","30:00 MIN."
807  PRINT "7","2.5       ","36:00 MIN."
808  PRINT "8","2.5       ","35:30 MIN."
809  GOTO 820
810  REM :WALK ROUTINE 50 AND OVER
811  PRINT "1","1.0 MILES","18:30 MIN."
812  PRINT "2","1.0        ","16:30 MIN."
813  PRINT "3","1.0       ","15:00 MIN."
814  PRINT "4","1.5       ","24:30 MIN."
815  PRINT "5","1.5        ","23:00 MIN."
816  PRINT "6","1.5        ","22:30 MIN."
817  PRINT "7","2.0        ","28:45 MIN."
818  PRINT "8","2.0        ","28:30 MIN."
819  PRINT : PRINT : PRINT : PRINT
820  PRINT : PRINT EM$"WEIGHT LOSS ONLY OCCURS IF YOU WORK AT IT."
821  PRINT "PART OF THE PROBLEM IS DEVELOPING HABITS THAT"
822  PRINT "WILL KEEP THE WEIGHT OFF ONCE YOU HAVE REGAINED "
823  PRINT "YOUR MOST HEALTHY WEIGHT OF "W" POUNDS."
824  PRINT : PRINT "REMEMBER - YOU GAINED WEIGHT OVER A PERIOD"
825  PRINT "OF TIME - YOU WILL LOSE WEIGHT ONLY"
826  PRINT "OVER A PERIOD OF TIME  - DON'T RUSH IT!!"
897  PRINT FF$
899  END
900  INPUT "SYSTOLIC PRESSURE = ";S
902  INPUT "DIASTOLIC PRESSURE = ";T
904  INPUT "PULSE RATE = ";P
905  INPUT "TOTAL MM. OF FAT = ";X
906  RETURN

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ANOTHER FACTOR

James R. Lent, D. C.

ABSTRACT: A simple way to check supplement compatability on a sensitive patient.

In both sensitive and allergy type patients I have noticed there were occasions when various supplements created adverse reactions, in a very brief time, even though they checked out fine with multiple therapy localization.

The supplements which caused the most frequent sensitivities were products which contained either alfalfa, or raw glandulars. However, these were not the only ones by any means.

On one particular patient I had noticed a left temporal bulge periodically, and had routinely questioned him in regard to dietary indiscretions, and environmental exposures, when it was present. One day when we were discussing this he remarked that on the previous day he had made a mistake in his supplements and had taken one I had told him to discontinue. The light dawned! I had him chew one-half of that tablet, and, although the organ therapy localization remained intact, the previously corrected temporal bulge reappeared. Thus, the reappearance of the temporal bulge became an indicator of that individuals sensitivity to that product.

Since that time I have incorporated this localization and repeatedly reduced the errors with this type of patient. Proving once again that the body does supply the answers when we are able to correctly interpret them.

P R I M A R Y R E S P I R A T O R Y M E C H A N I S M

I N H I B I T I O N

by

Richard MELDENER D.C.

ABSTRACT Utilization of Primary Respiratory Mechanism Inhibition in Applied Kinesiology diagnosis .

THEORY The Primary Respiratory Mechanism (PRM) is of supreme importance to health .

When the PRM is disfunctioning , when adequate diagnosis and treatment are rendered spectacular results many times will take place .

Inversely , volontary inhibition of the PRM (IPRM) will temporarily affect the physiology and uncover many imbalances the body has adapted to .

PHYSIOLOGY SUTHERLAND (1) developed the PRM concept .

He did establish there is motion in the bones of the pelvis and skull synchronus with respiration .

He was the first to observe a relationship between craniosacral motion and cerebrospinal fluid fluctuation in the dura .

During inspiration :

ILIUM rotates posterior , inferior and internal at the PSS
SACRUM rotates anterior and superior at the apex
COCCYX rotates posterior and superior at the apex
SYMPHYSIS PUBIS spreads apart

PRIMARY RESPIRATORY MECHANISM INHIBITION

OCCIPUT rotates anterior and superior at the base
SPHENOID rotates posterior and superior at the wings
TEMPORAL rotates anterior at the superior border
PARIETAL rotates anterior at the superior border
FRONTAL rotates internally at the metopic suture
MANDIBULE rotates inferior and posterior at the symphysis menti

During expiration the opposite takes place .

THE TECHNIQUE The system of investigation consists of volontary inhibition of the patient's PRM during examination .
During the entire procedure normal breathing is maintained .

In order to obtain temporary inhibition or disturbance in the pendular action of the PRM different methods can be used to momentarily interfere with motion of the above listed bones .

I have classified the methods I am using for IPRM in :

1. Methods to IPRM at the pelvis level
2. Methods to IPRM at the skull level

I. Methods to IPRM at the pelvis level (pelvic torque induction)

During normal muscle testing examination :

a. Patient crosses his or her legs one knee on top of the other sitting up or supine

This method is the one I use the most because of its convenience
The patient quickly understands what you want him to do , and the IPRM efficiency is among the best I have found .

Nota: Sometimes the patient has hyperelastic ligament tone and/or hyper - mobility of the joints . Under such condition normal leg crossing, one knee on top of the other will not succeed to elicit IPRM .

It is then required to ask the patient to cross his legs, one knee on top of the other, torquing the pelvis as much as he possibly can .

b. Firm and tight locking of the pelvis with a belt

The belt I have used is not the De Jarnette type designed with build in elasticity , but rather an inelastic belt that will succeed to corset and inhibit pelvic respiration .

c. Placement of the patient in the De Jarnette Category II in order to increase any possible pelvic imbalance

Nota : Care should be taken not to create iatrogenic imbalances especially if examination is long lasting .

d. Patient sits up on the table with one foot beneath his buttocks and the other foot being on the floor

Nota : I have observed this position to be the most efficient for pelvic torque to obtain IPRM . I have used it with success with adolescent professional female dancers when the other IPRM methods did not succed to lock the PRM .

Nota : I have observed that the yoga buddha position naturally does not elicit IPRM .

2. Methods to IPRM at the skull level

During normal muscle testing examination :

a. Patient protrudes or retrudes the jaw

Nota : This is a procedure the patient many times does not seems to understand and which needs many explanations and demonstrations .

But is sometimes helpfull when it is desirable not to stess the pelvis .

b. Other cranial methods

I have not used any other method to lock the PRM at the skull level since I have not found to be efficient and convenient .

Nota : Naturally it is necessary to be aware of possible physiological modification taking place during the test and not related to IPRM .

Ex : Thigh TL during leg crossing,
Muscle challenge of the jaw during protrusion or retrusion

CONTRIBUTION OF THE IPRM TECHNIQUE

IPRM technique permits to uncover many many faults that could not previously be measured and found with the other usual A.K. procedures .

IPRM is helpfull in the diagnosis of :

- Hyper and hypotonic muscles
- Therapy Localization
- Acupuncture points
- Cranial faults
- Challenge
- Proprioception
- Etc... etc...

When interference evaluation cannot be found with the usual methods of muscle testing evaluation A.K. already possesses a number of systems designed to uncover imbalances that are not found " in the clear "

In my opinion the most valuable methods appears to be :

- Right and left brain technique (2)
- Cerebellum technique (3)

The following methods are also from time to time very helpfull :

- Melzack-Wall (4)
- Weight bearing (5)
- R N A (6)
- Thumb little finger opposition (7)
- Patient stops breathing for IO seconds (8)

When we compare the techniques mentioned above and the IPRM technique,IPRM stands as an extremely valuable diagnostic tool .

The spectrum IPRM reveals appears to be as widespread as the spectrum revealed by Right and Left brain or cerebellum techniques with which it does not overlap .

CONCLUSION The reason why some problem cases fail to respond despite a favorable prognosis is often times simply the result of inadequate measuring capacity and failure to solve the body language barrier .

IPRM should contribute to better speak the body language .

BIBLIOGRAPHY

(1) The Cranial Bowl SUTHERLAND D.O. I939
(2) Annual Research Manual I979 P.53 GOODHEART D.C.
(3) Monthly Research Tape N° 63 GOODHEART D.C
(4) Annual Research Manual I979 GOODHEART D.C.
(5) " " " I976 and I977 GOODHEART D.C.
(6) " " " I97I P.41 GOODHEART D.C.
(7) " " " I979 P.II2 GOODHEART D.C.
(8) " " " I973 ,I979 GOODHEART D.C.

THERAPY LOCALISATION

&

OPERATOR'S HAND CONTACT

Richard MELDENER D.C.

ABSTRACT : One condition under which operator's hand contact Therapy localisation should not be applied is when at the time of investigation there might be a chance for the operator to be neurologically disorganized .

Various opinions are spread around concerning the capacity of the operator to use his or her own hand to Therapy Localize (T.L.) to different areas of the patient's skin .

In I976 Dr GOODHEART (Ref. No I) discussing pulse point evaluation stated :

" it is possible for the Doctor to use his fingers and to T.L. to the wrist "

The same I976 year Dr WALTHER (Ref. No 2) generalized the above GOODHEART's observation and stated :

" T.L. in meridian therapy can be done by the Doctor placing his finger tips on the point to be T.L.

In I980 Dr HARRISON (Ref. No 3) observed during 292 test on 233 patients that T.L. using operator's hand contact was as valid and reliable as T.L. using patient's hand contact .

These observations were made under T.L. to different skin zones such as vertebrae , alarm points , cranial bones , sacroiliacs , T.M.J. , and organs .

I have myself been using T.L. diagnosis to any skin location and have enjoyed the time saving capacity of this system of investigation .

A few month ago I happen to find myself under stress and fatigue .

Throughout that day working in the office I made the observation that T.L. using my own hand suddenly did not work any more for me .

The information I was obtaining T.L. with my own hand did not match with the rest of the findings and had become suddenly non reliable .

However if at that time I was asking the patient to T.L. using his own hand the information obtained did correspond to other findings and appeared to me coherent .

This unusual observation I made that entire day was consistant on all the patients I happened to examine .

The following morning after a good night sleep , I attempted to observe the same phenomenon again , but I failed to reproduce it .
I could not succeed to observe it any one of the following days .

What had happened that special day of fatigue ?

Why did T.L. with my own hand did not work that day ?

I wondered if it could be due to the fact I was neurologically disorganized that day ?
I wondered If I was not transfering to the patient an imbalance I had myself and which was interfering with the T.L. reading ?

EXPERIMENT : Attempting to give an answer to these questions , I undertook the project to experimentally neurologically disorganize myself using two patterns of homolateral crawl exercise .

Immediatly after the exercise , I T.L. using my own hand to contact a skin location I knew to previously T.L. in the clear .
I obtained no reading , a strong indicator muscle remained strong despite my own hand T.L.

But if I repeated the two patterns of homolateral crawl exercise & if I T.L. the same area on the same patient that did T.L. in the clear , if that time I T.L. using the patient's hand and not mine a normal reading was obtained despite the fact I was neurologically disorganized , a strong indicator muscle became weak .

This experiment can be duplicated by anyone who has interes in T.L. using his own hand .

Step I. Eliminate any neurologic disorganization on the patient si

Step 2. Homolateral crawl yourself and T.L. with your own hand to a patient skin area you previously know to T.L. in the clea
Then T.L. the same spot using the patient's hand
Observe but do not treat .

Step 3. Cross crawl you self and T.L. with your own hand the same skin area than previously.
Then T.L. the same area with the patient's hand .
Observe but do not treat .

Step 4. Repeat step 1 and 2 several times .

CONCLUSION

According to this observation it appears that if an examinor happens to be neurologically disorganized :

If he T.L. to any skin area on the patient skin using his own hand , improper non reliable reading will be obtained .

If the same neurologically disorganized examinor T.L. using the patient's hand for contact , consistant and reliable reading will result .

REFERENCES

N. I : 1976 Research Manual P. 125 G. GOODHEART

N. 2 : Applied Kinesiology the Advanced Approach to Chiropractic P. I79 D. WALTHER 1976

N. 3 : Collected Papers of the Members of I.C.A.K. Summer I980 C.HARRISON P.263

DETOXIFICATION OF DENTAL AMALGAMS

Jerold I. Morantz, D.C.

ABSTRACT:

A study was performed to identify the existence of therapy localization to dental amalgam. The study consisted of 124 patients in a chiropractic practice. The detoxification technique, as presented by Carl Mestman, D.D.S. at the May, 1981, I.C.A.K. meeting, is the use of the north pole of a strip type magnet or a bar magnet, held against the maxilla or mandible and a transilluminator shined against the tooth. Out of 124 patients, the technique was applicable in four cases. On these four cases, therapy localization was abolished, but the directional challenge of the neurologic tooth still existed.

PROCEDURE:

Returning from the 1981 I.C.A.K. Dearborn meeting, I immediately started to screen a random cross section of patients which consisted of 124 patients: 71 females and 53 males. We started to therapy localize to dental amalgams using three different muscle groups on all 124 patients: pectoralis major clavicular, rectus femoris, and opponens muscles. Out of the 124 patients, 4 showed positive and all three muscle groups showed weak when therapy localizing to amalgam.

All four also showed directional challenge of the neurologic tooth. After employing the detoxification technique, all positive therapy localization to the dental amalgams had been abolished, but the directional challenge of the neurologic tooth still remained.

CONCLUSION:

Although my findings did not concur with Dr. Mestman's, the following observations are made. Therapy localization to a dental amalgam could have other implications other than neurologic tooth involvement. It should also be noted that the therapeutic approach between a chiropractic office utilizing Applied Kinesiology and a dental office utilizing Applied Kinesiology is assumed to be quite diverse.

STANDARD REFERENCE FORM

Use of the standard form in citing references provides clarity and uniformity. The Index Medicus examples of references are provided.

In scientific writing, references are given to inform readers. Often a "review of the literature" is the first part of a scientific paper. This is a condensation of other researchers' published findings to provide background information. References are made in the review and throughout the text to provide information, acknowledge the previous contributions of others, and lend credibility by demonstrating that the author is well informed on the subject being discussed.

References should be given clearly to enable readers to find the previously published material. There are various traditional styles (1)(2), which provide this clarity. The Council of Biology Editors recommends: "Follow the practice of the journal for which you are writing," (3) in citing reference material. Most journals are consistent throughout with the same style and many provide their format in each issue.

A 1979 meeting of the editors of many of the most prestigous journals produced a statement of "uniform requirements," which adopts the form used by the National Library of Medicine and used in Index Medicus. This standard form has been widely accepted and published. (4)(5) It's use provides clarity, efficiency and uniformity in scientific writing.

In the use of this form, references are numbered consecutively in the order in which they are first mentioned, using numbers in parenthesis. The same number is repeated if the reference is used again. The last page lists references in that numbered order. Only published references are used, although other written communications may be used if explained in parenthesis, such as "personal communication .," "in press," or "unpub-

lished observations" (which means a paper has been written and submitted, but not yet published).

Instructions for writing references are given by examples, as follows:

Journal

1. Standard Journal Article (List all authors when six or less; when seven or more, list only first three and add et al.)

   Solter NA, Wasserman SI, Austen KF. Cold urticaria: release into the circulation of histamine and eosinophilic chemotactic factor of anaphylaxis during cold challenge. N Engl J Med 1976; 294:687-90.

2. Corporate Author

   Committee on Enzymes of the Scandinavian Society for Clinical Chemistry and Clinical Psychology. Recommended method for the determination of gammaglutamyltransferase in blood. Scand J Clin Lab Invest 1976; 36:119-25.

   Anonymous. Epidemiology for primary health care. Int J Epidemiol 1976; 5:224-5.

Books and Other Monographs

3. Personal Author(s)

   Osler AG. Complement: mechanisms and functions. Englewood Cliffs: Prentice-Hall, 1976.

4. Corporate Author

   American Medical Association Department of Drugs. AMA drug evaluations. 3rd ed. Littleton: Publishing Sciences Group, 1977.

5. Editor, Compiler, Chairman as Author

   Rhodes AJ, Van Rooyen CE, comps. Textbook of virology: for students and practicioners of medicine and other health sciences. 5th ed. Baltimore: Williams & Wilkins, 1968.

6. Chapter in Book

Weinstein L, Swartz MN. Pathogenetic properties of invading microorganisms. In: Sodeman WA Jr, Sodeman WA, eds, Pathologic physiology: mechanisms of disease. Philadelphia: WB Saunders, 1974:457-72.

7. Agency Publication

National Center for Health Statistics. Acute conditions: incidence and associated disability, United States July 1968-1969. Rockville, Md.: National Center for Health Statistics, 1972. (Vital and health statistics. Series 10: Data from the National Health Survey, no. 69) (DHEW publication no. [HSM]72-1036).

Other Articles

8. Newspaper Article

Shaffer RA. Advances in chemistry are starting to unlock mysteries of the brain: discoveries could help cure alcoholism and insomnia, explain mental illness. Wall Street Journal 1977 Aug 12:1(col.1), 10(col.1).

9. Magazine Article

Rousche B. Annals of medicine: the Santa Claus culture. The New Yorker 1971 Sep 4:66-81.

These examples provide variations of the basic reference form for journals:

Author. Complete title. Name of J. year; volume number: pages.

and the basic reference for books:

Author. Title. edition. Place of publication: Publisher, year.

References

1. Turabian KL. A manual for writers of term papers, theses, and dissertations. 4th ed. Chicago, London: University of Chicago Press, 1973.
2. Lester JD. Writing research papers, a complete guide. 2nd ed. Glenview, Ill: Scott, Foresman and Company, 1976.
3. Committee on Form and Style of the Council of Biology Editors. CBE style manual. 3rd ed. Washington, D.C.: American Institute of Biological Sciences, 1972:9-11.
4. Editorial, International Steering Committee. Uniform requirements for manuscripts submitted to biomedical journals. Am Rev Respiratory Disease, 1979; 119:3-10.
5. Editorial, International Steering Committee. Uniform requirements for manuscripts submitted to biomedical journals. J Manip Physiol Ther, 1979; 2:227-34.

Structural Indicators - Diagnostic Chiropractic

by

Marc S. Rosen D.C.

Abstract: This paper reviews a variety of methods that monitor changes in body structure, a means of visualizing "body language". Included are, palpatory pain indicators, leg and arm length checks, and muscle testing.

The reader should be aware that no attempt will be made to offer a detailed discussion of clinical Chiropractic methods. The purpose of this paper is to briefly outline some valuable and interesting Chiropractic research findings. Thereby maintaining continued interest in the field of Chiropractic diagnosis.

The concept that structure governs function is a integral part of the principles upon which our profession is based. It does seem reasonable that, if structure governs function with structural change predisposing the body to functional change. Then we should be able to use structural change as an indicator for existing or potential functional change. This refers to changes within the cranium, spine, pelvis, extremities, viscera, or organ systems.

Chiropractic research has produced a number of technics that employ a structural change i.e. leg length differential, as a indicator for the location and direction of adjustive correction. In addition, the health of the viscera can be monitored through predictable structural change i.e. nodulation on the T.S. line, or in muscle hypotonus. The later producing the observable structural

change of a postural distortion.

As an outline of this topic I have divided structural indicators into three categories.

I. Palpatory Pain Indicators
II. Leg and Arm Length Checks
III. Muscle Tests - Hypo and Hypertonic

I. Palpatory Pain Indicators: this category includes

A. occipital fibers
B. trapezius nodules
C. temperal - sphenoidal line
D. Kotheimer's cervical complexes
E. S.O.T. indicators
F. miscellaneous

Discussion: The occipital fibers and T.S. line involve a structural change within the occipital aponeurosis and dural extension into the cranial sutural system, respectively. An occipital fiber and T.S. nodule relate to both spinal and visceral components. The developers, Dr.'s M.B. De Jarnette and M.L. Rees intended a palpatory analysis. However, with the advent of Applied Kinesiology these areas may be screened via therapy localization.

The trapezius areas as researched by De Jarnette involve musculo-skeletal changes only. It is a means of monitoring a structural change (palpable nodules within a muscle) as a reflection of functional change (alteration in a vertebral motor unit).

Dr. William Kotheimer has done a significant amount of research relating to palpatory pain areas at specific cervical levels known as the cervical complexes. These complexes are the result of muscular fixations affecting the pelvis. A detailed account of this research may be found in Kotheimer's book, Applied Chiropractic in Distortion Analysis and in his regular contributions to the Digest of Chiropractic Economics.

Many of the "indicators" utilized within Sacro-Occipital Technic (S.O.T.) are areas of pain to palpation. For example, pain at the styloid process is a indicator of a inferior sublux-ation of the 5th lumbar. Pain at the first rib is a valuable indicator of pelvic lesions. Thenar pad and thumb index finger web nodulation and pain reflect viscero-somatic reflexes of the gall bladder, pancreas, stomach, and heart. Applied Kinesiologists are familar with the S.O.T. U.M.S. L.L.L. findings in a category two. As previously stated, the occipital and trapezius areas are also S.O.T. "indicators" based on palpatory pain.

The miscellaneous category includes the areas inferior to the malleoli when there is a functional foot problem or tarsal tunnel syndrome. Certain cranial faults may be characterized by the presence of pain to palpation at cranial landmarks such as the supra-orbital foramina or asterion. Gait disturbance will be accompanied by marked pain at the appropriate meridan therapy treatment points on the dorsum of the foot.

II. Leg and Arm Length Checks - as researched by:

A. Truscott
B. Kotheimer
C. Malcolm
D. Gravel
E. Prill
F. Broeringmeyer

Discussion: It is a safe assumption to make that, along with spinal palpation, the determination of an inequality in leg length is one of the most fundamental analytical procedures within clinical Chiropractic.

There have been many researchers who have discussed spinal, pelvic, and muscular events capable of affecting a change in leg length (De Jarnette, Goodheart, Thompson, Truscott, Prill, Gravel, Kotheimer, Malcolm, Janse, Illi, Lee & Fuhr etc.)

De Jarnette in his 1952 Sacro-Occipital Technic of Chiropractic defines the pelvic mechanics productive of both a long and short leg. This was the basis for the U.M.S. L.L.L. lesion.

In 1942 at the National College of Chiropractic, Dr.'s Illi and Janse embarked on a five year study of spinal and pelvic biomechanics. They too identified the events that gave rise to a measurable difference in leg length.

Certainly, our collective clinical experience establishes the fact that there are a multitude of biomechanical factors affecting leg length. What is perhaps less accepted and more controversial is the use of leg length as a "indicator" for functional disturbance.

Dr. Leon Truscott based his adjustive approach on observable leg length changes that were revealed via comparison at the adductor tubercles. Occipital and cervical segments were "challenged" by way of specific superficial contacts followed by the leg length analysis. Dr. Truscott exercised great care in the proper placement and preparation of both the doctor and the patient. Insulating rubber bands surrounded the patients extremities and face, metal removed from the doctors person etc.

Dr. William Kotheimer employs a leg length check whereby horizontal lines are marked on the calf at a measured distance

superior to the calcaneous. Proper patient placement is also vital. The patient's A.S.I.S. is positioned just superior to the pelvic section, the foot rest elevated so that the legs are in ten degrees of flexion. Following Kotheimer's "challenge" and "touch response" procedures the equality of the leg markings are noted. Of academic interest is the fact that Kotheimer does not find evidence of the rebound effect when challenging.

Dr. George Malcolm uses a heel to buttock test. One heel will approach the buttock more than the other after an area of subluxation is rubbed as a "challenge". The bulk of Malcolm's research has been concerned with food sensitivities and their spinal reaction. A reaction of subluxation to a given food element involves the spine as a "shock organ" and is evident by a positive Malcolm leg test.

Dr's Gravel,Pierre and Armand advise leg length testing with the patient prone. Superior pressure is applied at the calcaneous. The heels of the shoes or the malleoli are noted for equality. They discuss a polarity type technic whereby positive and negative fingers are applied to cranial, cervical, and pelvic reflexes with a change in leg length considered a positive indicator.

Dr. Clarence Prill after introduction to the Toftness technic began a research program that included measurements of both arm and leg length. He was able to identify many distortion patterns and possible allergic influences with the aid of arm/leg checks. Unique to Prills approach are a series of resisted bilateral movements of the upper and lower extremities. Which, when productive

of an inequality in leg or arm length indicates a distortion pattern that can be verified by a "challenge". The "challenge" uses leg/arm length as a monitor. Prill also employs a stimulating or inhibitory type contact to organ reflexes on the anterior surface of the body. A change in arm/leg length indicates an organ in hypo or hyper function. To clarify one point, arm length refers to over head arm length in the same mannor as De Jarnette tests for a hypertonic psoas.

In the field of biomagnetics, Dr. Richard Broeringmeyer uses a standard supine leg length check after application of north or south pole energy to various organ reflexes. The response, depending on which pole used, indicates an organ that is over or under in it's function. This was presented to I.C.A.K. with a kinesiological correlation by Dr. Mark Terry at the spring meeting 1980.

Dr. Gleeson discussed the correlation between muscle weakness and leg length checks in a paper included in the collected papers spring 1980.

III. Muscle Tests - hypo & hypertonic

A. Goodheart - Applied Kinesiology
B. Van Dusen - Gravitational Approach

Discussion: Muscle testing, within the framework of Applied Kinesiology, is responsible for a renaissance in the healing arts. Words are not an adequate means of expressing the true impact of this incredible diagnostic tool. Nor can they express our gratitude to Dr. Goodheart.

By dealing with the hypotonic muscle and it's influence on posture, the structure governs function concept can become an image before our clinical eyes. The patient who exhibits the military chest out shoulders back posture, characteristic of bilaterally weak pectoralis major clavicular, is showing us the structural change that follows a functional change in gastric secretion (a or hypochlorhydria) and/or cranial mobility (temporal bulge). The hypoglycemic patient with a functional pancreatic problem will exhibit a structural change i.e. a high shoulder, weak latissimus dorsi. The patient whose posture, when inspected from the lateral, exhibits a chin down - neck extensor weakness attitide is communicating a functional change within the lumbar spine i.e. fixation. So, through Goodheart's observation that it was the hypotonic muscle that was responsible for a postural distortion, and his subsequent muscle-organ relationships, we were literally able to visualize functional change.

In contrast to Applied Kinesiology, Dr. L.G. Van Dusen basis his "Gravitational Approach" on a "palpatory myotonic examination" of hypertonic muscles. Van Dusen uses a flat hand gliding motion across the belly of the muscle, then palpates the origin and insertion for pain. The direction of correction is based on the direction of pull of the hypertonic fibers. The sucess of the adjustment is determined by noting the release of the hypertonicity and reduction in pain at the origin or insertion. The antagonist muscle will then become a hypertonic compensation to maintain the adjustment. For example, if the sartorius palpates

hypertonic across it's belly and at it's origin, the ilium will subluxate anterior, inferior, and medial. Van Dusen has devised specialized adjustive procedures that, in this case, would bring the ilium posterior, superior, and lateral. The sartorius pain would diminish with the muscle that holds the ilium in the direction of correction now palpable as hypertonic. In this case the gluteus medius.

In conclusion, we have reviewed three categories of structural indicators. Each reflecting a "body language" communication of functional change. To me this is one of the most challenging aspects of our field.

Applied Kinesiology has allowed us the privilege of correlating diverse Chiropractic concepts. Investigation of the various methods that I have mentioned may prove to be worthwhile research material.

REFERENCES

De Jarnette, Major Bertrand, 1979, Sacro-Occipital Technic Nebraska City, Nebraska

Walther, David, 1976, Applied Kinesiology the Advanced Approach in Chiropractic, Systems D.C. Pueblo, Colo.

Rees, M.L., Temporal-Sphenoidal and Bloodless Surgery, Chautauqua County Health and Research Clinc Inc.

Gravel, Pierre and Armand, 1966, Integrated Chiropractic Methods Montreal

Kotheimer, William, 1976, Applied Chiropractic in Distortion Analysis, Dorance & Co., Philadelphia, Penn.

Granville, Frisbie, 1976, Truscott System of Angular Analysis and Controlled Adjusting, the Essence of Chiropractic 3rd edition Neyenesch Printers Inc., San Diego, Calf.

Van Dusen, L.G. 1968, Chiropractic Relationship to Gravitational Force, Sodus, N.Y.

Broegingmeyer, Richard, 1976, Class Notes on The Magnetic Age, Exposition Press Inc., Hicksville, N.Y.

Malcolm, George, 1972, There is a New Discovery in Chiropractic, Kent Publishers, Toronto, Canada

Prill, Clarence, 1980, Researching Chiropractic Phenomenon, Pantagraph Printing, Bloomington, Ill.

Janse, Joseph, 1976, Principles and Practice of Chiropractic, an Anthology, edited R.W. Hildebrant N.C.C., Lombard, Ill.

references (cont.)

Schaefer, R.C. 1977, Chiropractic Health Care, Foundation for Chiropractic Education and Research

Schafer, R.C. editor, 1980, Chiropractic Physical and Spinal Diagnosis, Associated Chiropractic Academic Press, Oklahoma City, Oklahoma

Haldeman, Scott, 1979, Modern Developments in the Principles and Practice of Chiropractic, Appleton-Crofts-Century, N.Y.

The Occipital Fibers
A Diagnostic Tool for the Applied Kinesiologist

By Marc S. Rosen D.C.

Abstract: A discussion of Dr. M.B. De Jarnette's occipital fibers, including the history of their development, mechanism of formation, method of palpation, and associated spinal lesions. The significance to A.K. is a statement of the observations and findings of Dr. Stanley Wieczorek.

I have always been a student of Chiropractic history. Granted, our eighty-six years of professional existence has been characterized by one controversy after another. However, our history does reveal many major developments in the field of structural diagnosis. We can truely be proud of the fact that Chiropractic research has produced a non-invasive diagnostic approach without the hazard of iatrogenic complication. Perhaps the most significant and certainly one of the most fascinating are the occipital fibers.

As early as 1928 Dr. M.B. De Jarnette recorded the experience of appling pressure to a patients third left sacral foramina, an application that instantly resulted in a marked pain over the patients left occiput. Palpation of the painful occiput revealed an extremely large and painful fiber. Firm pressure directed to this fiber proved to be an effective means of alleviating the occipital pain. On a future office visit, it was noted that the patients occipital cephalgia was controlled by an application of cold to the third sacral foramina. (note: at this time De Jarnette was investigating vasomotors and their control using heat or cold) This incident began what was to be many years of investigation

into the nature of these fibrous areas on the occiput. Dr. De Jarnette observed that the fibers differed between patients who were acute and those who were chronically ill. Pain of spinal and of visceral origin manifested fibers of different character. During 1930 he began checking these fibers prior to every adjustment. It was found that some adjustments released the painful character of the fiber, some adjustments increased that pain. It was at this time that De Jarnette noted that an order existed to these fibers. The next phase of research invclved observing the change in the fibers that followed an adjustive thrust applied to a specific vertebrae opposite the direction of correction. In other words, appling a traumatic thrust rather than a corrective one. Specific vertebrae correlated with specific fibers, and that fiber did become tense when it's corresponding vertebrae was stressed. The fiber released it's tension when a corrective thrust was applied. There was a predictable reaction at a predictable occipital area that followed a specific directional spinal stress. When an upper dorsal segment was insulted the fiber formed on the lateral portion of the occiput. When a lower lumbar was likewise insulted the fiber formation was more medial. Through continued research and observation Dr. De Jarnette was able to establish the order of the occipital fibers, and chart their reflex relationship to spinal and visceral components. One phase of this research involved an experimentally induced gastric irritation by non-smoking subjects attempt at smoking a cigar. The spinal and occipital findings were consistently occipital area three - dorsl five (gastric). It was

in 1931 that De Jarnette published his findings regarding an intercommunicating reflex relationship between sacral, lumbar, thoracic, and cervical segments and their reflection into an occipital area. For example; occipital area 4 relates to cervical 4, dorsal 6, lumbar 2, sacral 2.

I am sure that by now the reader can appreciate the depth of this type of research. The reference material does contain more on this bit of Chiropractic history. Our profession and the whole of the healing arts owe a great deal to Dr. De Jarnette for this clinical insight.

Now that we have stated how the occipital fibers were discovered, let us turn our attention to their clinical use.

There is a very detailed neurology of the mechanism by which occipital fibers are formed. For the readers whose interest lies in this area please refer to Dr. De Jarnette's yearly S.C.T. texts. We will touch on this mechanism briefly:

The occipital fibers are roughened fibrous areas that form the aponeuroses for the attachment of the occipital-cervical muscles. All the ascending and descending motor and sensory fibers must pass through the cervical area of the spinal cord. An area that De Jarnette describes as a point of neural congestion. Any abnormality affecting thoracic, lumbar, or sacral nerve roots will excite a specific cervical level. As stated above, the occipital bone offers an aponeuroses for attachment of the occipital-cervical muscles. The occipital fiber forms when the cervical excitement reflexly affects the G.T.O.'s present at the occipital aponeuroses.

A stimulus of traumatic or disease origin affects the neural elements at a spinal segment. It's associated cervical is excited reflexly affecting the occipital-cervical musculature at the G.T.O. It is important to note that the resulting fiber is never considered a cause, only an effect. It is a defensive reaction to a neural insult and a monitor of that event.

Palpation of the occipital fibers is best accomplished with the patient prone, the doctor seated at the head of the table facing footward. Sitting palpation is also a possibility, the patients forehead rests on the doctors abdomen. Palpation must be done with the finger-tips, not the pads. The finger must "pluck" the fiber or pull over it, in the same manner as one would finger pick a banjo or guitar. If you press the patients ears against the cranium and let your fingers slide off of the top of the ear onto the skull you will feel a V shaped notch. This is the occipital mastoid suture and a major landmark as just medial to it you will palpate occipital area one. Between this area and the E.O.P. you will palpate seven normal fibers. Fourteen total, seven on the right and seven left. You may take a ruler and divide the distance between the occipital mastoid suture and the E.O.P. into seven equal parts, this will give you a point of reference. When palpating keep your elbows away from your body so as to maintain your palpating fingers vertical or parallel to the fiber. Another important aspect of this palpation is that you must hold the tissues taught with your middle fingers, then palpate that area with the index fingers. Remember to pluck the fiber.

You literally walk your fingers across the occiput.

What you will have palpated so far is refered to as line one. There are three occipital lines, the fourteen fibers or areas extend vertically through three horizontal lines spaced approximately ¼" apart. You always identify the swollen or reactive fiber by palpating line one.

Dr. De Jarnette has identified a series of three positional changes that occur at the vertebral motor units. The first direction that a segment will subluxate is anterior-inferior, this is refering to the spinous process. A position that you may have seen refered to a "kissing spinous". It is characterized by exquisite pain to pressure over the spinous process. This subluxation produces sufficient meningeal irritation so as to create an imbalance in cerebral spinal fluid pressure and flow between the involved segment and it's corresponding cervical. Which, as you now know reflexes to the occiput producing a line one fiber. Each cervical reflexes to the occipital area of the same number, so C 1 affects occipital one, C 2 occipital two etc. (occipital one is located just medial to the mastoid V, occipital seven (cervical 7) is inside the E.O.P.) Therefore if dorsal three should subluxate anterior-inferior creating an impediment to C.S.F. flow and pressure it's corresponding cervical, in this case C 2, would be excited reflexing to occipital area two on line one.

If the above situation exists long enough without a proper structural correction, the C.S.F. disturbance will establish a viscero-somatic reflex with the viscera supplied by that spinal

segment. The vertebrae will then subluxate in a rotary fashion, transverse process right or left, or if you prefer spinous right or left. A nodule forms on the transverse process that is painful to palpation. This nodule is reflected on the occiput by the extension of the line one fiber inferior into line two and the formation of a nodule in that fiber. This feels like a bb under the skin. A line two visceral lesion, rotation subluxation, that persists without proper structural correction will eventually involve pathological change in that organ system. The vertebrae will subluxate inferior, refering to the transverse, a tippage subluxation if you will. This will reflect on the occiput by a line two nodulation extending the swollen fiber inferior onto line three. In a line three situation the spinous process is painful to lateral pressure right or left. To review; line one concerns meningeal C.S.F. change due to an ant.-inf. subluxation, line two involves a viscero-somatic reflex with a rotation of the spinal segment, line three is the final stage or pathology and a inferior or tippage subluxation.

Within the quidelines of S.C.T. there are seperate methods for dealing with each lesion that was described. Please consult the reference material if you are so moved.

The material that follows covers the observations and research findings of Dr. Stanley Wieczorek, as presented at W.I.T. seminars a 100 hour modular course offered in Rochester N.Y.

It is considered a standard procedure to palpate the occipital fibers and lines on every patient on every office visit. Following

the removal of a variety of faults that Dr. Wieczorek labels "confusions" (switching, lateral occiput, lateral atlas and/or axis, ocular lock, scanning lock, hyoid, inferior occiput and sacrum, upper cervical fixation, limbic fixation) the patient is therapy localized for pelvic categories. Following category correction via the block procedures the occipital lines are palpated. If there is no evidence of a "confusion" or category then proceed directly to occipital palpation. Of course a postural analysis and first rib head palpation preceded any of the above.

While palpating the occiput observe:

1) the presence of <u>multiple occipital fibers</u>, this is an indicator of a diaphragm fault. The diaphragm being the mobilizer of acupuncture energy within the body, has the capability of affecting multiple meridians and/or organ systems. Multiple organ system involvement due to a diaphragm fault will produce multiple nodulations on line two. It is well known that an ileo-cecal valve syndrome is productive of a devastating toxemia, this will also reflect as multiple nodulation as literally no organ system can escape systemic toxemia.

2) the presence of <u>bilateral occipital fibers</u> within the same area, any bilateral finding is indicative of fixation. Bilateral involvement of the occipital areas relating to T 12, L1 (area 2 & 3) indicates a thoraco-lumbar fixation which is also evidence of a diaphragm fault. When you find a bilateral fiber test the associated muscles to confirm fixation in that spinal region.

3) that there is a <u>reciprocal relationship</u> between sacral, lumbar, thoracic, and cervical segments within a given occipital area or reflex. This principle refers to both subluxations and fixations. Refering to a chart of the occipital fibers note, for example, that occipital area four relates to and involves cervical four, dorsal six, lumbar two, and sacral two. If you should palpate a bilateral area four then a fixation complex would be elicited at the areas within area four. Upon initial exam you may not find fixations at all those levels, only one may be evident. However, it is of interest to realize that when one fixation complex is reduced it brings out another within it's reciprocal and also within it's lovett relationship. In other words, if there is no evidence of fixation at C 4 or in the lower cervical, but there is positive challenge and associated muscle weakness indicating a fixation complex at L 2, adjust and then re-evaluate the lower cervicals. Invariably it will now be evident by challenge and muscle weakness. The same is true for subluxations, however Dr. Wieczorek has identified a "predictability" for these reciprocal subluxations. This was presented to I.C.A.K. in a paper bearing that title. The lumbar was found to subluxate spinous right or left, the thoracic inferior right or left, the cervical follows it's lovett, and the sacral segment is challenged with a clock or counter clockwise torque.

4) what organ systems are involved. Let this be your quide for continued A.K. examination. The occipital area informs the doctor that the neural element of the five factors of the I.V.F.

is involved for a given muscle organ relationship. This is a short cut means of knowing which muscles to test and possibly what other screening tests or faults to evaluate by A.K. diagnosis. For example, the patient exhibits an occipital area four dorsal six, the associated organ is the pancreas and the latissimus dorsi should certainly be tested. In this case the hypoglycemia - diabetic straight leg screening test would be indicated along with attention to dietary factors etc. (see collected papers summer 1980 pg. 81) Along this line Wieczorek has correlated an occipital four dorsal six and sometimes occipital five dorsal seven with a thymus problem. An ileo-cecal valve syndrome is often the perpetrator of a occipital six dorsal eight or liver.

It is also important to note that at least two organs, sometimes three exists within a occipital reflex. Therefore when palpating the T.S. line multiple nodules will be evident.

In conclusion, the occipital fibers and lines are a classic in Chiropractic research. The information revealed has a definite time saving ability for the applied kinesiologist as you are able to discover the area or areas of major neural insult and evaluate what stage they are in. The doctors clinical efforts can then revolve around priority problems rather than treating manifestations of a major fault that remains over looked. Dr. Wieczorek's ability to bring B.O.T. methods within the framework of A.K. continues to enhance all that we do in Chiropractic.

REFERENCES

De Jarnette, Major Bertrand, 1979, Sacro-Occipital Technic, Nebraska City, Nebraska

De Jarnette, Major Bertrand, 1967, The Philosophy, Art, and Science of Sacro-Occipital Technic, Nebraska City, Nebraska

De Jarnette, Major Bertrand, 1958, The History of Sacro-Occipital Technic, Press Printing Co., Nebraska City, Nebraska

De Jarnette, Major Bertrand, 1952, Sacro-Occipital Technic of Chiropractic, Nebraska City, Nebraska

Wieczorek, Stanley, 1979-81, Seminar Notes, W.I.T. Seminars, Rochester, N.Y.

CHALLENGING FOR DIAPHRAGM WEAKNESS

By

Randal Schaetzke, D. C.

ABSTRACT: Patients showing diaphragm weakness and or hiatal hernia envolvement via the standard A. K. method may still have diaphragm envolvements after the usual corrections are made.

There are two types of quiet inspiration, diaphragmatic and costal. Diaphragmatic breathing is also called abdominal because of the visible contraction of the diaphragm by the protrusion of the abdominal wall. In costal breathing, very little abdominal movement is observed, but thoracic expansion and elevation is.

In this report all observations were made in the supine position, and while the patient was at rest.

I have observed that patients who frequently engaged in strenuous exercise almost always used abdominal breathing. These patients also rarely had any diaphragm or hiatal hernia envolvements. In contrast, those patients having recurring hiatal hernia or diaphragm envolvement usually employed costal breathing.

After making the usual corrections for hiatal hernia and diaphragm envolvements on those patients with costal breathing, I attempted to challenge the diaphragm further. I did this by placing my forearm on the lower six ribs on one side and my hand on the opposite six ribs. (Partial origin of diaphragm fibers.) The patient was then instructed to take a deep breath in while I held firmly against movement of the lower rib cage. I then tested a convenient muscle such as the serratus anticus. The serratus anticus would then weaken. Therapy localization by the patient to any of the five I. V. F. factors occassionally showed position and were treated.

The only method I found that would abolish this challenge was gentle but quick depression of the lower rib cage to a depth of ½" and quickly releasing. This was repeated five times.

Abdominal breathing can be noticeably improved by this method, but usually practice in abdominal breathing is needed.

CONCLUSION: This method of challenging and correcting the diaphragm has helped reduce the recurrence of hiatal hernia in many patients. Exercising the diaphragm by abdominal breathing exercises is of great help and must be relearned by many. I suspect there is a nutritional aspect to the diaphragm much as there is in the facial flush and anaerobic-aerobic techniques. This area needs further investigation.

BIBLIOGRAPHY

1. John H. Warfel, Ph.D., Head Neck and Trunk, pg. 72 4th Edition, Lea and Febiger.

2. Walther, David, Applied Kinesiology, the Advanced Approach to Chiropractic.

3. Gayton, M. D., Medical Physiology, W. B. Saunders Co.

4. Gray, Henry, Anatomy of the Human Body, Lea and Febiger.

CHALLENGING ANTERIOR DORSALS

By

Randal Schaetzke, D.C.

ABSTRACT: An attempt is made to identify anterior dorsal vertebra by challenging the surrounding tissues.

DISCUSSION: Anterior dorsal vertebra exist for many reasons, usually as a compensatory factor. Contributing factors are listed as follows:

1. Chronic poor posture
2. Consistent use of antagonist muscle groups to those supporting the dorsal area.
3. Trauma to the dorsal area

Mechanisms that contribute to chronic anterior dorsal vertebra:

1. Reactive muscles:

   Rhomboid to supraspinatus
   Rhomboid to deltoid
   Rhomboid to pectoralis (all divisions)

2. Facial flush needed by dorsal supporting musculature
3. Postural and gait mechanisms
4. Pelvic imbalances
5. Anaerobic-aerobic muscle activity
6. T. M. J. Envolvement

The above lists are not all inclusive, but are very common, and correction of all factors involved is necessary.

Anterior dorsal vertebra can be identified by simple observation, palpation and challenging. The method I have used with a high percentage of accuracy involves palpation and challenging.

First, the suspected area is palpated for tenderness and a loss of normal dorsal curve. This usually exists with several vertebra in a row. To challenge the dorsal I place my thumb one inch to the side of the spinous process and my index finger one inch on the opposite side. I then quickly approximate my thumb and index finger together, almost snapping them together. This is done in the suspected area, followed by testing an intact muscle. This method can also be used for anterior lumbar vertebra. The anterior vertebra are then adjusted in the usual manner. I usually have the patient with anterior dorsals lie prone on a rolled up towel (3" diameter) placed under the sternum for ten minutes a day for three weeks.

CONCLUSION: I feel this challenge is actually to the skin proprioceptors. The loss of normal posterior dorsal curve places a stretch on the skin which may further inhibit the supporting musculature. Correction of the skin receptors is also made.

R E F E R E N C E

1. D. W. Walter, "Applied Kinesiology Vol. I," Systems, D. C.

RETROGRADE LYMPHATIC BLOCKAGE AND THE PECTORAL STRETCH TECHNIQUE : AN AK INDICATOR FOR IRON

Walter H. Schmitt, Jr., D.C.

Abstract: Iron, and occasionally manganese, have been found to correct retrograde lymphatic blockage and the pectoral stretch technique, particularly in recurrence of these problems.

The presence of retrograde lymphatic drainage problems and accompanying pectoral stretch technique has been well discussed by Goodheart in his 1979 Manual.[1] This technique has given us a great tool in analyzing many of our difficult patients and in turning the corner on a whole segment of our chronic patient population. However, a number of these patients who have pectoral stretch technique, complete with origin and insertion to pectoralis minor muscle, pectoralis minor neurolymphatic reflex, and adjustment of the upper 4 ribs bilaterally and lower 4 ribs bilaterally as indicated by challenge, still show recurrence of these problems in retrograde position, in spite of the fact that they have been adequately treated. Goodheart[1] has suggested that the use of vitamin A is helpful in maintaining these corrections, but this is not universally the case.

Two serendipetous findings led me to investigation of the relationship of an iron requirement in retrograde lymphatic and pectoral stretch problems. Retrograde lymphatic activity should be present in patients who are normal. In many patients, however, tilting the head lower than the feet will cause a weakening of many, sometimes all, muscles of the body. This

particular weakening can be neutralized by the elevation of one (or both) arms, extended over the head. Further, it was found that these same patients, when lying supine, on the level, would show a weakness to challenge upon stretching the pectoral girdle, by grabbing the axillary spaces bilaterally, and stretching cephal-ward, immediately testing indicator muscles afterward. Both the pectoral stretch challenge and the retrograde weakening of muscles could be neutralized after adequate therapy (as outlined above) was rendered. However, in some patients, the pectoral stretch challenge and the retrograde weakening of muscles would recur, accompanied by a recurrence of the patient's symptoms.

In February, 1980, I was visiting the home of Dr. and Mrs. James Taylor, in Colonial Heights, Virginia. At about 2 A.M., I was checking a number of factors on Dr. Taylor regarding right brain and left brain activity. I had been monitoring the pectoral stretch challenge as well, but as yet had not corrected this using the pectoral stretch technique, pectoralis minor neuro-lymphatic activity, etc. The right brain/left brain activity indicated the need for iron. Upon giving a capsule of iron to Dr. Taylor, the right brain/left brain activity was neutralized, and when the pectoral stretch challenge was re-initiated, it had spontaneously gone away. This was an unusual occurrence, but at 2:00 in the morning, it did no more than move to the back of my mind, to be stored for potential future recall.

Several weeks later, in Florida, a doctor's child was being treated at a seminar, and it was observed that the child showed several indications for iron requirement. The child was given iron

and the muscle testing requirements for iron were neutralized. Further investigation included pectoral stretch challenge technique. When the pectoral stretch challenge was negative, the child's father, a chiropractor, noted, "That is the first time I have ever seen that not be present in my boy."

Correlating these two events led to the investigation of the relationship between iron and the pectoral stretch challenge and retrograde lymphatic problems. On literally scores of patients we have observed that pectoral stretch challenge and/or retrograde lymphatic blockage would be neutralized by placing a source of iron in the patient's mouth. Although accurate numbers have not been kept on this approach, well over 90% of the patients with retrograde lymphatic blockage and/or pectoral stretch challenge have shown a response to iron neutralizing this condition.

The neurolymphatic reflex for the pectoralis minor and origin/insertion to the pectoralis minor muscles, and, if necessary, as indicated by challenge, the adjustment of the upper 4 and/or lower 4 ribs, bilaterally, was performed on these patients also. However, many of these patients had had this problem corrected previously, with a recurrence of the pattern. The need for iron was not present in a handful of patients, but the percentage of these was quite small. In some of the patients, the response for iron was present and the patient was placed on an iron supplement, yet the pectoral stretch challenge and the retrograde lymphatic blockage recurred anyway. These patients were further investigated and found to require manganese. Manganese and iron are sometimes related in the biochemistry of the patient.

These patients who required manganese in addition to the iron went on to recovery with no recurrence of the pectoral stretch or retrograde lymphatic problems. A very small percentage (less than 5 cases) have not shown response to any nutrient and have only required standard manipulation of the pectoral stretch reflexes and the retrograde lymphatic treatment for correction of these problems.

Complete blood counts with differentials were performed on many of these patients who had shown the response to iron. Many of these CBC's showed a normochromic, normocytic anemia pattern, indicative of a need for more iron, as discussed in an accompanying paper in these Collected Papers.[2]

Initially it was thought that there may be an aerobic muscle testing weakness present in all of these patients somewhere in the pectoral girdle, which would cause the pectoral stretch and retrograde lymphatic problems to occur and recur by allowing the pectoral girdle to depress as it does in these problems. However, we have not been able at this point to identify which, if any, of these muscles are consistently weak on aerobic testing. No particular muscle testing pattern whatsoever has been found which correlated with this. However, a number of other doctors to whom this material was personally communicated have found a similar pattern of iron neutralizing of the pectoral stretch and retrograde lymphatic challenge. A statistical survey of this phenomenon is definitely in order, as is further investigation as to the cause of its origin. I would appreciate any feedback you have from anyone wishing to work together on such a project.

RETROGRADE LYMPHATIC BLOCKAGE AND THE PECTORAL STRETCH TECHNIQUE :

AN AK INDICATOR FOR IRON

REFERENCES

[1]Goodheart, George J., Applied Kinesiology 1979 Workshop Procedure Manual, privately published, Detroit, 1979.

[2]Schmitt, Walter H., Jr., "Iron, Vitamin B-12 and Folic Acid : A Correlation of Laboratory Findings and AK Findings," ICAK COLLECTED PAPERS, Winter Meeting, 1981, privately published, 1981.

GALL BLADDER PAIN

Eliminating Positive Murphy's Sign with Ligament Interlink Technique and Other Techniques

Walter H. Schmitt, Jr., D.C.

Abstract: Gall bladder symptoms and signs, particularly the Murphy's sign, are discussed and treatment patterns reviewed. The ligament interlink technique, based on popliteus muscle and knee involvement, is advanced as the most effective measure at reducing active gall bladder pain. Other manipulative therapies, AK pain control therapy, dietary changes, and nutritional supplementation are also mentioned as helpful in treatment.

Pain to sub-costal pressure on the upper right quadrant and muscle guarding, aggravated by inspiration, has long been associated with gall bladder dysfunction. This sign, known as the "Murphy's Sign," is a good indicator that the patient is suffering from some type of gall bladder disorder. These patients will occasionally complain of local pain in the upper right quadrant which occurs shortly after eating. Sometimes this type of pain creates a great deal of discomfort between 11:00 in the evening and 1:00 in the morning which is the peak time for the acupuncture gall bladder meridian.

GALL BLADDER SYMPTOMS

Other symptoms of gall bladder disturbance are: bloating after meals, especially a half hour to an hour after the meal; indigestion; heartburn; all of which tend to be exacerbated by fatty meals within a half hour or so following the meal. The classic picture of the person with gall bladder is: female, fair, fat and fortyish, and with what we know in applied kinesiology

of the relationship of the gall bladder to the popliteus, we might also add a common symptom, knee pain. When patients complain of digestive disturbances or sometimes just localized pain in the upper right quadrant, or (as the gall bladder has been referred to as "The Great Mimic") pain anywhere in the digestive system; or bilious taste in the mouth; or violent regurgitation, especially with green-tinged vomit; or chest pain, often being mistaken as a heart attack pain : all of these are symptoms of gall bladder disturbance. Patients with gall bladder involvements are encountered quite often, although they are easy to overlook and/or misdiagnose.

The gall bladder is actually an extension of the liver, and a storage sac for bile so that it may be saved up for dumping into the small intestine at the time of a meal to help emulsify dietary fats and oils and make them available for absorption.

Many patients with gall bladder disturbances have learned to avoid eating fried foods and fatty foods, which is a common restriction placed on these patients. Chocolate, coffee, and refined carbohydrates are also very hard on these patients. Some patients have eliminated some of the early digestive disturbances which foretell the onset of gall bladder problems by simply changing their diets. However, they may still have an irritation to the gall bladder system, which is evidenced by a popliteus weakness. Many times they will also have upper right quadrant pain to your pressure; that is, the positive Murphy's Sign, of which they are not aware unless you elicit the sign.

TREATMENT OF ACUTE GALL BLADDER

The eradication of the Murphy's Sign used to be a great problem. Gall bladder patients used to be some of the more

difficult patients to handle. They frequently have flare-ups and attacks after dietary indiscretion, usually between 11:00 and 1:00 in the morning, violently vomiting green bilious material, with excruciating pain in their chest, or a variety of other symptoms which are very uncomfortable and worrisome.

The standard natural therapy emergency procedure for gall bladder includes the use of a cold towel over the upper right quadrant, with a sipping of a very bland hot liquid, such as hot water with a little lemon juice in it or warm Canada Dry Ginger Ale (no coffee or tea!). Also pounding with the patient's own fist over the lower ribs on the anterior right side (over the liver-gall bladder area). This, accompanied by a series of enemas to clean out the bowel, is the therapy which we render over the phone in the middle of the night to these patients.

Bowel detoxification is important in gall bladder patients because of the relationship of the bowel to the liver. The liver's major job, in the simplest terms, is to detoxify the bowel. The liver, if overburdened by the bowel, gets overloaded with toxins filtered out from the portal circulation, can not make a pure quality of bile. Bile is a route of elimination (via the GI tract) for toxins which the liver filters out of the blood stream. This "unpure" or dirty bile, which must be stored in the gall bladder, can cause increased gall bladder irritation. For this reason the use of enemas to clean out the colon is recommended whenever there is an acute (or chronic, for that matter) gall bladder problem. The use of the neurolymphatic at the fifth intercostal space on the right for the popliteus and gall bladder is also useful, as is adjusting the fourth thoracic, and as was referred to in the 1940's, by Dr. Janse in his book on the digestive system[1], the eleventh thoracic. We now

know that the 11th thoracic is the acupuncture-associated point for the gall bladder meridian. With the advent of our understanding of acupuncture, the use of AK pain control technique[2] has also been useful in eliminating the positive signs of acute gall bladder symptoms, particularly the Murphy's Sign, which is our best indicator.

POSITIVE MURPHY'S SIGN PAIN

The eradication of Murphy's Sign pain in the office has been something which has not been easily accomplished in the past. More recently, we frequently find patients who come in with a positive Murphy's Sign which responds somewhat to the aforementioned measures, but especially the AK acupuncture-pulse diagnosis pain control technique. Oftentimes, but by no means consistently, the gall bladder meridian shows up in pulse diagnosis for the pain control technique. This is verified by popliteus muscle weakness; and tapping of the gall bladder tonification point (GB-43) on the side of involvement results in adequate reduction in Murphy's Sign discomfort.

With our increasing understanding of the acupuncture system, the use of pain control technique has been increasingly useful in decreasing positive signs of acute gall bladder symptoms, particularly the Murphy's Sign, and other associated abdominal pain. However, it is not uncommon using these procedures to only be able to achieve 20% to 30% reduction of Murphy's Sign pain in the office in a large number of patients, far less of a response than what we normally expect in applied kinesiology.

ORGAN-MUSCLE RELATIONSHIPS

The fact that organs and muscles are intimately associated has been adequately demonstrated over and over again since first introduced in 1965 by Goodheart. The fact that the muscular system is a reflection of the visceral system through viscero-somatic reflex pathways has been documented physiologically, as well as clinically.[3]

In 1974, Goodheart expanded upon the relationship of the teres minor muscle and the thyroid gland, that not only did thyroid function affect the teres minor, but also that teres minor affected thyroid function.[4] For the first time we found that the muscular system actually had a somato-visceral feedback into the visceral system which could affect changes in organ function. This has been demonstrated repeatedly by the fascial sheath stretching technique (fascial flushing) of the teres minor, causing dramatic changes in patients' temperatures during performance of the technique. Based on these principles, the idea that gall bladder pain may somehow be specifically related to popliteus muscle weakness caused a direction of investigation in some of these difficult patients who showed only minimal response patterns to all previously known natural therapies directed toward eliminating the positive Murphy's Sign.

LIGAMENT INTERLINK TECHNIQUE

Ligament interlink technique was developed by Goodheart in 1978,[4] whereby he demonstrated the relationships of contralateral ligaments from joints of the upper extremity to the joints of the lower extremity and vice-versa. This was further expanded upon in subsequent years by Goodheart[5] showing that the ligament

interlink technique could also affect ipsilateral joints in the opposite extremities; for example, arm and leg on the same side, or that it could relate two joints in the same extremity; for example, both knees, from the right side to the left side. We now know that there are many patterns of ligament interlink technique available, as reviewed by and also expanded by Mladenoff.[6, 7]

The idea that a muscle drives an organ through somato-visceral feedback led to the investigation of the patients with a positive Murphy's Sign and a weak popliteus muscle. The standard method of identifying a need for ligament interlink technique is to therapy localize one hand to a joint in question, for example, the knee, and the opposite hand to the contralateral homologous joint of the opposite extremity. One alternative procedure involves finding a weak muscle surrounding a specific joint and T.L.ing to the opposite joint on the opposite side. For example, finding a weak popliteus muscle on the right, T.L. to the left elbow and observe for a change from weakness to strength of the popliteus. This alternative method may be confirmed and correlated with the previous two-hand T.L. procedure.

A second alternative method to (and a third method of) identifying the need for ligament interlink technique is to take a muscle which was previously weak and has been treated, and still shows some involvement on T.S. Line or posture, and to T.L. to the contralateral, opposite joint side, to elicit again the weakness of this muscle, which is still in the 51%'er category. For example, a right popliteus which you treated last week using neurolymphatic activity, tests strong this week, but T.L. to the left elbow now causes weakness to recur in the right popliteus.

These three methods all correlate very well in identifying ligament interlink technique.

Based on the fact that muscles drive organs, it was thought that potentially the feedback from the popliteus might somehow affect gall bladder pain in the positive Murphy's Sign. Investigation was first directed at identifying a fascial sheath shortening of the popliteus as a potential trigger mechanism for the positive Murphy's Sign, similar to the way the fascial sheath shortening of the teres minor is related to thyroid involvements in low body temperature. This investigation was short-lived, with absolutely no fruitful results.

The next thought was that potentially there was some feedback from the ligament interlink pattern from the opposite extremity; that is to say, the opposite elbow, which might be triggering off the popliteus weakness and thereby initiating the weakness in the gall bladder circuit and the positive Murphy's Sign. In scores of patients with positive Murphy's Sign, with or without digestive complaints, with or without pain as a symptom, but with pain on palpation underneath the rib cage on the right side, aggravated by inspiration, we have found consistently a weakness of popliteus muscle which was neutralized by, among other factors, a ligament interlink technique.

We first identify a unilateral or bilateral popliteus weakness and identify the factors of the IVF which are in need of correction. Further investigation prior to correcting any of these factors involves T.L. to the opposite elbow to identify a potential strengthening of the popliteus and ligament interlink

involvement. Time after time, there is found to be ligament interlink, primarily from opposite elbow, affecting the popliteus weakness. Less frequently is found a ligament interlink pattern from the elbow ipsilateral to the popliteus weakness and/or ligament interlink activity from the contralateral knee.

Corroboration by standard two-hand testing, one hand to the knee, the other hand to the opposite elbow, confirms the pattern by weakening an indicator muscle which is neutralized by hyoid laterality in the standard fashion.[4] Consistently we found a need to manipulate the elbow (rather than the knee) with lateralization of the hyoid to the side of treatment. The ligaments which seem to be most consistently involved were those of the elbow, specifically the ulnar collateral ligaments, the radial collateral ligament, and the annular ligament, especially over the head of the radius very near the location of large intestine 11 acupuncture point. It is not known whether there is any acupuncture significance to this location, but it is usually involved in these patients. However, all areas of the elbow joint and all elbow ligaments have been found to be quite excruciatingly tender at one time or another in these patients.

A reduction of <u>at least</u> 40% of positive Murphy's Sign should be elicited by continued (possibly up to 2 minutes) ligament interlink technique(i.e., to the contralateral elbow, knee or ipsilateral elbow, or contralateral knee.) Most often the reduction of Murphy's pain is somewhere in the range of 80%. When reduction of at least 75% to 80% is not found from ligament interlink technique alone, AK acupuncture pulse diagnosis and pain control technique is employed, with another great reduction of Murphy's pain, usually in the range of 80-100% when the two techniques are

combined. If there is still less than 50% reduction when ligament interlink and pain control technique are combined, manipulation of the neurolymphatic reflex, manipulation of the 4th thoracic vertebrae, and other standard kinesiological techniques are employed, such as correction of ileocecal valve syndrome. Consistent reductions of Murphy's Sign pain in the 80% to 90% bracket can be made by proper use of ligament interlink technique, making sure to consider all of the different forms which ligament interlink involvement can take. (See Mladenoff.[6,7]) The patients who experience reduction in acute pain still require dietary therapy, removal of fatty foods and fried foods from their diets, as well as chocolate, coffee, refined carbohydrates, etc., and cigarettes. Supplementation with purified bile salts and oftentimes bile-mobilizing products, such as A-F Betafood (Standard Process Labs) or similar products is usually necessary and may be tested using the AK indicators of a weak latissimus dorsi (A-F Betafood), pectoralis major, sternal (both) or popliteus (both).

CONCLUSION

By the estimation of this author, the single most valuable tool in eliminating positive Murphy's Sign is the ligament interlink technique, applied in the standard fashion. This phenomenon appears to be based on the fact that one (or both) popliteus muscle(s) is weak, this weakness being triggered by the ligament interlink involvement, and then this ligamentous irritation and/or popliteus weakness further triggers feedback into the nervous system which interferes with normal gall bladder activity. It is felt that this technique may well be applied for other visceral disturbances, but our experience level with these is limited, and further research in this area is recommended.

REFERENCES

[1]Wells, B.F. and Joseph Janse, Chiropractic Practice: Volume 2 - Diseases of the Digestive System, privately published, Chicago, 1943. p. 165

[2]Goodheart, George J., Applied Kinesiology 1977 Workshop Procedure Manual, privately published, Detroit, 1977.

[3]Carpenter, S.A., J. Hoffman, and R. Mendel, "An Investigation into the Effect of Organ Irritation on Muscle Strength and Spinal Mobility," Journal of Clinical Chiropractic II:6 and III:1

[4]Goodheart, George J., Applied Kinesiology 1978 Workshop Procedure Manual, privately published, Detroit, 1978.

[5]Goodheart, George J., Applied Kinesiology 1980 Workshop Procedure Manual, Vol. 1, privately published, Detroit, 1980. pp. 73-74.

[6]Mladenoff, Evan, "Theoretical Extrapolation of the Ligament Interlink Lesion," ICAK COLLECTED PAPERS, Winter, 1980.

[7]Mladenoff, Evan, "The Ligament Interlink Lesion," ICAK Collected Papers, Summer, 1981, presented in Dearborn, Michigan, May, 1981.

HYOID LATERALITY AND SPLEEN 21, K-27 TECHNIQUE

Walter H. Schmitt, Jr., D.C.

Abstract: When left Sp-21 T.L.'s in conjunction with left K-27, a hyoid imbalance is found. Correction of the hyoid muscle causes a shift from T.L. of left K-27 to T.L. of right K-27 in conjunction with left Sp-21 T.L. Methods of correcting hyoid imbalance are spindle cell technique, and the use of thymus and/or parotid and/or folic acid substances.

The use of tapping left spleen 21 and right or left K-27 was introduced by Goodheart in 1978.[1] This technique to change body chemistry has afforded applied kinesiologists a fabulous opportunity in helping out patients.

When the original technique was developed, it was discovered that Sp-21 would usually positively therapy localize on the left side (on a right-handed patient). Dr. Goodheart felt that there was a counter-balance, so to speak, of this point that could be found on the right side of the body.[2] Some of the first few patients investigated showed that positive T.L. to left Sp-21 could be neutralized by T.L.ing over the atlas on the right. The occasional patient to show response in this fashion revealed that correction of atlas subluxation would occasionally neutralize the left Sp-21 T.L. Other patients were tapped on left Sp-21 simultaneously with tapping over the right atlas posterior arch. This seemed to produce some clinical changes, but it was further refined when it was found that left Sp-21 was more frequently neutralized by T.L. to right K-27.

Further investigation yielded a number of patients who showed T.L. of left Sp-21 being neutralized by left or right K-27. Still other patients showed T.L. would only be positive on double T.L. (i.e., using two hands) to left Sp-21 with the other hand being on right or left K-27.

Goodheart's original idea was that the Spleen 21 on the left should be balanced by another factor on the right. And although this has been altered by clinical experience, the idea has stuck with me for some time. It was felt that if there were a counterbalance to left Sp-21, it would most likely be on the right side of the body, after Goodheart's original idea. However, this did not seem to pan out in clinical investigation. The idea occurred that potentially there was some type of "switching" mechanism taking place in the patients who showed Sp-21 on the left and also K-27 on the left in conjunction with it.

Noting the proximity of the hyoid bone and the infra-hyoid muscles to the K-27 area, it was felt that possibly an imbalance in the hyoid mechanism might cause an interference with the normal feedback from K-27. Hyoid imbalance may be affected by a number of mechanical, magnetic, or chemical agents.[1] Hyoid laterality is usually corrected by spindle cell activity into the stylo-hyoid muscle or posterior digastric muscle, depending on the direction of challenge of the hyoid mechanism. Since many hyoid imbalances recurred, other methods were also found to neutralize this recurrent hyoid laterality.

The chemical and glandular factors which can neutralize the lateral hyoid, especially in the recurrent case, are thymus and

parotid activity and folic acid, and combinations of thymus and folic acid.

It is rarely found necessary to manipulate the spindle cells of the hyoid muscles more than once (if even once) when the hyoid is thought of as an indicator for an imbalance in the activities of one of these other systems. Rarely do I find it necessary to use hyoid spindle cell therapy when employing one of these chemical factors.

Spindle cell activity into the belly of the stylohyoid muscle, based on hyoid challenge, caused many patients with positive T.L. to left Sp-21 to show change in concomitantly positive T.L. from left K-27 to right K-27. Other patients, however, following spindle cell activity to the hyoid muscles would show either both or neither K-27 to T.L. in conjunction with left Sp-21. This was, of course, confusing. These patients were asked to get up and walk around the room or jump up and down 10 times and then lie back down on the treatment table and were found to show recurrence of the hyoid challenge. The use of chemical substances to correct the hyoid imbalances was attempted on these patients. Most often thymus gland and parotid gland involvement was found (confirmed by weakness of the infraspinatus and/or T.L. to thymus and/or T.L. to parotid gland locally). Introduction of thymus tissue and parotid tissue on the patient's tongue would neutralize the hyoid laterality as would neurolymphatic activity to thymus NL and parotid NL. Further, this would neutralize the hyoid laterality and would cause a shifting of the positive T.L. from the left K-27 to the right K-27 (i.e., when performed in conjunction with T.L. to left Sp-21).

CONCLUSIONS

Patients who show left K-27 therapy localization in response to left Sp-21 T.L. are felt to have a further imbalance in their systems which is related to hyoid muscle laterality. Spindle cell activity in the hyoid muscles based on hyoid challenge can be very valuable, but more often this left K-27 involvement in conjunction with left Sp-21 gives us a further clue as to the individual chemical or glandular imbalances in the patient. Many patients with thymus and parotid (or folic acid) problems have been uncovered based on the fact that left K-27 activity was found correlating with hyoid laterality, which then led to the discovery of thymus/parotid involvement (or hidden folic acid problem). Clinical response patterns and limited recurrence of Sp-21/K-27 (and hyoid problems) on patients give credence to the idea that we are on the right track with this investigation.

REFERENCES

[1]Goodheart, George J., Applied Kinesiology 1978 Workshop Procedure Manual, privately published, Detroit, 1978.

[2]Goodheart, George J., personal communications and personal observations of clinical investigations.

Dr. Walter Schmitt

CLINICAL OBSERVATIONS REGARDING DORSAL VS. PALMAR THERAPY LOCALIZATION :

The Importance of Right Brain/Left Brain Activity and the Electron Poising System

Abstract: The history of the use of dorsal (as opposed to palmar) therapy localization (T.L.) is discussed with the development of the idea that dorsal T.L. occurs only in the presence of altered physiology. The specific physiological alterations creating dorsal T.L. are hypothesized to be changes in the long term set points (i.e., thyroid activity, steroid activity, presence of iron) of the electron poising system. The relationships of right brain/left brain activity and muscle testing to the electron poising system are discussed. These patterns serve as a basis for identifying the faults which create the phenomenon of dorsal T.L.

INTRODUCTION

The advent of therapy localization (1974) was possibly the most dramatic event in the history of health sciences. Soon, however, we start to take such things as therapy localization for granted, as they become part of our daily regime. Still, questions crop up from time to time and refinements of our procedures continue to be made.

In 1978, Goodheart published the fact that the process of therapy localization, which to that time had been done primarily with the palmar side of the hand and fingers, could also be performed with the dorsal side of the hand in certain cases.[1] In a significant number of patients, certain areas would T.L. with only the palmar or only the dorsal side of the hand. Initially this was thought to be related to the individuality of the patient, and it has been recommended in our texts on applied kinesiology that both dorsal and palmar T.L. be performed before

ruling out positive T.L. to an area. Further investigation showed relationships to nasal ionization patterns of various forms of T.L.

The original observations that palmar T.L. was not always constant and that dorsal T.L. is sometimes necessary, were made by Dr. Goodheart in 1975 at the Wayne State University's College of Health Sciences, as he lectured to the College's first graduating class of physical therapists. I was fortunate to accompany him to that lecture. A student subject showed a bilateral gluteus maximus weakness, and in an effort to demonstrate T.L. to an upper cervical fixation, the palmar surfaces of both hands were placed over the upper cervical spine. To our surprise, both gluteus maximus muscles remained weak. In desperation, Dr. Goodheart placed the dorsal surface of the student's hands over the upper cervical spine with a resultant strengthening of both gluteus maximus muscles. The fact of T.L. was demonstrated to the audience's satisfaction, but we both did a double take!

This observation of dorsal T.L. as opposed to palmar T.L. was curious, but we were able to add dorsal T.L. to our regime, with the idea that it was a normal variation of our procedures. However, during the previous year since the inception of T.L., we had been getting excellent responses with simple palmar T.L.

DEVELOPMENT OF HYPOTHESIS

These observations led me to the hypothesis that dorsal T.L. was an abnormal situation and that palmar T.L. should be the T.L. of choice. Stated differently, the hypothesis might be that if dorsal T.L. is positive and palmar T.L. is negative, there is an

alteration of functioning, a sort of front to back switching, from the palmar to the dorsal side of the hand.

Investigations published by Goodheart in 1978[1] were based in part on the work of Davis and Rawls,[2] and were directed at identifying the magnetic activity of the different body areas, and the positive and negative aspects of different body parts. The observations identified the front, right side of the body as being positive, including the palmar surface of the right hand, and the dorsal side of the right side of the body as being negative, including the dorsal surface of the right hand. The front, left side of the body was identified as being negative, including the palmar surface of the left hand, and the back, left side of the body was identified as being positive, including the dorsal surface of the left hand. A number of investigations were carried out, using palmar and dorsal surfaces, on right and left sides of the body, but these investigations were suspended in lieu of more pressing matters and due to a number of confusing and contradictory patterns which were encountered. This further enhanced the thought that perhaps dorsal T.L. was an abnormality rather than a normal variant. Dr. Fred Stoner[3] has discussed his findings that the use of the fingertips in T.L. would be accurate in the case of either dorsal or palmar T.L., and this has been of some value in helping to identify T.L. of specific areas. But still the thought was bothersome that there should be two different types of T.L. in the average individual which were exclusive of each other.

As clinical experience continued and further observations were made, it was noticed that there were many patients who seemed to consistently T.L. with the palmar area, and fewer patients, but still a significant number, who consistently showed one or more areas of the body that would dorsal T.L. Occasionally a patient would present who would show only dorsal T.L., but a significantly greater number of patients showed mixed palmar and dorsal T.L.

ELECTRON POISING

With the advent of the findings of the electron poising system by James Pershing Isaacs,[4] and its introduction into applied kinesiologic diagnostic and therapeutic regimes,[5] we were able to see many factors in right brain and left brain activity take place which had previously escaped our attention. The relationships of the biochemistry to the nervous system which were made by Goodheart[5] were phenomenal findings in that left brain activity and right brain activity were shown to be related not only to neurological function but also to biochemical function.

To summarize, the left brain is the reading, writing and arithmetic side of the brain, the logical, reasonable, rational half of the brain, which controls the right side of the body in right-handed and left-brain dominant people. The left brain has been found by Goodheart to be related to water-soluble nutrients, most importantly vitamin C in relation to the electron poising system. The right brain is the creative, artistic intuitive half, the singing, dancing, knitting a rug, playing basebell half of the brain, which controls the left side of the

body in right-handed and left-brain dominant individuals. The right brain has been found to be related to fat-soluble substances, most primarily vitamin E in relation to the electron poising mechanism. Further, vitamin A was shown to bridge the gap between the right and the left sides of the brain, as it does in regards to the cell membrane in the concepts of electron poising.

Several minerals are also involved. Left brain activity could be related to manganese and right brain activity could be related to zinc. As can be seen from the Figures 1 and 2, these particular nutrients (that is, vitamins C, E, zinc and manganese) have intimate relationships to the right half and the left half of the electron poising oxidation-reduction potentials of the cell. Other related factors which can be seen in Figure 2, are iron, copper, selenium, estrogen, and thyroid hormone. The selenium seems to parallel the activity of vitamin E and the iron and copper seem to be neutral or centerline nutrients which seem to bridge the gap between the right side and the left side of the body and the right side and the left side of the electron poising system. Vitamin A, which is not shown in Figure 2, is also a sort of centerline nutrient. (See Figure 3.)

Figure 1 demonstrates the action potential control mechanism in an energy reaction chart as adapted from Isaac's work.[4] This figure shows the rate of oxidation on the "Y" axis and the electrical potential of the cell on the "X" axis. If the resting cell is set at its mid-point, that is, at the most optimal point of the cell's potential, then the cell may have an option to oxidize or

reduce accordingly, as the demands of the body are put on it. If the cell is perfectly poised at this mid-potential, then oxidations and reductions in the cell's cytoplasm will cause the changes in the electrical potential such that it will follow the curve as you see on the graph.

The changes that take place along this electron poising curve with intracellular oxidation/reduction reactions are what are known as "short term changes" and occur very rapidly, with a spontaneous return toward the mid-potential point at the center of the graph. These changes are dependent primarily on adequate supplies of vitamins C, E, and A, and manganese and zinc, and the other factors which we have seen in the electron poising mechanism in Figure 2, to keep oxidation-reduction potentials balanced, as in the circular diagrams.

Isaacs also discussed what he calls "long term set points" for the mechanism. In other words, the long term limits of this "S" (Sigmoid) curve in Figure 1 can be tied down, depending on the balance of a variety of factors, such that the mid-point of the curve is always at the optimal setting for oxidation (Y axis) and electrical potential (X axis) in that cell. The mid-potential is maintained at its optimum by a balance, primarily of the long term set point factors, which are thyroid hormone level, steroid (estrogen) hormone level, and the necessity for iron and copper. These so-called long term set points nail down the ends and middle of the curve so that its resting mid-potential will be at its optimal level.

If there is an alteration in normal balance between thyroids and steroids, or a deficiency or excess of iron (and/or copper), the ends of the curve may be allowed to turn, as a propeller might turn (in the case of thyroid or steroid imbalance). Or the centerpoint of the curve may be allowed to slide up, down, right, or left, since it is held down as a propeller would be held in place by a drive shaft and lock-pin, which in this case would be the nutrient iron (or copper). Changes in the long-term set points of this curve mean that the optimum potential for the cell will not be maintained without alteration from the midpoint of the curve.

Rather than pursuing a long discussion of the ramifications of the electron poising mechanism on cellular functions, this discussion is merely made to point out that there are differences between the short-term oxidation-reduction capacity of the cell to move up and down the sigmoid curve as seen in Figure 1, as opposed to changes in the long-term set points of the system, causing the curve itself to shift its position on the graph. Changes in the long-term set points will cause the curve to move in toto, changing position up or down, or right or left, such that the movement would still occur on the short term, up and down the curve, but the curve itself would be in a different place, with a non-optimal mid-point as regards the resting status of the cell; i.e., the resting level of oxidation (Y axis) and the resting electrical potential (X axis) of the cytoplasm.

It is my hypothesis that dorsal therapy localization is a factor <u>only</u> when the long-term set points of the electron poising system are out of balance. That is, we encounter dorsal T.L. only when there is an imbalance between thyroid and steroid

hormones and/or a deficiency of iron (or copper) such that the long-term set of the cell is off. Thyroid and steroid are known to be related to left brain and right brain, respectively, and iron is known to be involved with both left brain and right brain activity.[6] In light of these right brain/left brain relationships there is only a short gap to jump to make the assumption that the dorsal and palmar switching is a further ramification of right brain/left brain imbalances, specifically that of the long-term set point factors being out of normal balance.

Since the left side of the brain controls, predominantly, the right side of the body and the right side of the brain controls, predominantly, the left side of the body, it seemed unusual that many right brain/left brain faults would be seen where the left brain activity changed muscle factors on the left side of the body and the right brain activity changed muscle factors on the right side of the body. This has been attributed to the fact that 85% of the corticospinal fibers decussate in the pyramidal decussation and that 15% of them do not. Of that 15%, approximately half of them may decussate at a lower level, but there are still a small percent of fibers that do not decussate. Our reasoning for left brain activity affecting the left side of the body in some patients is that there is involvement with these left-sided non-decussating corticospinal fibers. At least this model serves to explain the phenomena which we observe.

Upon becoming aware of the fact that left brain activity is related to thyroid function, and right brain activity is related to steroid function (adrenal function in the male, ovarian and/or adrenal function in the female), an entirely new door of investigation was opened regarding right brain/left brain activity.

By trial and error it was observed that when left brain activity affected muscles on the left side of the body, there was frequently a response, but only a partial response, when using a left brain nutrient, such as vitamin C. Likewise, when right brain activity affected the right side of the body, it was frequently observed that only a partial response would take place in these right-sided muscles when a right brain nutrient, such as vitamin E, was given. Even more confusing was the pattern that showed in some patients who had left-sided muscles, some of which would respond to left brain activity and others to right brain activity. Likewise, these patients would show right-sided muscles, some of which would respond to left brain activity and some to right brain activity.

These confusing patterns became somewhat less confusing with the observation of the relationships of right brain/left brain to hormonal and long-term set point activity. For example, a common patient would be one who had a weak right latissimus dorsi (Lat) which responded to right brain activity and a weak left pectoralis major, clavicular (PMC) which responded to left brain activity. Giving vitamin C for left brain activity would not necessarily strengthen the left PMC, but would, however, neutralize any left brain or right brain activity in that muscle. Likewise, giving vitamin E would not necessarily strengthen the right Lat., but it would neutralize the right brain/left brain activity of the muscle. That is, the Lat. would still be weak in the clear, but no right brain activity or left brain activity would change its weakness. Vitamins E and C together in this case would sometimes require the addition of vitamin A to neutralize the right brain/left brain

activity, but still in these cases, the response pattern was such that although right brain/left brain activity was neutralized, muscle weakness was still present.

Upon adding glandular-based supplements (e.g., thyroid, adrenal/ovarian) as a form of testing the long-term set points, a significant observation has been made. Using the same example just mentioned, (a weak left PMC which responds to left brain activity and weak right Lat. which responds to right brain activity) it was found that the pattern could be neutralized by giving the patient glandular-based supplements relating to the thyroid and the steroids (the adrenal and/or ovary in a woman; the adrenal in a man). Taking this same patient just mentioned and putting nutritional thyroid substance on the patient's tongue would neutralize the left brain activity as well as strengthen the left PMC. Giving adrenal (or sometimes in a woman, ovarian) substance would neutralize the right brain activity and strengthen the right Lat. Giving both the thyroid substance and the adrenal (or ovarian) substance to the patient at the same time would sometimes fix both the right brain and left brain activity and strengthen the muscles. Or as would oftentimes occur with vitamins C and E, the patient would be right back to where he started, with both pills in the mouth at the same time; that is, both muscles weak and both muscles showing right brain or left brain activities, respectively.

In these cases, further placement of vitamin A in the mouth (or sometimes trace minerals, or sometimes iron) would cause a neutralization of the previous weakness and a neutralization of all right brain and left brain activity in these patients. The use

of vitamin A as a binding agent or communicating agent between the right side and the left side of the body is as valid for the hormonal right brain/left brain factors as it is for the nutrient right brain/left brain factors. Likewise, sometimes trace minerals or iron is necessary as a binding agent between these two hormonal right brain/left brain factors.

Iron itself is oftentimes the culprit when there is right brain/left brain imbalance. This is particularly true when the most complicated or bizarre right brain/left brain patterns are present. Giving iron will neutralize right brain activity and left brain activity in any pattern in those patients who require it. It is sometimes necessary to use iron with the vitamins (vitamins C, E, and A), minerals (manganese, zinc, copper), or hormones (thyroid support, steroid support). But most commonly the need for iron will confuse the right brain/left brain patterns to the greatest extent, greater than all of these other factors combined. To summarize, the most confusing patterns of right brain/left brain activity (where right brain activity affects the right side of the body or both sides and left brain activity affects the left side of the body, or both sides), are usually related to a need for more iron in the system. Right brain and left brain activity can be neutralized, as well as all related muscle weakness, by giving iron in these iron-deficient cases.

The need for thyroid support and/or steroid support can be seen in patients who show right brain activity affecting the right side of the body and left brain activity affecting the left side of the body, seemingly relating to the supposed 15% of fibers

which do not decussate. The use of thyroid substance and steroid (adrenal or ovarian) substance will not only neutralize the right brain/left brain patterns in these patients, but will also strengthen the associated weak muscles. Such a strengthening of these muscles does not occur with the use of the nutrients only (although the nutrients will neutralize right brain and left brain activity, the muscles will still be weak in the clear, or as 51%ers.) It is proposed that if the right combination of electron poising elements is given the patient, not only will the right brain/left brain activity be neutralized, but all muscle weaknesses so associated will become strong upon insalivation of the appropriate group of substances.

DORSAL VERSUS PALMAR THERAPY LOCALIZATION

In observations of right brain/left brain activity affecting the patient's muscular system and the confused patterns to which we have just referred in the preceeding paragraphs, where the right brain affects the right side of the body as well as the left side, and the left brain in the same fashion affects both sides of the body, another phenomenon occurred which led me to the investigation of the dorsal vs. palmar therapy localization. As previously mentioned, patients showed response to all muscle weakness right/left brain patterns while investigating the pattern of thyroid vs. steroid and left brain vs. right brain activity. Further, other T.L. activity in many parts of the body which had previously been present was oftentimes neutralized. Many of these patients had shown dorsal T.L. activity, particularly when there were confusing right brain and left brain imbalances.

Upon re-checking a number of these patients, prior to any structural corrections, but after applying nutritional therapy as indicated to neutralize right brain/left brain activity patterns, it was observed that some major structural faults which were still present and which had previously T.L.ed with the dorsal surface only now T.L.ed with the palmar surface only. This led to the thought that dorsal T.L. is related to an imbalance between right brain and left brain activity, particularly related to the so-called long-term set point factors; that is, the need for balancing the steroid and thyroid hormones and the requirements for iron (and potentially copper).

To investigate this idea, whenever dorsal T.L. was observed, the next step was identification of right brain/left brain patterns and the potential need for re-establishing proper long-term set point factors in the electron poising system. That is, these patients were checked for a need for iron (or potentially copper) and/or balancing activity in the steroid/thyroid relationships. Findings indicated that combinations of the dorsal and palmar T.L. would often occur in the same patient and these could be neutralized by re-establishing normal long-term set point activity. This was done by giving orally the appropriate supplements for the patient (depending on which he responded to) from the choices of thyroid and steroid (adrenal, ovarian) support and/or iron. These patients would show responses in right brain/left brain activity (which would be normalized) as well as strengthening of many, if not all, apparent weak muscles, with no recurrence of right brain/left brain activity when the proper combination of thyroid, steroid and iron (or copper) and other

factors (e.g., vitamin A, trace minerals) were supplied orally.

Further, the patterns which previously showed either dorsal or palmar T.L. were oftentimes corrected by the proper application of the thyroid, steroid, iron, etc. substances. The normalization of some previously T.L.ed areas was first thought to be a cover-up mechanism until the patient's symptom pattern improvements paralleled the muscle strength improvements. In light of these symptom improvements, it was thought that those substances supplied were those whose deficiencies were the primary factors in causing the problems in these muscle circuits in the first place. Upon appropriate administration of these substances, dorsal T.L. was totally abolished. Palmar T.L. was abolished in some areas, and other areas which still required correction (e.g., primary subluxations) would respond only to palmar T.L.

For these reasons, it is felt that dorsal T.L. is part of a protective or cover-up mechanism of the body, an adaptation which is actually a part of the patient's problem, rather than merely a variation of a diagnostic tool, as previously thought. It is now my opinion that in order to get the patient into a state where he can be adequately treated, dorsal T.L. should first be neutralized so that all involved areas of the body T.L. with palmar surfaces only. After correcting the patient so that only palmar T.L. is present, many other faults will spontaneously correct themselves and will not recur.

The idea is that when the long-term set point activity of the electron poising system is at other than optimum levels, this creates a great deal of stress in the patient's nervous system which is manifested in muscle weakness and structural fault

patterns. By correcting the long-term set points, each individual cell of the body will be able to function at a more optimal level, and therefore the patient will enjoy a much higher level of health. This also makes the doctor's job much easier, particularly in relation to diagnosis. Instead of treating adaptations and compensations, we are able to more quickly get to the core of the patient's trouble. Treatment patterns are also simplified, as many faults for which a person is treated which were compensations, will automatically correct themselves when the proper electron poising factors, especially the long-term set point factors, are corrected.

PITUITARY DRIVE

A number of patients were given thyroid substance and adrenal (or ovarian) substance to help balance out the thyroid/steroid balance of the long-term set points of the body. After a number of patients had bought both of these expensive bottles of supplements, and possibly a third nutrient (vitamin A, iron, etc.), and were taking all of these pills simultaneously, several times a day, it was felt that possibly the nutritional support of the long-term set points was only one factor. About the same time this pattern was being seen, Dr. Goodheart discovered the pituitary drive technique.[7]

The pituitary drive technique is one where the pituitary does not T.L. in the clear nor do the individual target organs of the pituitary (e.g., thyroid, adrenals, ovaries), but two-handed T.L. yields pituitary and target organ T.L.[8] This pattern is well reviewed in this author's recent book, Common Glandualr Dysfunctions

in the General Practice.[8] The willingness of patients to take a multitude of pills several times a day, all at the same time, was not a problem. It was felt, however, that the pituitary drive technique might be able to re-establish generalized endocrine balance better than the glandular-based supplements, since the pituitary affects all the target organs.

The pituitary drive technique would oftentimes be related to pituitary-thyroid, pituitary-adrenal, or pituitary-gonadal axes. However, monitoring the patient's core temperature (oral and/or axillary) shows increases during and following pituitary drive technique, regardless of which organs T.L. during pituitary drive two-hand T.L. procedure. For this reason, it is felt that pituitary drive generally enhances the activity of the entire endocrine system, regardless of which target organ T.L.'s Assuming that the T.L. to pituitary and the target organs was indicative of imbalance in the endocrine system, the pituitary drive technique was employed as an alternative to giving nutritional support of thyroid and steroid organ tissues. The pituitary drive technique was found to adequately replace the use of nutritional substances in most patients.

The pituitary drive technique can be employed with subsequent neutralization of right brain/left brain activity in the patterns previously described when these patterns had also been shown to be neutralized by the use of the appropriate thyroid and steroid glandular substances. Therefore, it is felt that the pituitary drive technique is a more important factor in correcting the long-term set points on a hormonal level than was the use of nutritional glandular supports, although these were also found necessary in some patients.

In a small handful of patients, the pituitary drive is not indicated nor is the nutritional support found to be necessary. Fascial flushing of the thyroid-related muscle (teres minor) and the steroid-related muscle (e.g., adrenal - sartorius) shows a neutralization of right brain/left brain activity. Occasionally, neurolymphatic activity for these organs may serve the same purpose. These few patients show a similar correction of right brain/left brain problems and normalization of T.L. activity from dorsal to palmar as occurs when using the supplements or pituitary drive technique.

CONCLUSIONS

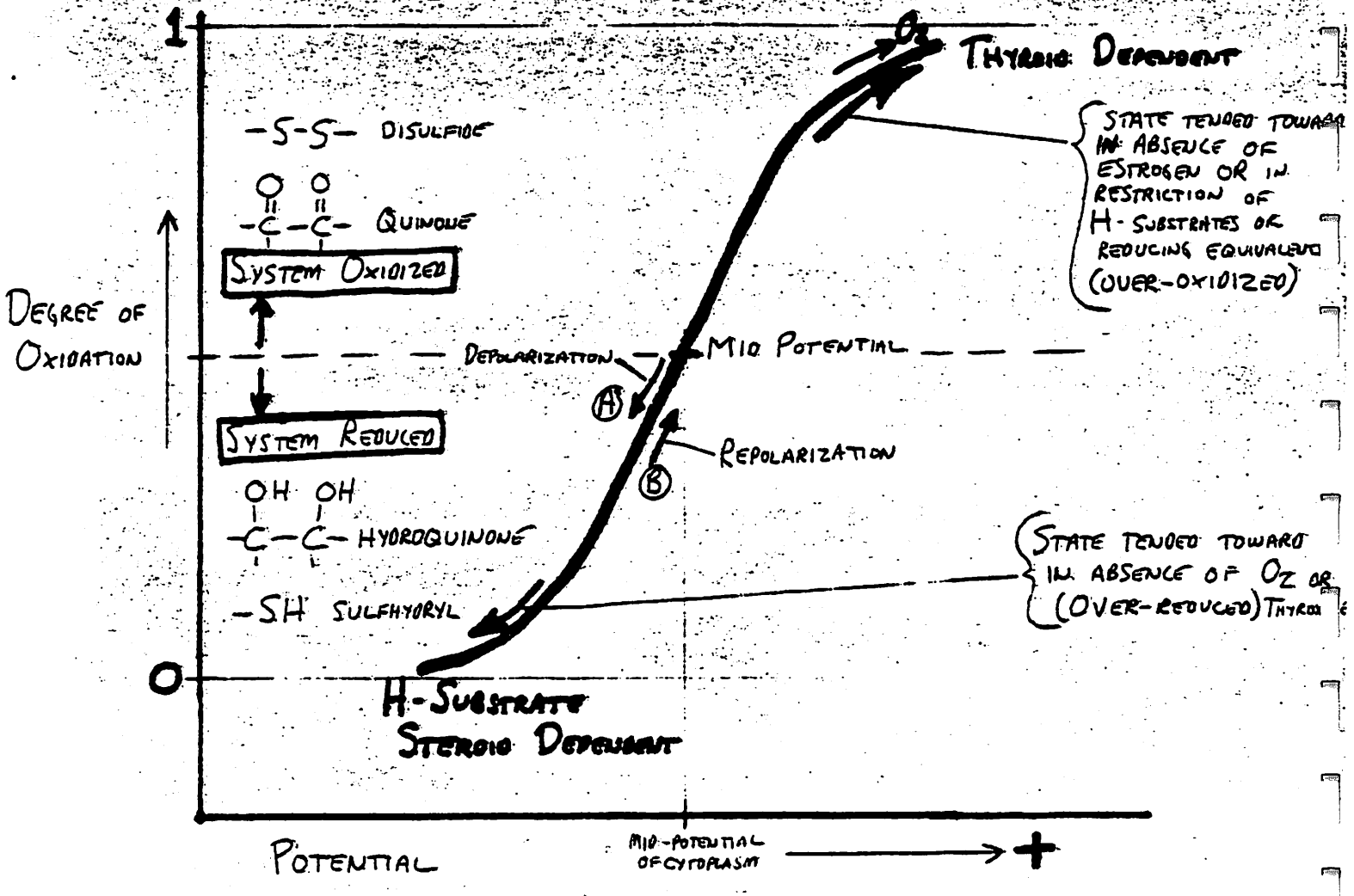
Normalization of right brain and left brain activity seems to be fundamental for the return of patients to normal health. If both halves of the brain are working together, then the person may employ 100% of his nervous system's potential to fight off adverse agents, such as stress, infections, or other processes leading to ill-health. If there is an imbalance between the two halves of the brain, the body short-circuits one of them to conserve energy and the body can deal with the problems it confronts at only ½ of its normal potential. That is, the body fights off the offending factor with either right brain or left brain, rather than using its full potential, both halves of the brain working together.

These patterns of right brain/left brain activity seem to parallel the findings that James Pershing Isaacs has discussed in relation to the long-term set points and short-term changes in the electron poising system. The use of these fundamental nutritional and hormonal factors makes available the missing

chemical links so that normalization of altered physiology may take place and the body can truly heal itself. These fundamental factors which are related to the long-term set points and short-term changes of the electron poising system, may be identified by their manifestations in the neuro-muscular skeletal system of the body through muscle testing. Our ability to use muscle testing to identify imbalances at the cellular, ortho-molecular level, as reflected in the nervous system, has given us a superb tool to create individual therapeutic regimes and nutritional support patterns for our patients, a tool which is unparalleled by any other in the healing arts profession.

Dynamics of the Electron Poising Action of the SH/SS Enzyme Control System

Adapted from "A Précis on Cellular Electron Poising, Ergodization, and Molecular Quantization" by James P. Isaacs & John C. Lamb; 6th Annual Trace Mineral Conference, University of Missouri, c. 1974



- Cell desires to be at mid-potential for 50:50 ratio of SH:SS molecules. This allows the best options for the activity of: 1) structural proteins, 2) enzymes, 3) nucleoproteins, chromosomes, and the spindle of the cell.

(A) Depolarization of the cell – change in -SH/S-S ratio (toward -SH) and intracellular enzyme activity

(B) Repolarization – return toward normal -SH/S-S ratio

FIGURE 1

FIGURE 2
THE "ELECTRON POISING" SYSTEM

COPPER CATALYZES THE COUPLING OF GLUTATHIONE AND ASCORBIC ACID. THIS Cu^{++}, GLUTATHIONE, & ASCORBIC ACID COMPLEX FUNCTIONS TO "POISE" ELECTRONS FOR THE OXIDATION-REDUCTION POTENTIALS OF THE CELL

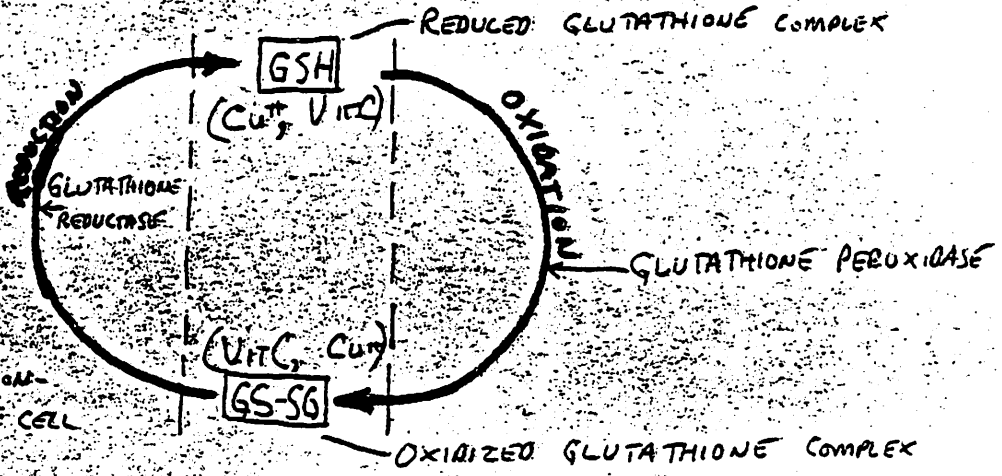


FIG 2-1

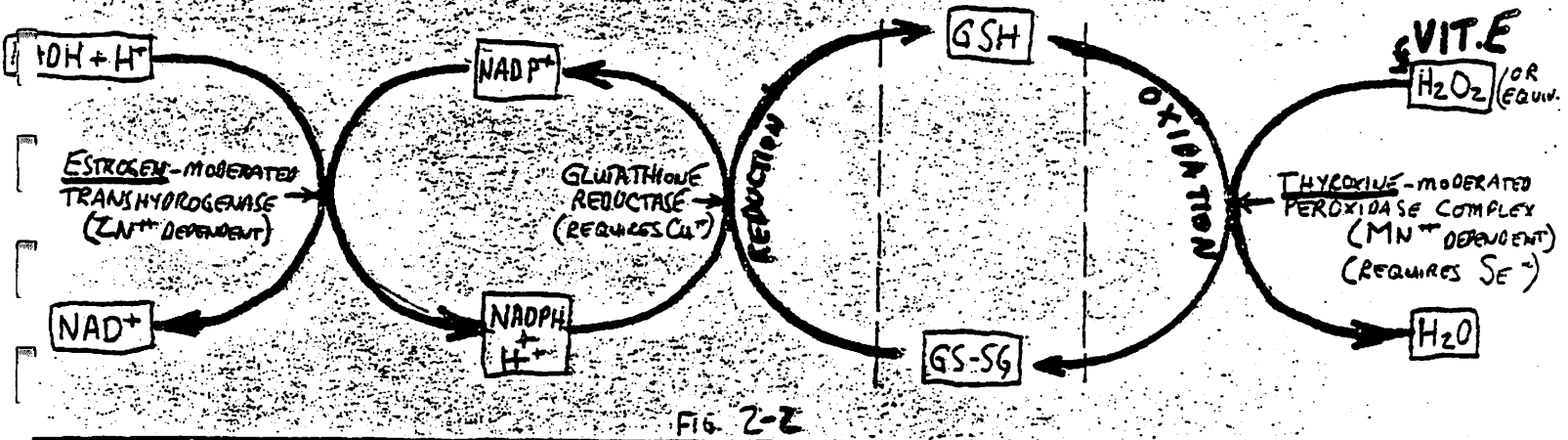


FIG 2-2

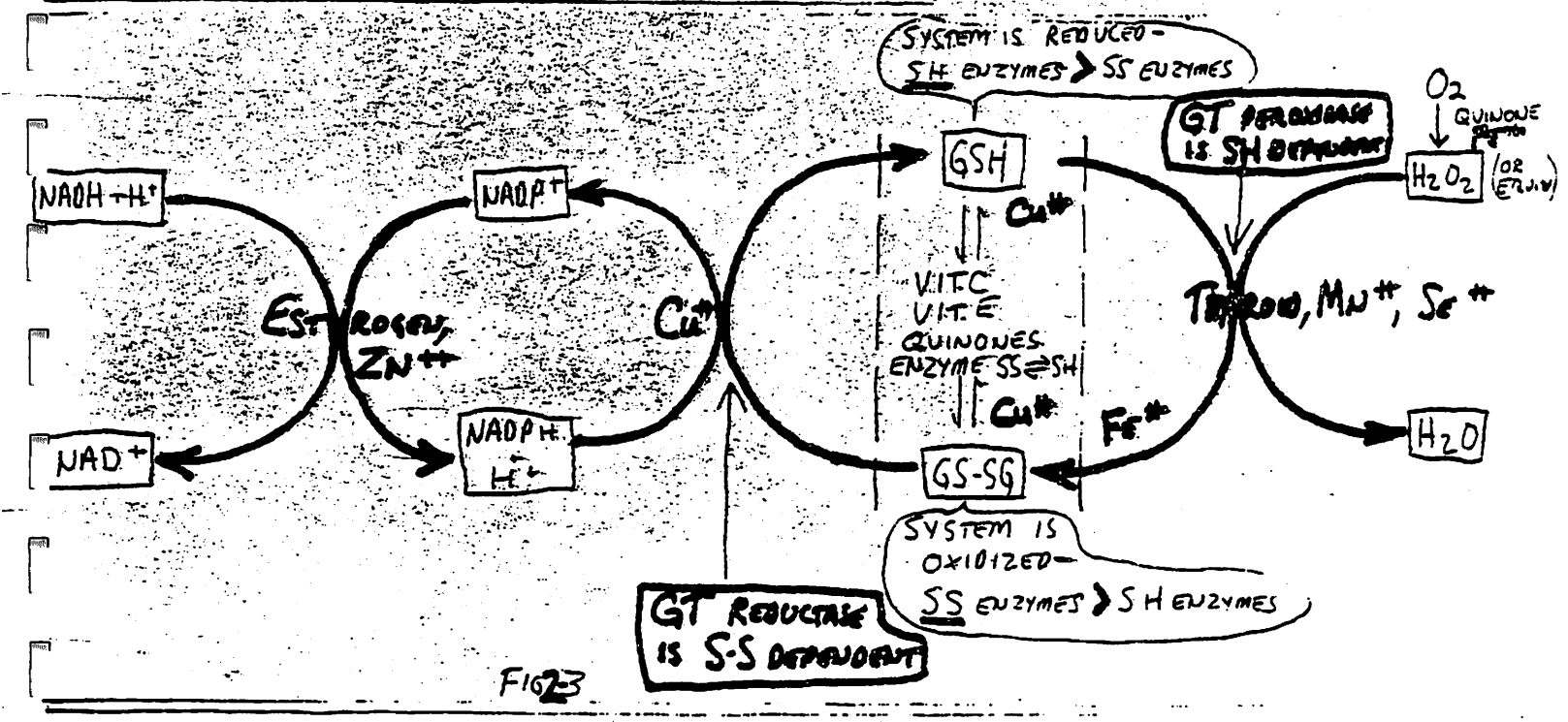


FIG 2-3

ADAPTED FROM "A PRÉCIS ON CELLULAR ELECTRON POISING, ERGODIZATION, AND MOLECULAR QUANTIZATION" BY JAMES PERSHING ISAACS AND JOHN C. LAMB, 1ST ANNUAL TRACE MINERAL CONFERENCE, UNIVERSITY OF MISSOURI, c. 1974.

SUMMARY OF RIGHT BRAIN / LEFT BRAIN FACTORS OF THE ELECTRON POISING SYSTEM ⑨

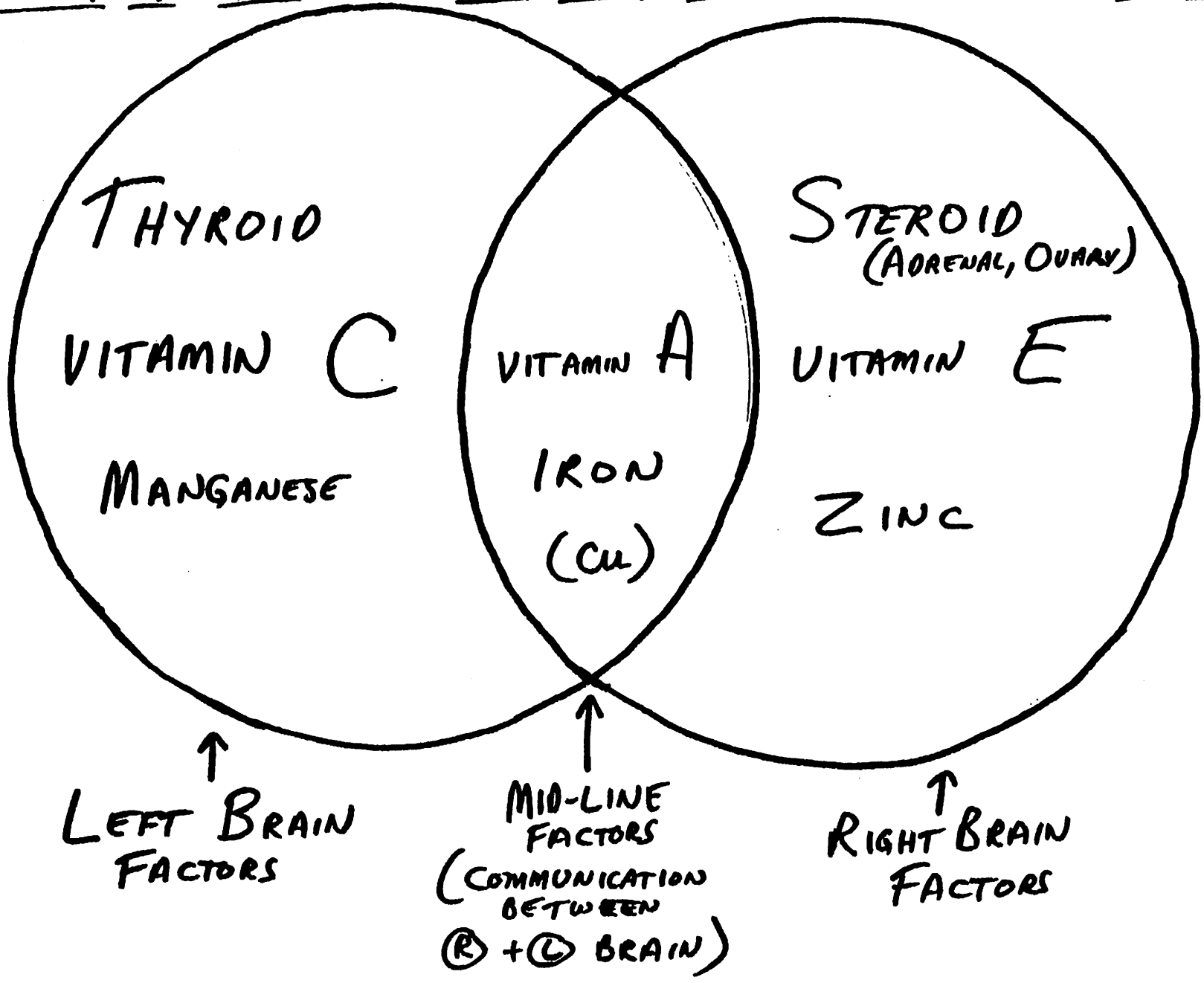


FIGURE 3

FIGURE 3

REFERENCES

[1]Goodheart, George J., Applied Kinesiology 1978 Workshop Procedure Manual, privately published, Detroit, 1978.

[2]Davis, Albert Roy and Walter C. Rawls, Jr., Magnetism and Its Effects on the Living System, Exposition Press, Hicksville, New York, 1974.

[3]Stoner, Fred, lecture presentation at ICAK meeting, Detroit, 1978.

[4]Isaacs, James P. & John C. Lamb, "A Précis on Cellular Electron Poising, Ergodization, and Molecular Quantization," 6th Annual Trace Mineral Conference, University of Missouri, 1974.

[5]Goodheart, George J., Applied Kinesiology 1979 Workshop Procedure Manual, privately published, Detroit, 1979, pp. 62-72.

[6]Goodheart, George J., personal communication.

[7]Goodheart, George J., Applied Kinesiology 1980 Workshop Procedure Manual, privately published, Detroit, 1980.

[8]Schmitt, Walter H., Jr., Common Glandular Dysfunctions in the General Practice, privately published, Chapel Hill, N.C. 1981.

[9]Morantz, Jerold I., lecture notes, 1980.

Sp-21 AND K-27 TECHNIQUE FOR CHANGING BODY CHEMISTRY : A REFINEMENT OF HOW LONG TO DO IT

Walter H. Schmitt, Jr., D.C.

Abstract: The length of time necessary for tapping of Spleen-21 and K-27 to change body chemistry may be determined by the introduction of an acid (or alkaline) substance into the patient's mouth after an initial period of tapping has been performed. Recurrence of positive T.L. to Sp-21 (or Sp-21 and K-27) with the acid (or alkaline) substance in the patient's mouth implies a need for a longer period of tapping.

One of the problems we consistently have in applied kinesiology is deciding how long to perform a certain manipulation. As a student at National College of Chiropractic, one of our professors, the late Dr. Norman Fragerio, M.D., Ph.D., D.D., etc., once asked me to use some applied kinesiology technique on him. After performing a cranial respiratory technique for 4 or 5 respirations, Dr. Fragerio said, "Do that some more." He continued, "You know, I think you all do the right thing but I think you oftentimes do not do it for long enough." After performing the cranial respiratory technqiue about 15 or 20 more times, he said, "Fine, that feels better. That feels like it is right now." This was a very sensitive observation from a very sensitive man, the validity of which was borne out by the more recent findings of pituitary drive technique by Goodheart[1] which show that it is oftentimes necessary to perform cranial respiratory technique for much longer periods of time than the 4 or 5 respirations which were originally recommended.

With the advent of temporal tap[2] we were given an excellent tool by which to evaluate the length of time to perform a given therapy. For example, if neurolymphatic reflex were performed for too short a time, the muscle in question would be strong and therapy localization would still be negative, but temporal tapping on the side of brain dominance (generally the left side) while T.L.ing the just-treated reflex area, would cause return of the muscle weakness if that reflex area or any other reflex areas on that particular muscular circuit required additional treatment.

This tool was a great aid in diagnosis as well as in evaluating our therapeutic methods. However it was felt that the same techniques should perhaps be performed longer. The obvious indicator for the pain control-acupuncture tapping technique is evaluation of the patient's pain level. The satisfactory reduction of pain can be achieved and/or a plateau reached beyond which no further pain reduction can be achieved and this is a good indicator for the stopping point of the pain control technique.

With the advent of the tapping technique for left spleen 21 (Sp-21) and right or left kidney-27 (K-27) for changing body chemistry in patients who had such an involvement, we had another very powerful tool at our disposal.[3] However, frequently, changes in body chemistry are observed to take place (such as oral pH) which continue long after the time that therapy localization to these two acupuncture points becomes negative. These changes in body chemistry continue even beyond the point that therapy localization with temporal tap is used to verify completeness of correction.

In some cases therapy localization to Sp-21 and K-27 would disappear quite rapidly (after 15-20 taps). Even T.L. with temporal tap audit would rapidly become negative. Yet continuation of the treatment seemed to elicit greater changes in body chemistry (such as oral pH). Since oral pH has been used as a simple demonstration of change in body chemistry in response to Sp-21/K-27 technique, it was felt that possibly these changes in the body chemistry from Sp-21/K-27 technique might somehow be related to acid-alkaline balance. An excellent paper has been presented for a student physiology lab experiment at Logan Chiropractic College which elucidates some previously unknown factors regarding oral pH and shows that changes do take place in oral pH based on Sp-21/K-27 activity, compared to that of a control.[4] It was felt that there might be an even more sensitive indicator for the length of time necessary to perform Sp-21/K-27 technique than the therapy localization, temporal tap audit which had been used previously.

METHOD OF INVESTIGATION

Since the Sp-21/K-27 technique has been correlated with acid-alkaline balance, it was felt that there may be some acid/alkaline reaction in the body which could help us to understand better what was going on with Sp-21/K-27 technique. With this in mind, investigation took place in the following manner: patients who showed positive therapy localization to Sp-21 and right or left K-27, either individually or together were tested with both acid and alkaline substances in the mouth. For example, a patient with a positive therapy localization to the left Sp-21 which was

neutralized by the right K-27 was asked to therapy localize only to left Sp-21, which would cause the indicator muscle to go weak in that case. An acid substance (betaine HCl, ascorbic acid, phosphoric acid) was placed on the tongue of the patient. An indicator muscle (usually tensor fascia lata) was re-tested to observe for change in strength. Then an alkaline substance (potassium bicarbonate, sodium bicarbonate, alkaline-ash minerals, "Organic Minerals" by Standard Process Labs) was placed on the patient's tongue and Sp-21 was therapy localized and the indicator muscle was observed for change.

It was found that positive therapy localization to left Sp-21 (and/or K-27) would consistently be neutralized by either an acid (or acid ash) substance or an alkaline (or alkaline ash) substance. Further tapping of the appropriate Sp-21 and K-27 points would negate therapy localization and would even negate temporal tap auditing with therapy localization after a short period of time. However, the placement on the patient's tongue of the substance which previously did <u>not</u> cause strengthening of the indicator muscle would now cause recurrence of positive therapy localization to Sp-21 (and/or K-27).

For example, therapy localization to left Sp-21 causes an indicator muscle to weaken; it will be neutralized by T.L. to left (or right) K-27. Removal of the hand from K-27 will leave positive T.L. to left Sp-21, shown by indicator muscle weakness. Placing of hydrochloric acid (or similar acid substance) on the patient's tongue will cause neutralization of the positive T.L. Placing of an alkaline substance on the tongue will not change

positive T.L. Simultaneous tapping of left Sp-21 and the appropriate K-27 is found to rapidly neutralize positive T.L. after 10 to 20 taps. Therapy localization to left Sp-21 with temporal tap audit technique will sometimes cause the weakness of the indicator muscle to recur, indicating a need for further tapping, although oftentimes after a mere 20 taps, temporal tap audit is still negative. At this time, an alkaline substance (such as those mentioned above) is placed on the patient's tongue and the patient again T.L.s to left Sp-21. The T.L. will again be positive in a vast majority of patients. Removal of the alkaline substance from the mouth will cause a negative T.L. response to the left Sp-21. Further tapping of left Sp-21/K-27 in a similar fashion will eventually cause a negation of the alkaline substance causing weakness on left Sp-21 T.L.

The assumption is made that T.L. to Sp-21 will continue to be positive until such time as the adequate number of taps have been performed on Sp-21/K-27. The hypothesis is that there is an end point which may be reached and which may be monitored by the placing of an acid or alkaline substance in the mouth and observing for negation of T.L. to Sp-21. The choice of an acid or alkaline substance for monitoring the end point of tapping is based on the opposite substance that previously neutralized Sp-21 (or Sp-21/K-27) therapy localization.

CASE HISTORY

This technique was communicated to Dr. David Cheetham of Haddenfield, New Jersey. Dr. Cheetham used Sp-21/K-27 tapping on one of his assistants who had severe hay fever of many years'

duration and had been well-treated by a variety of therapies. Dr. Cheetham found it necessary to tap Sp-21/K-27 for a total of seven minutes before the placement of an alkaline substance on his assistant's tongue caused no recurrence of the positive T.L. to Spleen 21. Seven minutes may seem like a long time for treatment, but the response was gratifying. For the first time in twenty-some odd years she was completely allergy-free the following spring, without the use of any acids or other substances.

The alternative may also exist where a positive T.L. of Sp-21 (or Sp-21/K-27) is neutralized by an alkaline substance and positive T.L. of Sp-21 after a short period of tapping returns when an acid substance is placed in the mouth. It is felt that Sp-21 (and K-27) are monitors of acid/alkaline balance in the body. It is impossible to adequately test acid/alkaline balance or pH in the mouths of these patients, due to the introduction of acid/alkaline substances in the mouth as part of the testing procedures. Further investigation should include an investigation as to other methods of testing acid/alkaline balance in response to Sp-21/K-27 activity. It is the author's opinion that Sp-21/K-27 has its ultimate effects in changing body chemistry through a change in the acid/alkaline balance in the patient's system which further induces or activates pH-sensitive enzyme activity to create the changes we observe in such a variety of body chemistries.

REVIEW OF PROCEDURE

1. Find positive therapy localization to Sp-21 and/or K-27.

2. When positive therapy localization is present, an indicator muscle is weak. Place an acid substance on the patient's tongue and re-check the indicator muscle.
3. Place an alkaline substance on the patient's tongue and re-test the indicator muscle.
4. Observe whether acid or alkaline substances neutralize positive T.L.
5. Tap Sp-21/K-27 in the standard fashion, 20 or 30 times.
6. Re-therapy localize Sp-21 (and K-27, if necessary, whichever pattern was previously positive) and place the substance on the patient's tongue which previously did not neutralize Sp-21 T.L. That is, if an acid substance previously neutralized T.L. to Sp-21, use an alkaline substance. If the alkaline substance previously neutralized positive T.L. to Sp-21, use an acid substance. Re-therapy localize, and re-test indicator muscle.
7. If muscle weakens with the acid (or alkaline) substance on the tongue, tap Sp-21/K-27 longer.
8. Tap Sp-21/K-27 points until introduction of acid (or alkaline) substance in the mouth no longer causes positive therapy localization.

CONCLUSIONS

It is felt that the acid/alkaline balance in the body has a central control mechanism which is exquisitely sensitive to the tapping manipulation of Sp-21 and K-27. It is felt that the doctor can re-set the acid/alkaline balance toward a more

homeostatic level by using Sp-21/K-27 points. Certainly the length of time which this technique must be performed can be adequately investigated by the use of introduction of acid/alkaline substance on the patient's tongue after tapping for periods of time. Every patient is different. Some patients require tapping for as little as 15 to 20 times. Other patients require as much as 7 to 8 minutes of tapping. This approach affords us a better opportunity to treat each patient in regard to his biochemical individuality.

Sp-21 and K-27 TECHNIQUE FOR CHANGING BODY CHEMISTRY : A REFINEMENT OF HOW LONG TO DO IT

REFERENCES

[1]Goodheart, George J., Applied Kinesiology 1980 Workshop Manual, Volume 1, privately published, Detroit, 1980.

[2]Goodheart, George J., Applied Kinesiology 1976 Workshop Procedure Manual, privately published, Detroit, 1976.

[3]Goodheart, George J., Applied Kinesiology 1978 Workshop Procedure Manual, privately published, Detroit, 1978.

[4]Schmitt, John R., Joseph W.,Steffey, John H. Price,Margaret A. Strickland, "The Effect of Applied Kinesiological Reflex Tapping Procedure on Oral pH," unpublished paper, presented as requirement for physiology laboratory course, Logan Chiropractic College, August, 1981.

IRON, VITAMIN B-12, AND FOLIC ACID : A CORRELATION OF LABORATORY FINDINGS (COMPLETE BLOOD COUNT WITH DIFFERENTIAL) AND AK FINDINGS

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Abstract: The AK testing methods for iron, vitamin B-12, and folic acid are reviewed. The usefulness of the CBC with differential in aiding in the detection of deficiencies of these three nutrients is discussed, particularly the relationship of B-12 and/or folic acid deficiency to leukopenia associated with neutropenia and relative lymphocytosis. A series of 15 patients, each of whom showed Ak testing for one or more of these substances, is reviewed in light of CBC's with differentials performed after the AK diagnosis was made.

A vast number of patients in the United States are anemic. The anemias which are frequently encountered in a general practice situation are the result of nutritional deficiencies of one or more of the following substances: iron, vitamin B-12, and/or folic acid.

Too often anemic patients are found by accident as a result of a blood screening analysis, including a complete blood count with differential. However, in many cases the CBC signs of anemia are the late signs of deficiency of the various nutritional factors which have been mentioned. This paper will deal with the relationships of iron, vitamin B-12, and folic acid and the development of different types of anemias as seen by complete blood count with differential laboratory findings and how this correlates with methods of applied kinesiological testing for these nutrients.

IRON AND APPLIED KINESIOLOGY

Traditionally a need for iron has been associated with a bilateral tensor fascia lata (TFL) weakness, based on the early observations of Goodheart that any patients with very low hemoglobin (8mg/% or lower) would show this bilateral TFL [1] weakness. This weakness was correlated with a response to oral testing of a nutritional substance containing iron.

This finding was frequently and commonly improperly paraphrased to state that if a patient has a bilateral TFL weakness he would have anemia, and the converse that if he had anemia, he would have bilateral TFL weakness. These paraphrased claims are simply untrue as was, in part, demonstrated by the paper of Dr. Kathy Conable[2] in her work with the students at Logan College showing no correlation between TFL weakness and anemia. However, the sensitivity of the bilateral TFL weakness to iron has been adequately demonstrated and reproduced and the original work of Goodheart which states that pathologically low hemoglobin levels will be associated with bilateral tensor fascia lata weakness still holds true. However, only in the late stages of iron deficiency are changes observed in the CBC.[3] Iron is needed by many, many cells in the body as an active catalyst in the function of many enzymes and metabolic pathways. Only after iron is depleted throughout the body will the effects of its deficit be observable in a lowered red blood cell count and/or hematocrit and/or hemoglobin. Serum ferritin levels, serum iron levels, and total iron binding capacity have also been correlated with depleting iron stores, as discussed by Hochfeld.

In the past we found relatively few patients requiring an iron supplement. However, in recent years, the effectiveness of measuring the requirement of iron in the body through AK testing methods has been rapidly increased. The relationship of iron to the electron poising mechanism as discussed by J.P. Isaacs[4] is well established. Further, the significance of the electron poising mechanism to the right brain/left brain activity in the patient has been correlated by Goodheart[5] and Schmitt.[6] Iron is one of the so-called "long term set points" as discussed by Isaacs, Goodheart and Schmitt, and has been shown by Goodheart to have effects on muscle testing when both right brain and left brain activity are involved. Many bizarre right brain/left brain patterns are neutralized by the patient insalivating a supplement high with an adequate supply of iron.[6]

Further indications for iron have been elucidated in 1980 by Goodheart[7] based on the concept of aerobic (repeated) muscle testing. Aerobic testing has shown an indication for iron in many patients for whom it was previously unsuspected. The number of patients who require iron as a supplement based on left brain/right brain activity neutralization and/or aerobic muscle testing completely overshadows the significance of the bilateral tensor fascia lata weakness as an indication for iron (although it does not negate its validity). We find scores of patients requiring iron using these other methods of testing, only a handful of whom show bilateral tensor fascia lata weakness.

VITAMIN B-12 AND AK

Vitamin B-12 is a substance which does not have a specific muscle weakness related to it. Therefore, simple muscle testing standards of evaluation led to very few observations of patients requiring vitamin B-12. However, vitamin B-12 is a major therapy utilized by doctors of all professions around the world. Vitamin B-12 injections have a great reputation and use in patients with fatigue, in different types of anemias, and just general lethargy and ill-health.

In 1978 Goodheart discovered that vitamin B-12 has a specific pattern of muscle activity related to its need, although not a specific muscle related to it.[8] The relationship of vitamin B-12 to the myofascial sheath shortening technique has been well demonstrated and gives us an excellent tool for evaluating the need for vitamin B-12. However, many patients seem to have adequate vitamin B-12 in their diet (5 micrograms/day is the average requirement and the average meat eater has 5 to 30 micrograms per day in his diet), yet still show fascial sheath shortening which responds to oral ingestion of vitamin B-12 on a muscle testing basis.

It is felt that many of these patients have improper small intestine activity and/or improper GI acidity which interferes with the normal absorption of vitamin B-12, which is a very complicated and time-consuming (3 hours) process. Patients who show a need for vitamin B-12 normally require an oral form of B-12 in combination with stomach substance (containing intrinsic factor). These patients will show a negation of fascial

sheath shortening involvement upon ingestion of vitamin B-12 which may recur if small intestine neurolymphatic activity is required. Many patients who show fascial sheath shortening can have the fascial sheath shortening neutralized by careful investigation of small intestine activity via the quadriceps muscle.

Weakness of the quadriceps which is neutralized by neurolymphatic therapy localization can be treated by prolonged neurolymphatic activity, with resulting strengthening of the quadriceps and neutralization of fascial sheath shortening in patients who otherwise have adequate vitamin B-12 in their diets. It is assumed that the dietary vitamin B-12 is adequate in these patients and simply that their small intestine absorption is so abnormal that the vitamin B-12 absorption process does not take place and the B-12 passes through their intestinal tract unabsorbed, thereby creating the first neuromuscular sign of a vitamin B-12 deficiency, i.e., fascial sheath shortening. Many patients require vitamin B-12 supplementation but the majority of these patients who have adequate vitamin B-12 in the diet only need it for a short period of time when they also receive adequate treatment of small intestine and the rest of the gastro-intestinal tract using AK methods.

It is wise to always make fascial sheath corrections to those muscles in which it is indicated in spite of the fact that the fascial sheath shortening technique is neutralized by ingestion of vitamin B-12 and/or small intestine neurolymphatic activity.

FOLIC ACID

Folic acid has been shown by Goodheart in 1978[9] to be an important nutrient in relating right brain and left brain activity. Folic acid need may be determined by kinesiological testing methods

when one has corrected a specific reflex pattern (i.e., neuro-lymphatic, neurovascular) so that it no longer therapy localizes in the usual fashion. A need for folic acid is demonstrated by a specific pattern of two-handed therapy localization to a previously involved nerve receptor or neurological circuit breaker. This pattern depends on whether the receptor is on the right side of the body or the left side of the body.

For example, if there is a right psoas weakness with a right neurolymphatic reflex involvement that T.L.'s with the right hand, the neurolymphatic is corrected in the standard fashion. T.L. to that reflex with either hand will now be negative. The need for folic acid is found when the right hand is placed over a corrected reflex on the right side of the body and the left hand is placed on top of the right hand and an indicator muscle weakens. Or when the left hand is placed on a previously active reflex on the left side of the body and the right hand is placed on top and an indicator muscle weakens. It is two-handed T.L., right on the right side of the body and the left hand on top, or left hand on the left side of the body and the right hand on top, to a previously active neurolymphatic (or other) reflex point which causes an indicator muscle to weaken. This weakness occurs in any indicator muscle, not just the muscle in question, and is a definite indication for folic acid. Insalivation of folic acid orally will neutralize this two-handed T.L. pattern.

The two-hand T.L., right on right and left on top (or left on left and right on top) gives us a good clue as to the importance of folic acid in right brain/left brain abnormalities and communication between both sides of the body and brain. Folic acid has also been

found as a nutrient which is present in the case of recurrent lateral hyoid involvement.[9]

We will now explore the relationship of iron, vitamin B-12, and folic acid to the development of the red blood cells and the white blood cells[10] and how the requirements for these nutrients may be identified based on analysis of the complete blood count with differential.

RED BLOOD CELL PRODUCTION AND IRON

Red blood cells (RBC's) are produced primarily in the bone marrow of the long bones of the body. The RBC precursor cell is a fairly large cell which goes through a variety of metamorphic changes until it comes to be the bi-concave disc with which we are familiar. As the RBC matures, it gets smaller. Therefore, any large RBC would be indicative of immature red blood cells. A pattern of large RBC's is known as macrocytosis.

Hemoglobin requires iron as part of its molecule. An adequate supply of hemoglobin depends on an adequate supply of iron. Initially, a low iron supply will cause a diminished amount of hemoglobin production, which will affect RBC's by causing them to be produced in lesser numbers, all other things being equal. Initially, iron deficiency will not produce any changes in the size of the cells, but there will be lower numbers of RBC's, lower hemoglobin, and lower hematocrit.

In early iron deficiency anemia, mild iron deficiency anemia, or acute blood loss, there will be a lowered red blood cell count, lowered hemoglobin, and lowered hematocrit. In late, severe iron deficiency anemia, the RBC's will actually become smaller (microcytic),

with concommitant reduction of hemoglobin and lesser numbers of cells. The hematocrit will also be depressed. (Vitamin B-6 deficiency and zinc deficiency can also create a microcytic anemia due to their need for the synthesis of hemoglobin.) The iron deficiencies which we normally see are frequently found to be involved with deficiencies of other hematopoietic nutrients, B-12 and folic acid. However, many persons just simply require more iron.

The fact that a patient shows an AK requirement for iron does not necessarily correlate with the fact that that patient will be anemic. However, as can be seen in Chart 1, a high percentage of our patients who show AK testing for iron will also show a lowered RBC count, usually with a normochromic, normocytic anemia pattern. These patients may or may not show lowered hematocrit or lowered hemoglobin. As a rule, the majority of patients who show AK testing requirement for iron will show one or more of these three factors to be below normal limits. Some patients show a need for iron, however, that have absolutely no blood abnormalities which can be identified. The presence of any <u>one</u> of the three factors: lowered RBC count, lowered hematocrit, lowered hemoglobin, would lead one to investigate the need for iron. An iron requirement can be present, however, with no hematological abnormalities since iron is necessary on a metabolic level in so many cells in the body.

We use the red blood cell count, hemoglobin and hematocrit as an aid to determining dosage in our iron deficient patients. If all of these are normal or close to normal, we keep that patient on a lower dosage of iron. If the hematocrit, hemoglobin,

and red blood count are severely depressed, we will increase the amount of iron. We try to be careful not to overdose the patient on iron, since hemochromatosis is becoming a problem in our country,[11] as a result of excessive fortification of iron in food sources and the use of iron in supplements.

We then re-monitor the red blood cell count, hemoglobin, hematocrit periodically and ascertain that the patient's blood has returned to the normal range before withdrawing the iron supplement. We further follow the patient after taking them off the iron supplement by using AK evaluation to ascertain that the iron requirement does not recur. In our experience, about 70% to 80% of those patients showing an AK testing requirement for iron will show some alteration of the red blood cell count, hemoglobin, or hematocrit. A large number of these patients also show requirements for either vitamin B-12 or folic acid.

VITAMIN B-12 AND FOLIC ACID

As red blood cells mature, they get smaller. A large red blood cell is an immature red blood cell and if there is a deficiency of those factors which cause the maturity of the red blood cell, we may also get an anemia with many large red blood cells, known as a macrocytic (large cell) anemia. Macrocytic anemias may be identified by monitoring the MCV (mean cellular volume) index which accompanies the complete blood count. An MCV of high normal or above the normal range (normals: high normal, men : 94; high normal, women: 99) is indicative of a large number of immature red blood cells. The nutritional factors which are involved in the maturation of the red blood cells are vitamin B-12 and folic acid. A deficiency of either

of these nutrients will lead to a macrocytic anemia. Many times there are only indications of mild macrocytosis when there is a mild deficiency of vitamin B-12 and/or folic acid, yet these requirements are readily shown in AK testing, as previously described. It is therefore interesting to note that some of these patients' CBC's with differentials show no alteration from normal with the exception of only a slight macrocytosis. This would probably be indicative of early stages of vitamin B-12 and/or folic acid deficiency. Serum B-12 and serum folate assays are rarely abnormal in these patients. However, if allowed to continue, this deficiency would certainly lead to a full-blown macrocytic anemia, with concommitant changes in other cellular structures and indices and serum levels.

THE WBC DIFFERENTIAL

A valuable tool in the assessment of the vitamin B-12 and folic acid requirements of the body is often overlooked. The white blood cell count and the WBC differential are tests that are frequently ignored by physicians unless the WBC is very high (indicating the presence of infection, pathology, etc.) White blood cells are of two basic types. These are the granulocytes and the agranulocytes. Granulocytes, which have many granules in their cytoplasm, are produced in the bone marrow, in the same tissue that produces red blood cells. The most important of the granulocytes is known as the polymorphonuclear neutrophil, more commonly known as the PMN's, polys, or just plain neutrophils. Other granulocytes are eosinophils and basophils.

The other group of white blood cells are known as the agranulocytes, due to their clear cytoplasm. These cells are

made primarily in the lymphatic tissue of the body (thymus, spleen, and other lymph tissues). These cells are primarily the lymphocytes and the monocytes. The neutrophils and the lymphocytes make up 90% of the white blood cells we see in the differential. The normal differential values for neutrophils, which are made in the bone marrow, are 55% to 75% of white blood cells, and the normals for lymphocytes, which are made in lymph tissues, are 25% to 40% of the white blood cell count. (For the purposes of this paper, the monocytes, eosinophils and basophils are rarely important in analyzing the need for the nutrients in this discussion, so we will ignore them for now. They have other significancies which are described in standard texts on hematology.)

Therefore, if we look at two things: 1) the level of the white blood count, and 2) where 90% of the white blood cells are coming from (i.e., the bone marrow and the lymph tissues) we can deduce whether or not there is a problem with certain factors relating to the local production of the various WBC's. In other words, if there is a deficiency of neutrophils (lower than 55% of the differential), we can assume that there is lowered production of WBC's in the bone marrow. On the other hand, if there is a deficiency of lymphocytes, (less than 25% of the differential) we can assume that there is faulty activity occurring in the lymphatic tissue (usually thumus, sometimes spleen).

When we see a relatively low white blood count (leukopenia) we must be concerned as to why this deficiency of white blood cells exists. Any white blood count of 5500 or below should cause one to be suspicious of a faulty production of WBC's. In

the presence of leukopenia, we can analyze the differential, primarily the neutrophils vs. the lymphocytes, to identify the source of faulty white blood cell production. For example, assume that the white blood cell count is 3600 and the lymphocyte production of the body is normal, but leukopenia is present due to a lack of adequate supply of neutrophils. (This is called neutropenia.) We will see a differential where neutrophils are less than 55%. But the lymphocytes which are present in normal absolute numbers will appear to be elevated (this is called lymphocytosis) because there are so few neutrophils present. In other words, there will be a relative lymphocytosis accompanying a neutropenia in the presence of an overall leukopenia. This is a common pattern seen in B-12 and/or folic acid deficiencies, the significance of which is usually overlooked.

The neutrophils (and the basophils and the eosinophils) are produced in the bone marrow, using many of the same mechanisms that red blood cells use. This includes a requirement for vitamin B-12 and folic acid which is just as important for the production of these WBC's (granulocytes) as it is for the RBC's. (Iron is not required, however, for WBC production, because there is no hemoglobin in WBC's.) If there are inadequate supplies of vitamin B-12 and/or folic acid, the only indicator one may see in the blood is a tendency toward a lowered overall WBC count with a lowered number of neutrophils and a relative increase in the number of lymphocytes. (Again, this is due to the fact that there are fewer neutrophils present and this creates the appearance of an increased number of lymphocytes, even though

a normal number of lymphocytes is actually present.) Oftentimes this is the only sign present in a blood scan of a deficiency of vitamin B-12 and/or folic acid. That is, a slight leukopenia with a relatively elevated lymphocyte count (lymphocytosis) in light of the lowered neutrophil count (neutropenia) in the differential.

THYMUS GLAND INVOLVEMENT

The differential is also helpful in identifying faulty lymphatic systen function in patients who are frequently seen to have chronic problems and/or recurrent infections. The lymphatic system is the source of lymphocytes and monocytes. In the patient with a depressed thymus activity (or occasionally depressed spleen function) there will often be a normal or slightly low WBC count, with the presence of a lymphocytopenia; i.e. lymphocytes less than 25%. Any time the lymphocyte differential is less than 25%, with a normal or low WBC count, one should suspect involvement of the thymus (and/or spleen) and test the infraspinatus and associated reflex points and glandular based supplements accordingly. The presence of a lowered thymus function is very common since it is one of the triad of events present in chronic stress states.

These patients tend to have chronic disorders of a variety of natures, a list as long as your arm. They also tend to be the patients with recurrent infections. Everything done in a WBC count and differential and CBC might be normal, with the exception that the lymphocytes are only 22%, as opposed to 25%, which is their low normal. These patients will demonstrate a weakness of the infraspinatus, either in the clear, or as a 51%er and will be helped by thymus tissue (and oftentimes accompanying parotid tissue[5]).[12] The WBC count may be elevated in cases of infection

and in these cases the alterations in the differential may be a clue as to the type of infection present. However, most frequently we see patients who are in chronic states of ill-health who have lowered white blood cell counts, lowered resistance, and nutritional deficiencies. The white blood cell count and differential is the most often overlooked of the simple tests because most people are not aware of the diagnostic value for nutritional requirements that it represents.

EXPLANATION OF CHARTS

Accompanying this paper you will see CBC's with differentials of a number of patients who were found by AK testing to show a need for a certain nutrient on the date given in the left-hand column. A CBC differential was drawn on that date and sent to the lab. The results are shown on the chart. In parentheses, after the person's initials, are occasionally listed nutrients which were found necessary for those patients on subsequent visits and the dates that these substances were started. These patients' CBC's including differentials, and especially the differential, were the clue for finding further nutritional requirements which would likely have been otherwise overlooked had the relationships of the CBC with differential to nutritional factors not been known. As you can observe, a number of these patients required more than one of the hematopoietic agents. The differential was the clue in many of the cases, but in some, macrocytosis was the only clue present.

Following will be brief discussions of each of the 15 cases presented on the chart with analysis of the patterns which confirmed the requirements of each patient. You will see that

7. Iron need confirmed by low normal RBC. Elevated monocytes unexplained.
8. Folic acid need confirmed by increased MCV; also suggested by low RBC, Hgb. and Hct.
9. Folic acid need confirmed by low WBC and differential shift. Also suggested by low Hgb. and Hct.
10. Folic acid need suggested by differential; also suggested by low RBC and low normal Hct.
11. B-12 need confirmed by differential shift; also suggested by low RBC.
12. B-12 need confirmed by low WBC and shift in differential; also suggested by low RBC and Hct.
13. B-12 need confirmed by high MCV.
14. Thymus need confirmed by high WBC with low lymphocytes
15. Thymus need confirmed by low lymphocytes.

there are many alterations among these patients. Those in a box are out of normal ranges, while those which are underlined are high or low normals which are close to being outside normal limits. It is not the point of this paper to say that all patients with a certain nutritional deficiency will have the same CBC with differential pattern. However, slight alterations in the CBC with differential will frequently give us the clue to the underlying missing link in a patient's health care problems. These missing links may be confirmed by AK testing and analysis by oral insalivation of the suspected nutrients, giving us an additional tool in understanding the health problems of our patients.

In the left hand column are the dates on which the AK need for the supplement was found and the blood drawn. 1, 2, and 3 also showed subsequent needs for the nutrients in parentheses on the date noted.

1. Iron need confirmed by low RBC, low normal Hgb, low normal Hct. Folic acid need recognized by low WBC and differential shift.
2. No nutrient indications seen in blood profile.
3. Iron need not seen. B-12 need recognized by low WBC and low polys (neutrophils).
4. Iron need confirmed by low normal RBC and Hct. Low polys and high monocytes unexplained.
5. Iron need confirmed by low RBC and Hct and low normal Hgb.
6. Iron need confirmed by low normal RBC. Increased MCV, bands, and eosinophils unexplained.

AK INDICATION FOR IRON

PATIENT/DATE (SEX)	WBC $\times 10^3$ mm^3 M 3.6-10.5 F 3.6-10.5	RBC $\times 10^6$ mm^3 M 4.7-6.1 F 4.2-5.4	HGB g DL M 14.0-18.0 F 12.0-16.0	HCT % M 42-52 F 37-47	MCV μ^3 M 80-94 F 81-99	MCH $\mu\mu$ g M 26-34 F 26-34	MCHC % M 31-37* F 31-37	POLYS 55-75%	BANDS 2-5%	LYMPHS 25-40%	MONOS 1-5%	EOS 1-4%	BASOS 1%
1) E.H.- 8/29/80 (F) (folic acid 10/2/80)	[3.6]	[4.17]	12.2	37.4	89	29.2	32.7	[46]	-	[47]	4	2	1
2) K.L.- 7/31/80 (F) (B_{12} 11/20/80)	7.2	4.77	14.8	43.1	90	30.5	34.2	58	-	37	3	2	-
3) R.B.- 9/18/80 (M) (B_{12} 10/1/80)	[3.7]	4.94	15.7	44.3	90	31.7	35.2	[51]	4	37	[7]	1	-
4) S.P.- 7/21/80 (F)	6.3	4.20	13.0	37.8	87	31.4	35.0	[52]	-	38	[7]	3	-
5) M.M.- 11/21/80 (F)	7.9	[3.89]	12.1	[36.4]	93	30.6	33.4	71	-	25	2	2	-
6) J.M.- 1/6/81 (M)	9.5	4.80	15.6	47.6	[101]	32.8	32.1	62	[15]	12	4	[6]	1
7) D.H.- 10/15/80 (M)	7.2	4.80	14.8	43.5	91	30.6	33.8	63	-	26	[7]	3	1

PATIENT/DATE (SEX)

AK INDICATION FOR FOLIC ACID

	WBC x $10^3 \cdot mm^3$ M 3.6-10.5 F 3.6-10.5	RBC x 10^6 mm^3 M 4.7-6.1 F 4.2-5.4	HGB g DL M 14.0-18.0 F 12.0-16.0	HCT % M 42-52 F 37-47	MCV μ^3 M 80-94 F 81-99	MCH $\mu\mu$ g M 26-34 F 26-34	MCHC % M 31-37 F 31-37	POLYS 55-75%	BANDS 2-5%	LYMPHS 25-40%	MONOS 1-5%	EOS 1-4%	BASOS 1%
8.)J.F.- 8/20/80(M)	7.5	[4.20]	[13.6]	[40.7]	[97]	32.3	33.2	69	-	26	3	1	1
9.)M.H.- 10/2/80(M)	[4.8]	4.82	[12.8]	[37.0]	89	32.2	34.4	[46]	-	[41]	[8]	4	1
10.)M.T.- 7/18/80(F)	5.7	[4.17]	12.8	37.0	89	31.5	35.9	[53]	-	38	[6]	2	1

AK INDICATION FOR VITAMIN B_{12}

11.)A.B.-8/20/80 (F)	7.8	[4.07]	13.6	39.2	96	33.3	34.7	[53]	-	40	2	4	1
12.)J.S.-5/14/80 (F)	5.3	[3.93]	12.3	[36.1]	91	31.4	34.0	[49]	-	[45]	3	2	1
13.)F.C.-1/22/81 (F)	6.9	4.51	15.0	46.7	[103]	32.9	32.1	58	-	35	4	2	1

AK INDICATION FOR THYMUS

14.)R.Mc.-6/18/80(F)	[13.0]	4.47	13.1	39.1	90	29.7	33.3	[76]	3	[12]	[9]	-	-
15.)A.L.- 9/2/80 (F)	7.1	4.55	14.1	42.4	93	31.1	33.4	72	-	[23]	4	-	1

REFERENCES

[1]Goodheart, George J., The Cranial Sacral and Nutritional Reflexes and Their Relationship to Muscle Balancing, privately published, Detroit, 1968.

[2]Conable, Katherine M., "Hemoglobin Levels and the Tensor Fascia Lata Muscle," ICAK Collected Papers - 1978 Summer Meeting, 1978.

[3]Hochfeld, William L., "The Detection of Sub-Clinical Iron Deficiency," Nutritional Consultants 2:2, September/October, 1980, p. 51.

[4]Isaacs, James P. & John C. Lamb, "A Précis on Cellular Electron Poising, Ergodization , and Molecular Quantization," 6th Annual Trace Mineral Conference, University of Missouri, 1974.

[5]Goodheart, George J., Applied Kinesiology 1979 Workshop Procedure Manual, privately published, Detroit, 1979.

[6]Schmitt, Walter H., Jr., "Clinical Observations Regarding Dorsal vs. Palmar Therapy Localization," ICAK Collected Papers - Winter Meeting, 1981.

[7]Goodheart, George J., Applied Kinesiology 1980 Research Manual, privately published, Detroit, 1980.

[8]Goodheart, George J., Applied Kinesiology 1978 Workshop Procedure Manual, privately published, 1978.

[9]Goodheart, George J., personal communications.

[10]These principles are well described in any histology or physiology text.

[11]Isaacs, James P., tape of lecture, 1976, available from Insta-Tape, P.O. Box 2926-D, Pasadena, California 91105. Catalogue #SUN 761

[12]Schmitt, Walter H., Jr., Common Glandular Dysfunctions in the General Practice, privately published, Chapel Hill, N.C., 1981.

The Effect of Applied Kinesiological Reflex Tapping Procedure on Oral pH

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ABSTRACT

George J. Goodheart, D.C. has observed clinically that body chemistry can be influenced by a reflexive tapping procedure on specific acupuncture points. Upon investigation he has found a high percentage of therapy localization activity for Spleen 21 and Kidney 27 in altered blood chemistry states. Through this experiment we propose to investigate the effects of reflexive tapping on oral pH when used as a therapeutic procedure without benefit of other treatment.

ACKNOWLEDGMENTS

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INTRODUCTION

Many individuals have symptoms of either acidosis or alkalosis. Since pH changes relate directly to the nervous system in that acidosis is an overactivity of the sympathetic nervous system and alkalosis is an overactivity of the parasympathetic nervous system, changes in acid-alkaline balance are very important.[1]

In a survey of patients in Southern California Dr. Harold Hawkins found that 48% were too alkaline and 32% were too acid. In this survey he was not refering to the stomach but to the blood stream. He found that the pH of the saliva closely parallelled the blood whereas the urine did not adequately reflect the blood reaction.[2] The measurement of oral pH has the added advantage of being a more convenient method for the doctor to obtain and certainly easier on the patient.

Dr. George Goodheart has followed up this survey with research of his own and has found that through a manipulative tapping procedure performed on acupuncture points Spleen 21 and Kidney 27 could effect changes in blood chemistry.

Spleen 21 is the common connecting point for all meridians and Kidney 27 is the commonly associated point for all spinal levels. Investigation found a high percentage of therapy localization activity for Spleen 21 and K27 in altered blood chemistry states.[3] Identification by therapy localization at the wrist both with and without breath holding gave good results when followed by proper treatment of appropriate acupuncture points, but blood chemistry did not always follow. But adding tapping of therapy localization, identified as Spleen 21 and Kidney 27, yielded "phenomenal" though frequently temporary major changes in blood chemistry.[4]

Dr. Goodheart therefore believes, in logical progression of this theme, that the reflex tapping procedure should also effect oral pH. The proper research to support the validity of this procedure is lacking. We hope that the research reported in this paper will help to bridge the gap between clinical observation and documentable fact. Our investigation will follow the basic pattern set by Dr. Goodheart in his own research done on blood chemistry changes.

The positive results that the researchers in this experiment would like to see are abnormally high or low oral pH readings to approach a more normal range in a matter of a few minutes of performing the tappings. The normal saliva pH range is about 6.5-7.0[5] or 6.3-6.9[6] depending upon the reference stated.

Hopefully, more research will follow this paper, and new light will continue to be shed upon this potential therapeutic treatment for altered body chemistries that could be easily administered by any chiropractor.

METHODS

The following procedure was performed upon 34 right handed people who were chosen at random. In order to rule out the variable results that a left-handed individual might possibly show, only right handed people were used. There were also two control groups totalling twenty additional right-handed subjects. The sample size included both males and females.

There were four main responsibilities in this experiment. One person (Experimenter A) is needed to perform the testing of the muscle. One person (Experimenter B) is needed to administer the oral pH test to the subject. One person (experimenter C) is needed to perform the tapping procedure. One person (Experimenter D) is needed to record the data. These duties remain constant throughout the length of the experiment in order to not affect the test results by altering the manner in which a muscle test or tapping procedure is administered.

The format of this experiment is that of a double-blind study in which not only is the subject naive in what is being tested, but Experimenter D, the one who records the oral pH and its changes, does not know what kind of treatment the subject has received.

Only subjects were used who had not eaten for two hours prior to the experiment.

In performing the test for oral pH, a digital ionalyzer (Model 801 A) from Orion Research was used with an oral pH meter attachment. (See figure 1.)

The procedure for the experimental group is as follows:

1. Instruct the subject to rinse his mouth out with water immediately before beginning the experiment.

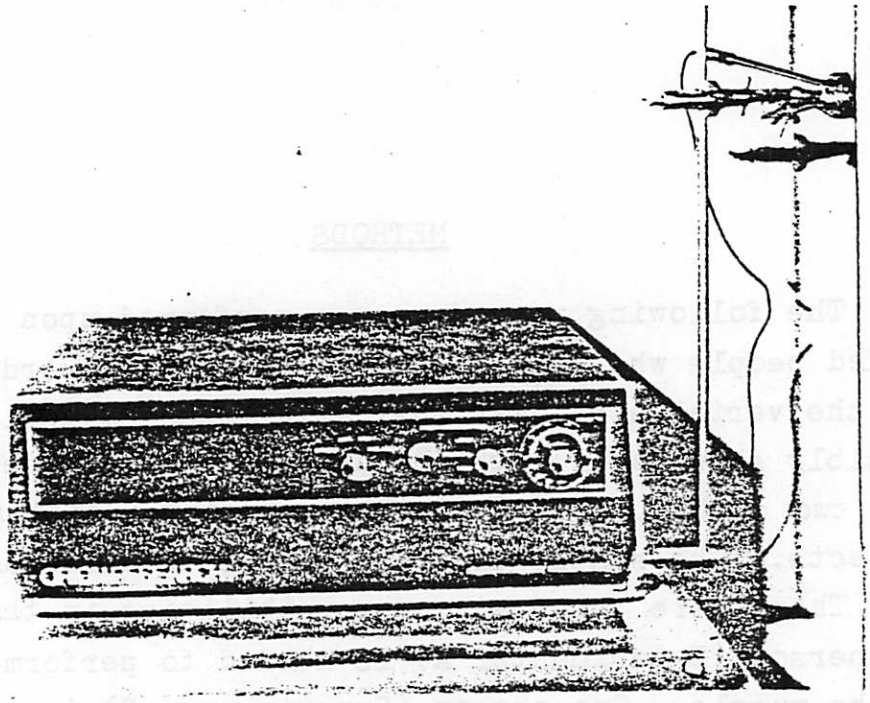


Figure 1: Digital Ionalyzer with oral pH electrode from Fisher Research, Cat.#13-639-252.

2. With the subject in a supine position, Experimenter B measures the oral pH by placing the tip of the oral pH meter under the subject's tongue. Experimenter D records the oral pH as it is shown on the digital ionalyzer.

   Note: Due perhaps to dryness under the tongue, it was more difficult to obtain the oral pH of some subjects than others. Therefore the subjects were sometimes told to make sure there was some saliva underneath their tongue. Also, since in some subjects the oral pH seemed to fluctuate widely upon insertion of the oral pH meter, the average reading where the pH levelled off and began to stabilize was taken as that subject's oral pH for that particular reading.

   (See figures 2 and 3.)

3. Through the use of standard Applied Kinesiological muscle testing methods, Experimenter A tests the strength of the tensor fascia lata muscles. The muscles are recorded as being either strong or weak.

   Note: Manual muscle testing as used in applied kinesiology requires the contraction of the muscle being tested against the examiner's pressure. The purpose of the test is to determine the "locking" capability of a muscle against a testing pressure. When the muscle being tested

Figure 2.

Figure 3.

Figures 2 and 3: Measurement of oral pH and recording of data, respectively.

has poor locking capability, the examiner perceives the muscle to be weak.[7] (See figure 4.)

Note: In order not to psychologically influence the strength of the subjects' muscles, Experimenter D, the data recorder, observed the testing procedure as it was performed. Generally, Experimenter A, the muscle tester, would nod his head positively or negatively to indicate strength or weakness.

Note: The tensor fascia lata muscle was used as the indicator muscle in this experiment because the subject's hands needed to remain free for the experiment, and it is also an easy muscle to isolate and test with accuracy.

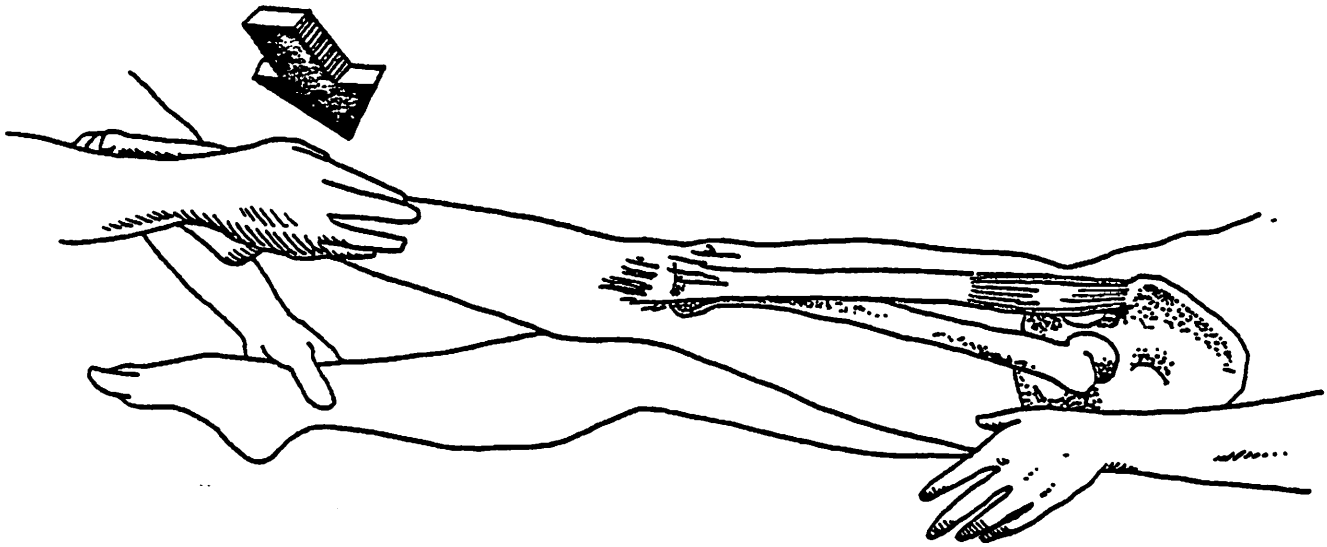


Figure 4: In the tensor fascia lata test, the pressure is directed medial to just anterior of the opposite ankle.

4. The subject's left hand is placed on acupuncture point Spleen 21 on the left located between the seventh and eighth ribs along the midaxillary line. The tensor fascia lata muscle is tested and the results of muscle strength or weakness are recorded. (See figure 5.)

   Note: When a patient touches an area which is not functioning properly, there will be a change in muscle strength observed on manual muscle testing. This phenomenon, called therapy localization, was first observed by Goodheart.[8] Even though the exact mechanisms of therapy localization are unknown, it has become a valuable empirical tool in understanding the interrelations of the systems, organs, and glands of the body.[9] Although there is significant evidence that therapy localization is correlated with electromagnetic energy, there

has been a suggestion by Goodheart[10] that it is neurological in nature. The purpose of the therapy localizations in this experiment is to determine the points of reflex tapping later in the procedure. The form of therapy localization used is the three finger contact, keeping the thumb and little finger away from contact with the body.

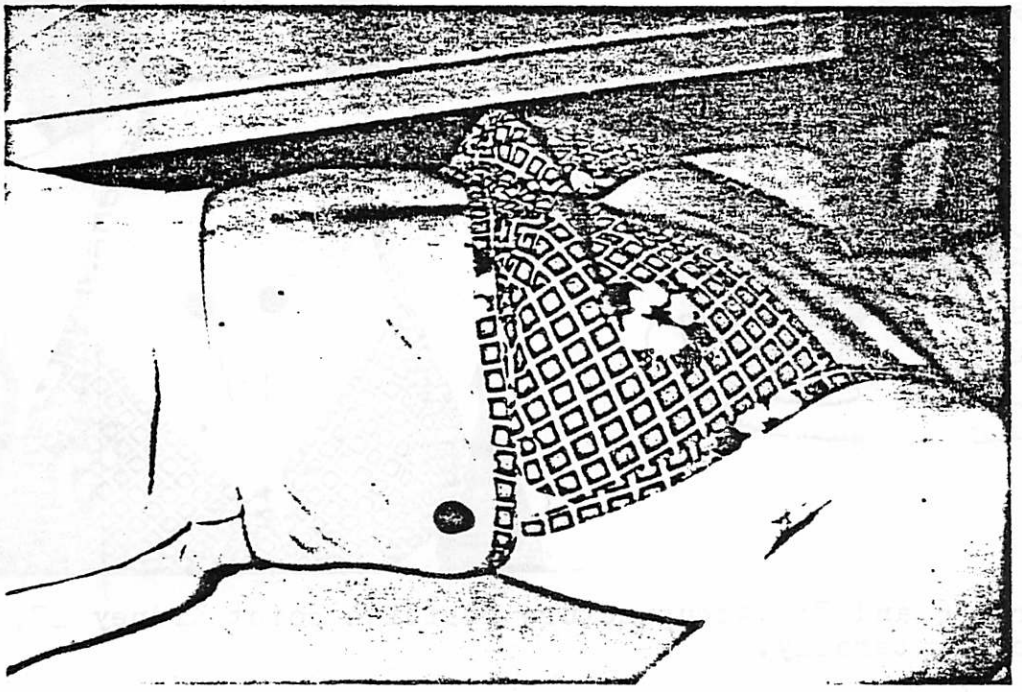
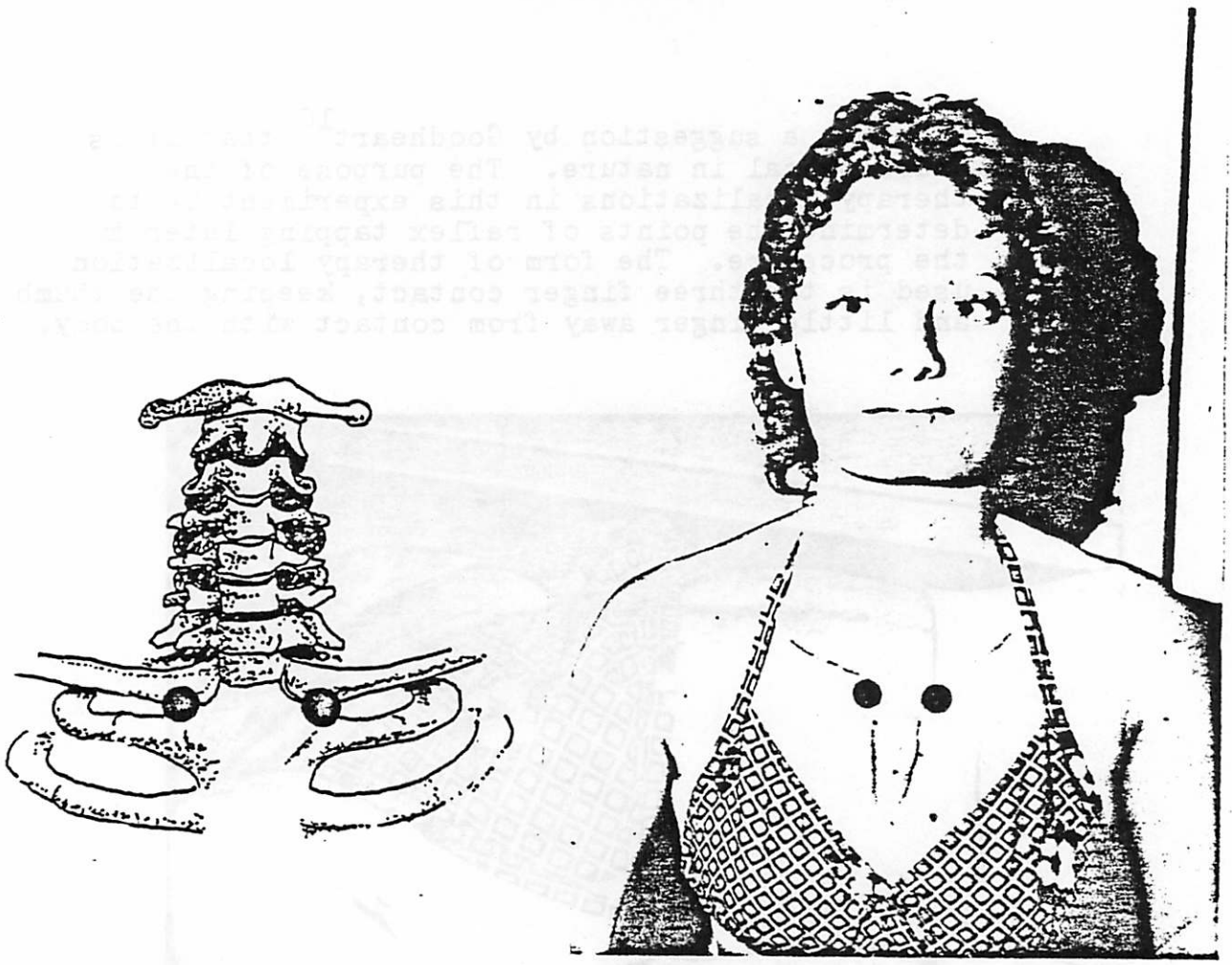


Figure 5: Acupuncture meridan point Spleen 21 on the left side of the body.

5. The subject therapy localizes to the acupuncture point Kidney 27 (K.27) on his right side with his right hand. The tensor fascia lata is muscle tested and the results are recorded.

   Note: Goodheart describes K27 as the switchboard between the two sides of the body.[11] In each of the therapy localizations, Experimenter B places the subjects fingers on the correct spot without telling them the identity of the spot or the purpose of the experiment in order not to bias the results in any way.

   Note: K27 is the 27th and last point on the kidney meridian, located at the junction of the sternum, clavicle and first rib. (See figures 6 and 7.)



Figures 6 and 7: Accupuncture meridian point Kidney 27, shown bilaterally.

6. The subject therapy localizes to K27 on the left with his right hand. The tensor fascia lata is muscle tested and the results are recorded.

7. The subject therapy localizes to K27 on the left with his left hand and therapy localizes to Sp. 21 on the right with his left hand. The tensor fascia lata is muscle tested and the results are recorded.

8. The subject therapy localizes to Sp. 21 on the left with his left hand and simultaneously therapy localizes to K27 on the right with his right hand. The tensor fascia lata muscle is tested and the results are recorded.

   Note: In each of the muscle tests, the tensor fascia lata muscle is tested bilaterally.

9. The subject therapy localizes to Sp. 21 on the left with his left hand and simultaneously therapy localizes to K27 on the left with his right hand. (See figure 8.) The tensor fascia lata is muscle tested and the results are recorded.

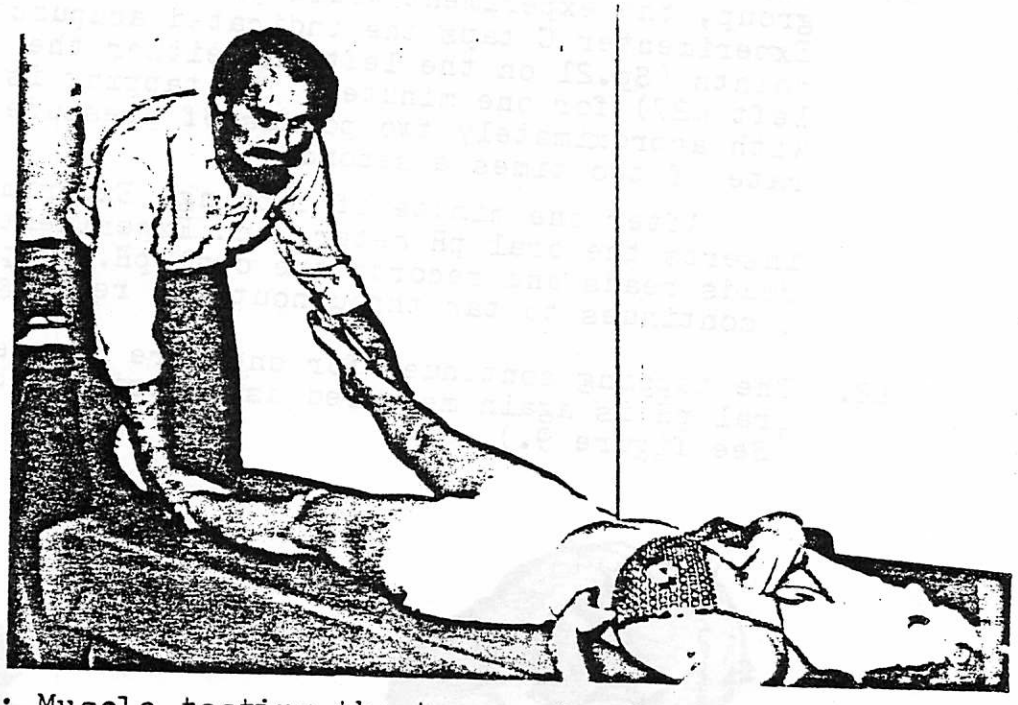


Figure 8: Muscle testing the tensor fascia lata with therapy localization of Sp. 21 on the left and K27 on the left.

10. With the subject remaining in a supine position, Experimenter B again measures the oral pH by placing the tip of the oral pH meter under the subject's tongue. Oral pH is recorded by Experimenter D.

Note: At this point, Experimenter D refers back to the results of the muscle tests in steps 5 and 6, where the subject therapy localized to K27 on the right and then on the left. If either of these produced a positive therapy localization, he instructs Experimenter C, who performs the tapping, to tap K27 on that side. If neither K27 therapy localizes, Experimenter C taps K27 on the right side. A positive therapy localization is determined by a strong muscle going weak or a weak muscle, as initially tested, becoming strong. Additionally, Experimenter C is to tap also Sp. 21 on the left at the same time.

After communicating to Experimenter C, by code so as not to alert the subject, which side was the side to tap, Experimenter D retires behind a partition where he can still read the

oral pH meter but cannot see whether Experimenter C performs the experimental tapping, a bogus tapping, or simply lets the patient lie comfortably for the duration of the experiment.

11. If, however, the subject was in the experimental group, the experiment would proceed as follows: Experimenter C taps the indicated acupuncture points (Sp.21 on the left and either the right or left K27) for one minute. The tapping is done with approximately two pounds of pressure at the rate of two times a second.

    After one minute of tapping, Experimenter B inserts the oral pH meter, and Experimenter D reads reads and records the oral pH. Experimenter C continues to tap throughout the reading.

12. The tapping continues for one more minute and the oral pH is again measured as described above. (See figure 9.)

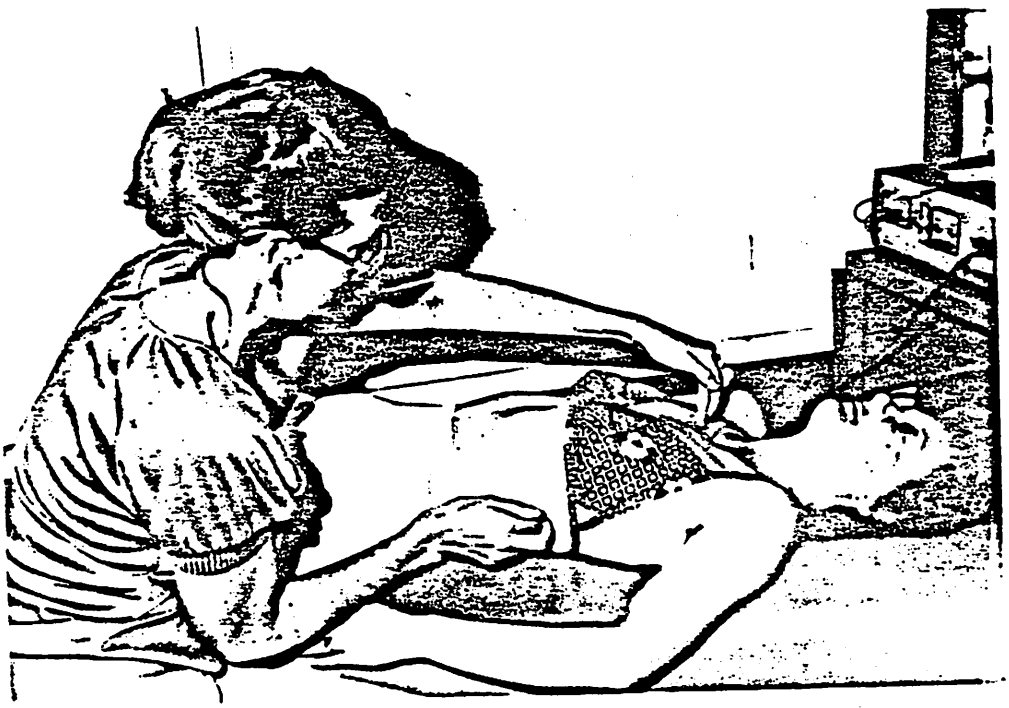


Figure 9: The tapping procedure being done on Sp. 21 on the left and K27 on the left.

13. The tapping continues for one final minute, making a total of three minutes of tapping. The oral pH is then read and recorded.

14. The subject then rests quietly for five more minutes. The oral pH is read and recorded for the final time and the subject is allowed to leave.

The procedure for Control group A is as follows:

1. The same procedure is used as in the experimental group in steps 1-10.
2. However, the tapping procedure is not done on this control group. For steps 11-13, the subject is to lie quietly with his oral pH being measured at one minute intervals.

   Note: There were 11 subjects in control goup A.

   Note: Even though the tapping procedure was not performed on this control group, Experimenter C remained by the side of the subject during the time that the tapping would have been performed. Therefore, Experimenter D was not aware when a subject was in the control group and when he was not.

The procedure for Control group B is as follows:

1. The same procedure is used as in the experimental group in steps 1-10.
2. However, instead of tapping the acupuncture points Sp. 21 and K27 as in steps 11-13, Experimenter C taps two other points on the subject's body that are not known acupuncture points. The points chosen in this experiment are the body of the right rectus femoris and the body of the posterior deltoid on the left. The same timing and oral pH recording procedure is performed as these bogus points are tapped. (See figure 10.)

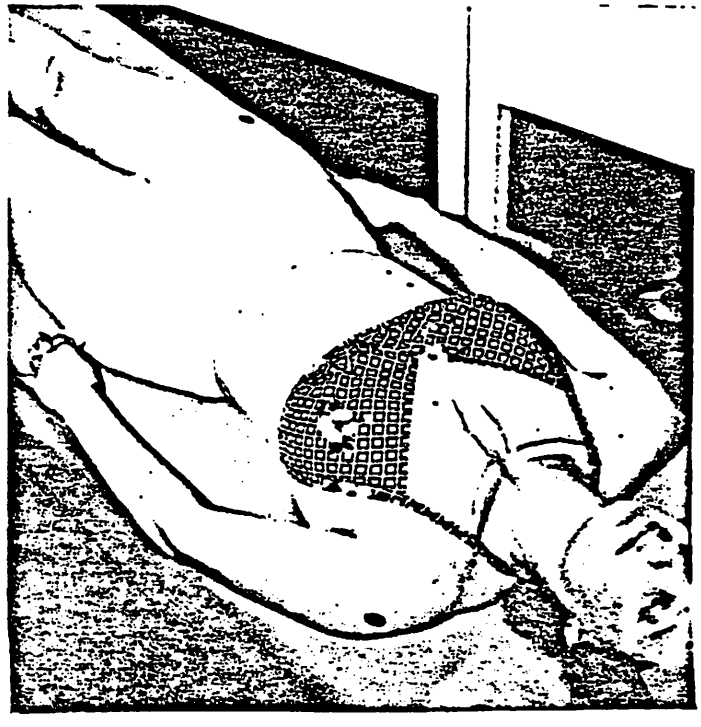


Figure 10: The bogus tapping points on the right rectus femoris and the left posterior deltoid.

RESULTS

Goodheart found a high percentage of therapy localization activity for Spleen 21 and Kidney 27 in altered blood states.[12] It is interesting that the only statistically significant material produced by this study on oral pH involved in each case Spleen 21 and Kidney 27. These occured during the therapy localizations and muscle testing.

The first correlation of having the subject therapy localize to the right Spleen 21 and the left Kidney 27 showed a significance of 90%. This figure is represented in table 1 and involved the difference in the oral pH after the muscle testing in comparison to the final pH. The pattern of the oral pH was to show an increase.

This becomes even more significant when the next correlation is noted. This one dealt with therapy localization to the left Spleen 21 and the right Kidney 27, the opposite of the previously mentioned therapy localization. This showed a 99.9% significance, and involved the difference between the initial pH and the pH after muscle testing. The pattern of the oral pH was to show a decrease. (See table 1.)

It is interesting to note that the overall pH readings for all three groups ended up decreasing with the experimental group decreasing the least. This is illustrated in table 2 and figure 11.

Most of our data proved insignificant when measured by a two-tailed T-test. Table 3 illustrates the means, standard deviations and T-test values for the experimental group and the two control groups.

Figures 12 and 13 illustrate the six mean oral pH readings. Occasionally the oral pH increased however the average oral pH results in a decrease.

The oral pH electrode was not a factor in the final outcome of our data. This was determined by taking salivary samples from six different subjects and measuring the pH of the saliva over the same time frame as the experiment. During each measurement there was no significant change in the pH of the saliva.

Table 1: The degree of significance involving positive therapy localization to Spleen 21 and Kidney 27. This table represents the T-tests performed on the average pH's involving simultaneous therapy localizations to Spleen 21 and Kidney 27.

	Initial pH	pH after mus. test	Final pH	
Mean	6.50	6.42	6.74	
Standard Deviation	.545	.299	.209	For right Spleen 21 and left Kidney 27.
T-value	.251	.834	1.764*	(This value is 90% significant.)
Degree of Freedom	6	6	6	
Mean	6.374	6.371	6.139	
Standard Deviation	.610	.482	.380	
T-value	9.727**	.868	1.004	For left Spleen 21 and right Kidney 27.
Degree of Freedom	12	12	12	

**This value is 99.9% significant.

Table 2: Oral pH relationships at different points in the experiment. In the first column, the initial pH is listed. In the second column, the pH change from the initial reading to after the muscle testing is recorded. In the third column, the change in pH from after the muscle testing to the final pH is recorded. In the next column, the final pH is listed, and in the final column, the overall change in pH is indicated. The pH was read six times in the course of the experiment.

GROUP C: The experimental group

Initial pH	After muscle test	Mus. Test to final	Initial pH to final	Final pH	Overall
6.555	.222 ↓	.494 ↑	.272 ↑	6.827	↑
5.800	.240 ↑	.560 ↑	.800 ↑	6.600	↑
6.200	.400 ↑	.120 ↓	.280 ↑	6.980	↑
6.400	.225 ↑	.080 ↑	.305 ↑	6.705	↑
6.640	.160 ↑	.200 ↑	.360 ↑	7.000	↑
6.500	.220 ↓	.690 ↑	.470 ↑	6.970	↑
5.420	.200 ↑	.470 ↑	.330 ↓	5.750	↑
6.000	.440 ↑	.340 ↑	.100 ↑	6.100	↑
5.850	.280 ↑	.230 ↓	.050 ↑	5.900	↑
6.200	.320 ↑	.330 ↑	.650 ↑	6.850	↑
6.200	.080 ↑	.020 ↑	.100 ↑	6.300	↑
5.800	.560 ↑	.330 ↓	.230 ↑	6.030	↑
6.500	.080 ↑	.040 ↓	.040 ↑	6.540	↑
6.740	.329 ↓	.588 ↓	.917 ↓	5.820	↓
6.820	.595 ↓	.414 ↓	1.009 ↓	5.811	↓
6.587	.230 ↓	.089 ↓	.319 ↓	6.268	↓
6.350	.460 ↓	.410 ↑	.050 ↓	6.300	↓
6.900	.100 ↓	.150 ↓	.250 ↓	6.650	↓
6.900	.030 ↓	.220 ↓	.250 ↓	6.650	↓
6.600	.250 ↓	.170 ↑	.080 ↓	6.520	↓
6.550	.050 ↑	.200 ↓	.150 ↓	6.400	↓
6.600	.500 ↓	.200 ↓	.700 ↓	5.900	↓
6.870	.170 ↓	.600 ↓	.770 ↓	6.100	↓
7.040	.040 ↓	.000 –	.040 ↓	7.000	↓
6.800	.120 ↑	.170 ↓	.150 ↓	6.750	↓

Table 2 (continued): Group C, the experimental group.

Initial pH	After muscle test	Mus. test to final	Initial pH to final	FinalpH	Overall
6.965	.105 ↓	.290 ↓	.395 ↓	6.570	↓
6.830	.200 ↓	.007 ↓	.270 ↓	6.560	↓
7.130	.360 ↓	.220 ↑	.140 ↓	6.990	↓
6.450	.370 ↓	.320 ↑	.050 ↓	6.400	↓
5.800	.300 ↑	.500 ↓	.200 ↓	5.600	↓
6.700	.700 ↓	.670 ↑	.030 ↓	6.670	↓
7.300	.090 ↑	.890 ↓	.800 ↓	6.500	↓
Group A:	The group that received no tappings.				
6.600	.450 ↑	.350 ↓	.100 ↑	6.700	↑
6.640	.140 ↑	.230 ↓	.090 ↑	6.730	↑
6.380	.050 ↑	.120 ↑	.170 ↑	6.550	↑
6.030	.370 ↑	.200 ↑	.570 ↑	6.600	↑
6.640	.190 ↑	.045 ↓	.140 ↑	6.780	↑
6.380	.040 ↑	.280 ↓	.240 ↓	6.150	↓
6.800	.780 ↓	.030 ↑	.750 ↓	6.050	↓
6.260	.060 ↓	.600 ↓	.620 ↓	5.600	↓
5.830	.430 ↓	.050 ↓	.480 ↓	5.350	↓
6.680	.480 ↓	.190 ↑	.290 ↓	6.390	↓
6.150	.350 ↑	.560 ↓	.210 ↓	5.940	↓
Group B:	The bogus tapping group.				
6.720	.270 ↑	.130 ↓	.140 ↑	6.850	↑
6.800	.120 ↑	.080 ↑	.200 ↑	7.000	↑
6.820	.180 ↑	.280 ↓	.100 ↓	6.720	↓
6.600	.300 ↓	.200 ↑	.100 ↓	6.500	↓
6.790	.290 ↓	.000 –	.290 ↓	6.500	↓
5.700	.500 ↓	.680 ↑	.180 ↓	5.520	↓
6.730	.270 ↓	.140 ↓	.410 ↓	6.320	↓
6.090	.020 ↓	.120 ↓	.140 ↓	5.950	↓
6.540	.120 ↓	.780 ↓	.890 ↓	5.650	↓

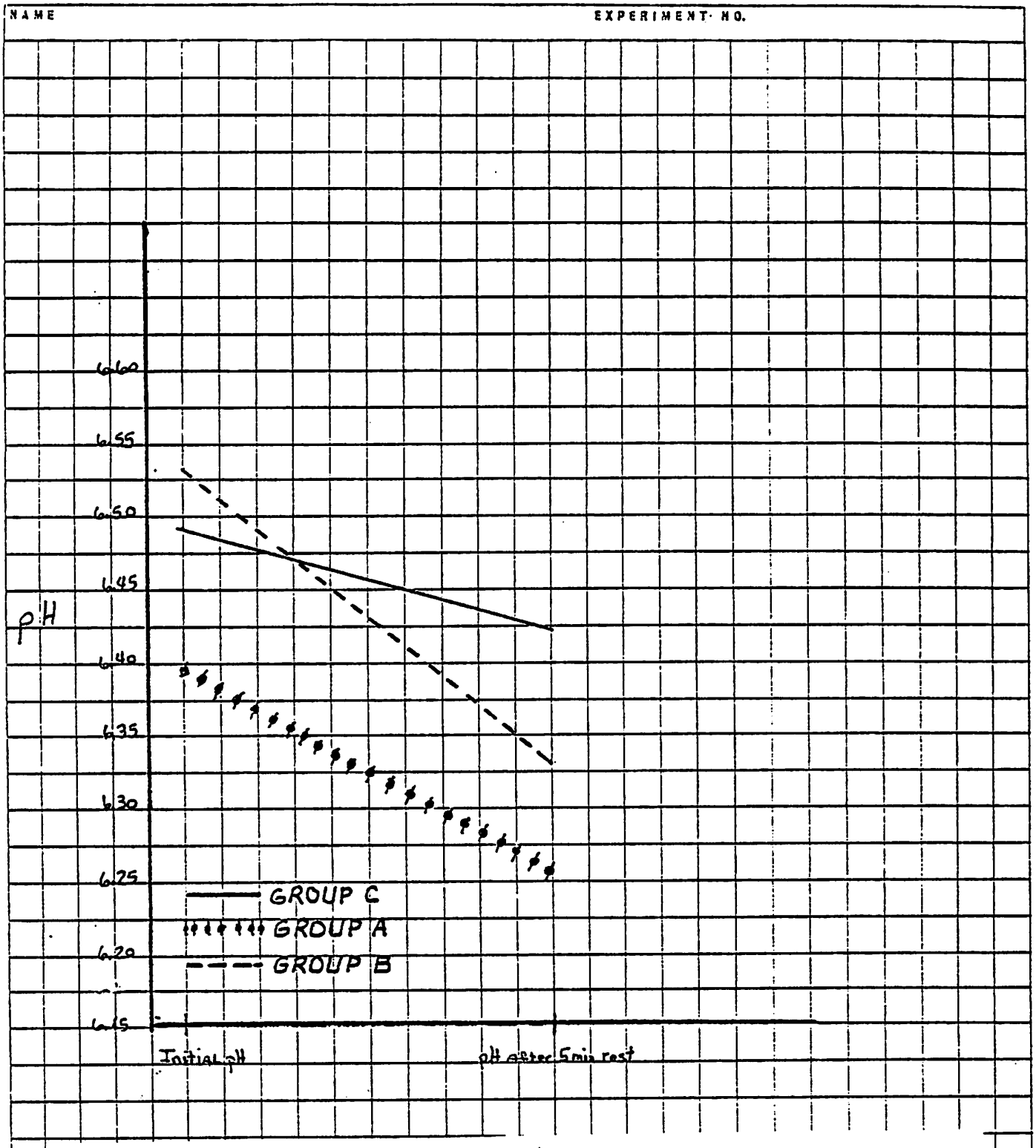


Figure 11: This graph shows the average pH of the initial pH and the final pH of all three groups. The experimental group showed less of a change than the other groups and remained more in the range of normal pH.

Table 3: The results of the experiment expressed in computer data. In this table the results of the oral pH are listed at the six different times it was taken. The mean values for the pH's are given in addition to the standard deviation, the T value (which correlated to amount of significance) and the degrees of freedom.

GROUP C: The experimental group.

	Initial pH	After Muscle testing	Tap 1 min.	Tap 2	Tap 3	Final
Mean	6.489	6.511	6.467	6.411	6.472	6.422
Standard Deviation	.440	.331	.342	.338	.361	.386
T Value	0	0	0	0	0	0
Degrees of Freedom	66	66	66	66	66	66

GROUP A: The group that received no tappings.

	Initial pH	After muscle testing	1 min.	2 min.	3 min.	Final
Mean	6.399	6.405	6.410	6.343	6.486	6.257
Standard Deviation	.306	.332	.403	.372	.402	.482
T Value	.625	.927	.464	.813	.114	1.158
Degrees of Freedom	43	43	43	43	43	43

GROUP B: The bogus tapping group.

	Initial pH	After muscle testing	Tap 1 min.	Tap 2	Tap 3	Final
Mean	6.531	6.539	6.354	6.427	6.448	6.334
Standard Deviation	.385	.347	.388	.393	.397	.523
T Value	.260	.227	.859	.096	.170	.563
Degrees of Freedom	41	41	41	41	41	41

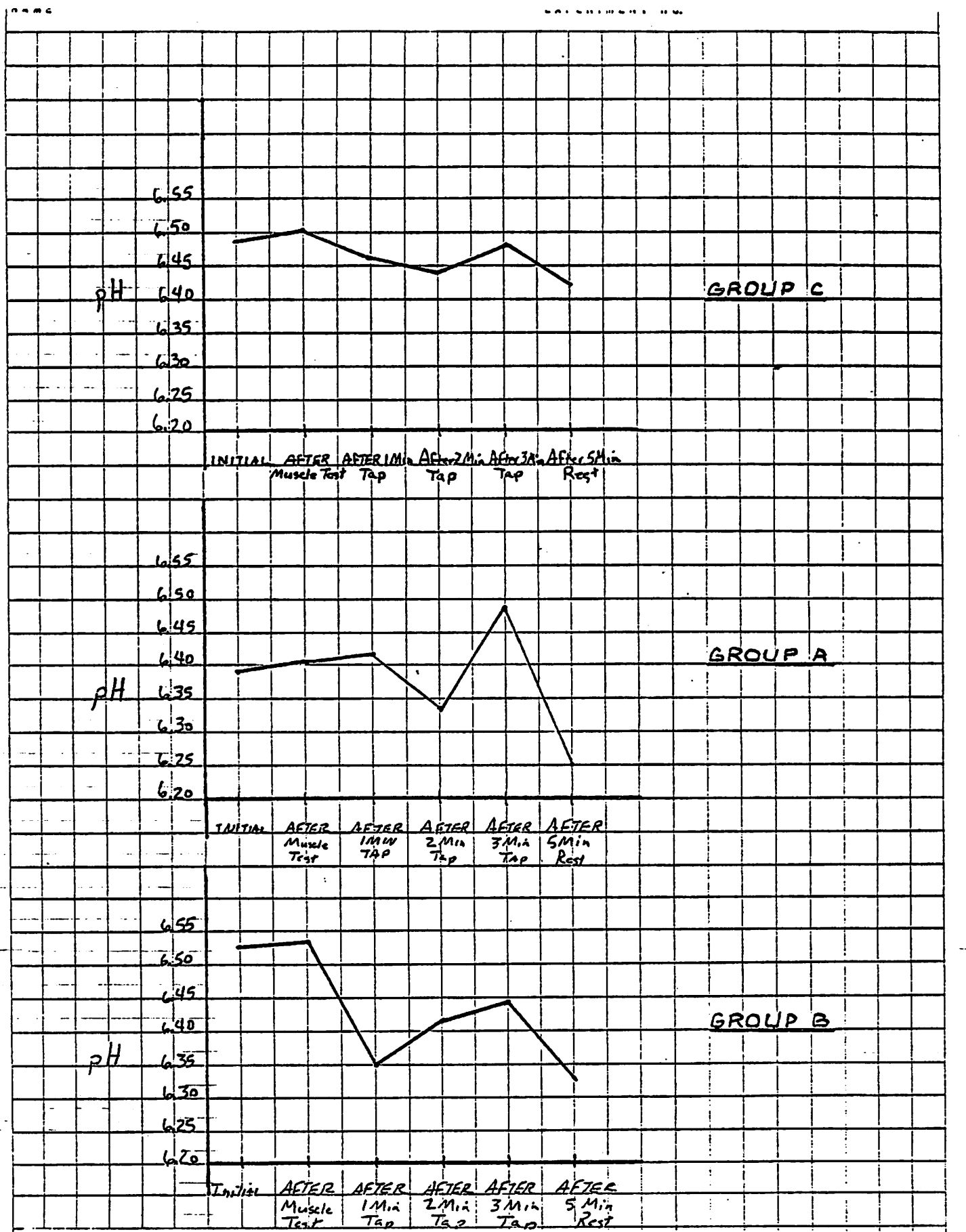


Figure 12: Three graphs illustrating the average pH's taken during the six designated periods. Group C is the experimental tapping group. Group A is the group that received no tapping but instead rested. Group B received the bogus tapping.

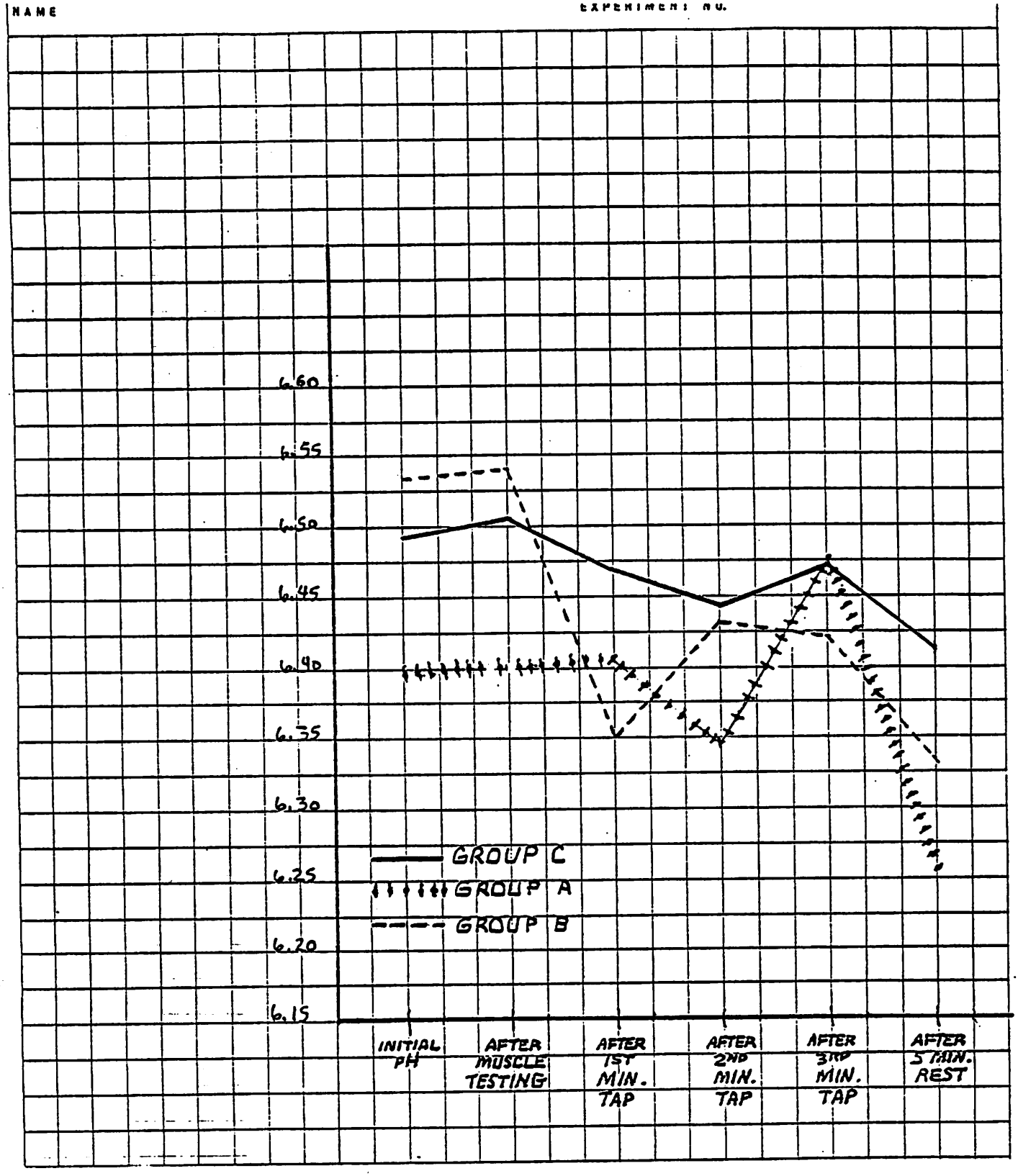


Figure 13: An overlay comparison of the pattern of pH readings during the course of the experiment. In general, the experimental group showed the smallest fluctuations overall.

DISCUSSION

There are a number of observations which the researchers have made in the course of the experiment which they feel are clinically fascinating but statistically insignificant. The researchers believe that the following observations have significance but that further experimentation will have to be performed to determine their validity.

1. The greatest changes in oral pH, whether increasing or decreasing, occurred immediately after muscle testing and before the tapping procedure was performed.
2. Most of the subjects being tested were therapy localizing on the right K27 for treatment. This may be due to the act that all the subjects tested were right handed.
3. The bogus tapping procedure produced results that were similar to the experimental tapping procedure. Perhaps this is due to the fact that it is difficult in the extreme to find two points on the body which are not close to meridian pathways, neurovasculars, neurolymphatics or other treatment points. In other words, there is no "wasted space" on the body. The body functions as a whole entity, and because of the interrelationship of its parts, whatever is done to almost any part of the body will have an effect elsewhere.
4. A frequently observable reaction, occuring 90% of the time, was if the muscle testing elicited a pH increase, the final pH was also increased. Also, if the pH dropped after the muscle testing, the final pH also showed a decrease in relation to the initial reading. A possible explanation would seem to be that, assuming the muscle testing caused a reaction in the body to alter pH, and the tapping procedure did nothing to cause a change in the effect of the muscle test, then the general direction of pH change shown after the muscle test would continue throughout to the end of the experiment.
5. As in Goodheart's research with blood chemistry changes, our research seemed to also show that a tapping procedure does alter oral pH, some levels rising, some falling, some remaining relatively unchanged. This is a clinical observation only because the overall change in pH was not shown to be significant enough to warrant the tapping as a therapeutic technique. This was

determined by having the data analyzed through various parameters through the use of a T-test.

6. During the five minutes of resting, the oral pH began to change toward the initial pH in a majority of cases, therefore parallelling the results of Goodheart, stated earlier, that the treatment did not "hold" on the subject for a long period of time.
7. Muscle testing seemed to cause a change in oral pH. Therefore a suggestion for further research is to choose a control group which receives neither the muscle testing nor the therapeutic tapping procedure. to determine if any significant change results.

Granted, the researchers did not obtain a significant change in oral pH from the therapeutic tapping as Dr. Goodheart reported. However, one must realize that we did not use any other therapeutic treatment in conjunction with the tapping procedure which Dr. Goodheart utilized in his research. Therefore, it cannot be determined from this experiment that the reflex tapping procedure is innefective as a therapeutic treatment. Further research may elicit the significant results that Dr. Goodheart obtained if other therapeutic measures are utilized.

REFERENCES

1. George J. Goodheart, Jr., "The Acid-Alkaline Balance and Patient Management," Collected Published Articles Reprints (Detroit: privately published, 1969).
2. Ibid.
3. George J. Goodheart, Jr., Applied Kinesiology 1978 Workshop Procedure Manual, pgs. 35-37, (Detroit: privately published, 1978).
4. Ibid.
5. George J. Goodheart, Jr., "The Acid-Alkaline Balance and Patient Management," Collected Published Articles and Reprints (Detroit: privately published, 1969).
6. Marjorie Miller, Kimber-Gray-Stackpole's Anatomy and Physiology, 17th ed., pg. 564, Macmillan Publishing co., Inc., New York, 1977.
7. David S. Walther, Applied Kinesiology Volume 1: Basic Procedures and Muscle Testing, pg. 9, Systems DC, Pueblos, Colorado, 1981.
8. George J. Goodheart, Jr., Applied Kinesiology 1974 Workshop Procedure Manual, (Detroit: privately published, 1974).
9. David S. Walther, Applied Kinesiology Volume 1: Basic Procedures and Muscle Testing, pg. 27, Systems DC, Pueblos, Colorado, 1981.
10. George J. Goodheart, Jr., Applied Kinesiology 1978 Workshop Procedure Manual, (Detroit: privately published, 1978).
11. George J. Goodheart, Jr., Applied Kinesiology 1974 Workshop Procedure Manual, (Detroit: privately published, 1974).
12. George J. Goodheart, Jr., Applied Kinesiology 1978 Workshop Procedure Manual, (Detroit: privately published, 1978).

Control	Initial pH	Tensor Fascia Lata		TL Ⓓ Sp 21 w/Ⓓ hand. Muscle test T.F.L.		TL Ⓡ K 27 w/Rt hand Muscle test T:F.L.		TL Ⓛ K 27 w/Rt hand Muscle test T.F.L.		TL Ⓓ K 27 w/Ⓛ hand + Ⓡ Sp 21 W/Rt hand Muscle test T.F.L.		TL Ⓓ Sp 21 w/L hand + Ⓡ K27 w/Rt hand. Muscle test T.F.L.		TL Ⓛ Sp 21 w/L hand + Ⓓ K 27 w/Rt hand. Muscle test T.F.L.		pH after muscle test	@ or Ⓛ K 27 and Sp 21	Tap for 1 min. pH	Tap add. 1 min. pH	Tap add. 1 min. pH	Rest 5 min.
		Rt	Lt	Rt	Lt	Rt	Lt	Rt	Lt	Rt	Lt	Rt	Lt	Rt	Lt						
C	6.55	W	W	W	W	S	S	W	W	S	W	W	W	=	S	6.33	R	6.61	6.63	6.87	6.6
C	5.90	S	S	S	S	S	S	S	S	W	W	S	S	=	S	6.09	R	5.72	5.87	6.60	6.51
C	6.20	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.60	R	6.15	6.25	6.05	6.48
C	6.40	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.62	R	6.85	6.76	6.78	6.71
C	6.64	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.80	R	6.25	6.61	6.52	7.00
C	6.50	S	S	S	S	S	S	S	W	S	S	S	S	S	S	6.28	L	7.00	6.70	6.82	6.53
C	6.00	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.44	R	6.03	5.85	6.12	6.10
C	5.85	S	S	S	S	S	S	W	W	S	S	S	S	S	S	6.13	L	5.75	5.94	5.85	5.90
C	6.70	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.52	R	6.15	6.55	6.35	6.85
C	6.20	S	S	W	W	S	S	W	W	S	S	S	S	W	W	6.28	L	6.20	6.59	6.34	6.30
C	5.80	S	S	S	S	S	S	W	W	S	S	S	S	W	W	6.36	L	6.28	6.29	5.97	6.03
C	6.5	W	W	S	S	S	S	W	W	S	S	W	W	S	S	6.58	R	6.64	6.34	6.40	6.59
C	5.42	S	S	S	S	S	S	S	S	S	S	W	W	S	S	6.22	R	6.25	5.78	5.80	5.75
C	6.74	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.41	R	6.18	6.40	6.40	5.82
C	6.82	S	S	S	S	S	S	W	S	S	S	S	S	S	S	6.22	L	6.53	6.41	6.20	5.81
C	6.59	S	S	S	S	S	S	S	W	S	S	S	S	S	S	6.36	L	6.36	6.36	6.85	6.27
C	6.35	S	W	W	W	S	S	S	S	S	W	S	S	W	W	5.89	R	6.78	5.70	6.70	6.30
C	6.90	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.80	R	6.30	6.70	6.77	6.65
C	6.60	S	S	S	S	S	S	S	S	S	S	W	W	S	S	6.37	R	6.45	6.50	6.60	6.59
C	6.55	S	S	S	S	S	S	S	S	S	S	W	W	S	S	6.60	R	6.48	6.59	6.35	6.50
C	6.66	S	S	S	S	S	S	S	S	S	S	W	W	S	S	6.10	R	6.25	6.20	6.24	5.90
C	6.87	S	S	S	S	S	S	S	S	S	S	S	S	W	W	6.70	R	6.63	6.45	6.40	6.10
C	7.08	S	S	S	S	S	S	S	S	S	S	S	S	S	S	7.00	R	6.57	6.63	7.08	7.01
C	6.80	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.92	R	6.89	7.02	6.80	6.75
C	6.17	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.86	R	6.78	6.83	6.72	6.57
C	6.83	S	S	S	S	S	S	W	W	S	S	S	S	S	S	6.63	L	6.78	6.59	6.64	6.54
C	7.13	S	S	S	S	W	W	S	S	S	W	S	S	S	S	6.71	R	7.00	6.75	6.67	6.99
C	6.45	S	S	S	S	S	S	W	W	S	S	S	S	W	W	6.08	L	6.44	6.28	6.35	6.41
C	5.80	S	S	S	S	S	S	S	S	S	S	W	W	S	S	6.10	R	5.98	6.23	5.92	5.60
C	6.70	S	S	S	S	S	S	W	W	S	S	S	S	S	S	6.10	L	6.60	6.39	6.50	6.42
C	7.30	S	S	S	S	S	S	S	S	S	S	W	W	S	S	7.39	R	7.15	6.80	6.97	6.54

crapy =TL
calization
nsor Fascia
ta =T.F.L.

ght =Ⓡ
ft =Ⓛ

Control	initial pH	Tensor Fascia Lata Rt	Tensor Fascia Lata Lt	TL Ⓤ Sp 21 w/Ⓓ hand. Muscle test T.F.L. Rt	TL Ⓤ Sp 21 w/Ⓓ hand. Muscle test T.F.L. Lt	TL Ⓡ K 27 w/Rt hand Muscle test T.F.L. Rt	TL Ⓡ K 27 w/Rt hand Muscle test T.F.L. Lt	TL Ⓛ K 27 w/Rt hand Muscle test T.F.L. Rt	TL Ⓛ K 27 w/Rt hand Muscle test T.F.L. Lt	TL Ⓘ K 27 w/Ⓓ hand + Ⓟ Sp 21 W/Rt hand Muscle test T.F.L. Rt	TL Ⓘ K 27 w/Ⓓ hand + Ⓟ Sp 21 W/Rt hand Muscle test T.F.L. Lt	TL Ⓘ Sp 21 w/L hand + Ⓡ K27 w/Rt hand. Muscle test T.F.L. Rt	TL Ⓘ Sp 21 w/L hand + Ⓡ K27 w/Rt hand. Muscle test T.F.L. Lt	TL Ⓛ Sp 21 w/L hand + Ⓓ K 27 w/Rt hand. Muscle test T.F.L. Rt	TL Ⓛ Sp 21 w/L hand + Ⓓ K 27 w/Rt hand. Muscle test T.F.L. Lt	pH after muscle test	Ⓡ or Ⓛ K 27 and Sp 21	Tap for 1 min. pH	Tap add. 1 min pH	Tap add. 1 min pH	Rest 5 min.
A	6.60	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.50	R	6.50	6.77	6.77	6.1
A	6.61	S	S	S	S	S	S	S	S	S	S	W	W	S	S	6.50	R	6.39	6.74	7.00	6.72
A	6.64	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.83	R	6.89	6.89	6.81	6.78
A	6.38	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.43	R	6.48	6.29	6.55	6.55
A	6.03	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.40	R	6.05	6.12	6.50	6.11
A	6.38	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.42	R	6.32	6.29	6.40	6.15
A	6.80	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.02	R	6.24	6.50	6.38	6.05
A	6.15	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.50	R	6.20	6.20	6.10	5.94
A	6.28	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.20	R	6.20	5.94	6.00	5.60
A	5.83	S	S	S	S	S	S	W	W	S	S	W	W	S	S	5.90	L	5.68	5.62	5.85	5.35
A	6.68	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.20	R	6.60	6.68	7.10	6.55
B	6.72	S	S	S	S	W	S	S	S	S	S	S	S	S	S	6.98	R	7.00	6.94	6.75	6.85
B	6.80	S	S	S	S	S	S	S	S	S	S	S	S	S	W	6.92	R	6.48	6.00	6.82	7.05
B	6.82	S	S	S	S	S	S	S	S	S	S	S	S	S	S	7.00	R	6.80	7.20	6.55	6.72
B	6.60	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.30	R	6.33	7.03	7.00	6.50
B	6.79	S	S	S	S	S	S	S	S	S	S	W	W	S	S	6.50	R	6.75	6.48	6.51	6.50
B	5.70	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.20	R	5.75	5.55	5.77	5.52
B	6.87	S	S	S	S	S	S	S	S	S	S	S	S	S	S	6.46	R	6.40	6.41	6.42	6.32
B	6.09	S	S	S	S	S	S	S	S	S	S	W	W	S	S	6.07	R	5.98	5.88	6.01	5.95
B	6.58	S	S	S	S	S	S	S	S	S	S	S	S	W	W	6.43	R	6.09	6.34	6.20	5.65

350

erapy = TL
calization
nsor Fascia
ta = T.F.L.
ght = Ⓡ
ft = Ⓛ

CEREBRAL SPINAL FLUID PRESSURE LOSS

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Richard H. Schroeder, D.C.

Abstract: Technical reason for loss of energy feeling, heat exhaustion, tireness, heat stroke and even loss of ambition.

I have used the recommended bilateral pumping technique on the mastoid processes for years, ever since I learned it from Dr. Goodheart[1]. It corrected a condition of poor endurance. This has been done over a 1,000 times to as many patients. Benefit was always observed and repeat treatment was rarely necessary. We found sometimes a skull impact would result in the necessity of repeat treatment.

Our most recent finding is based on 6 weeks of checking every patient coming to our office. About 250 were checked. Only 6 people did not need correction of a low cerebral spinel fluid pressure, all the rest did. Approximately 50 had never had the correction done before.

The most significant factor that existed that could have caused such a high frequency of this condition was our heat spell. Fresno, Calif. has had over a 100 degree days ever since June 20th with only a few recently that fell to 90 degrees. That's 9 weeks of excessive heat, above normal body temperature.

So my opinion based on clinical evidence, logic and reasoning is. That the cranial pumping action suffers a reduction of performance during heat exposure to a proportionate degree of heat level and time of exposure.

Secondly, the fluid level of the body is commonly neglected during heat spells with increased perspiration loss of fluid.

I believe the national reports of over 1,000 deaths blamed on the heat spell was the result of such a severe lowering of the C.S.F. that vital functions ceased.

My understanding of C.S.F. is that it originates in the 3rd ventricle, produced by the glands of Morgan in the walls of the 3rd ventricle[2] when enlargement occurs on Cranial expansion[3] motion during the inspirational cycle. As expiration occurs, so does contraction of the cranial vault, with reduction in size of the ventricles. This action resembles a pump forcing C.S.F. down the spinal cord canal. This fluid under pressure is forced out thru the Collegen fibers[4] of the spinal nerves to the very periphery of every nerve. Where it enters the capillaries to join the lymphatic fluid system. A very important additional factor is that it is the only medium of travel or transportation of the horomones that the pituitary gland produces[5] .

I believe when I test a muscle for endurance and its performance is short lived, the real cause of lack of continuance function is the neurological short coming due to reduced C.S.F. The brain wave message comes on strong at first, but the requirement of conducting a continuous message falls short and seems to quickly become ineffectual, with the result of fast fading strength.

Again I believe our use of the phrase, "it's a weak muscle" is incorrect because it's really just a poor performing muscle due to neurological reasons.

An obstruction of the Foramina between the ventricales or of the exit from the fourth ventricle causes an accumulation of fluid in the ventricles with the resultant condition known as hydrocephalus[6] .

Most all cases that needed correction of the C.S.F. pressure had had one correction many months ago and had not needed another improvement in that catogory since. I believe the symptoms of exhaustion, tireness, collapse, loss of energy, and reduced insentive or ambition during and after a heat spell is the result of lowering of C.S.F. pressure.

I also believe the following is the only defense. Prevent unnecessary exposure to heat, or extented exposure, shield the head with shade, umbrella, or hat, replenish water-salt supply as it is lost, keep cool. As for the hat shield, over the years I've heard people say " I wear a hat out in the sun to keep my head cool." At first, years ago, I thought how silly, I wear a hat in the winter to keep my head warm. But with enough people telling me this, I found I was believing them. Now I recommend it for outdoor working people.

I also have thought that reduction of cranial pumping action would occur on extreme cold or hypo thermia experiences. So for you in the cold climate I'd hope you'd check this out and let me know if I'm right.

Also examine for high C.S.F. in hyperkinetic children.

And anyone who claims they love and feel much better in real hot climates (There, the lowering of C.S.F pressure brings it back closer to normal.)

I believe it could prove to be part of the therapy necessary for hydrocephalus.

So in conclusion --- wear a hat, a ventilated one in hot weather during sun exposure or grow lots of hair, drink lots of water and use salt to taste desire on foods. I also believe a self treatment of exaggerated yawning again and again will help.

Written Sept. 1980

Reviewed Aug. 1981

RHS/dr

REFERENCES:

1. Goodheart, George J., page 42 Applied Kinesiology Research Manual 1970.
2. Twenty-ninth Edition, Page 883 Gray's Anatomy.
3. Goodheart, George J., Page 1 Applied Kinesiology Research Manual 1968.
4. Twenty-ninth Edition, Page 883 Gray's Anatomy.
   Goodheart, George J., Page 2 Applied Kinesiology Research Manual 1968.
5. Twenty-ninth Edition, Page 1348 Gray's Anatomy.
   Goodheart, George J., Page 2 Applied Kinesiology Research Manual 1968.
6. Twenty-ninth Edition, Page 883 Gray's Anatomy.

THE FORMATION OF THE FRONTAL BONE FAULT

By Paul T. Sprieser, B.S., D.C.

Abstract: This is the academic discussion of the formation and cause of the frontal fault.

The formation of the frontal bone fault is due to two distinct features, three muscular in origin and one mechanical in origin. The first is the sudden loss of muscle tension of the Epicranius. This is due to the leverage system formed by the cervical spine and the cranium and the pull of the Longus Capitis and Rectus Capitis Anterior and their effect on the Epicranius.

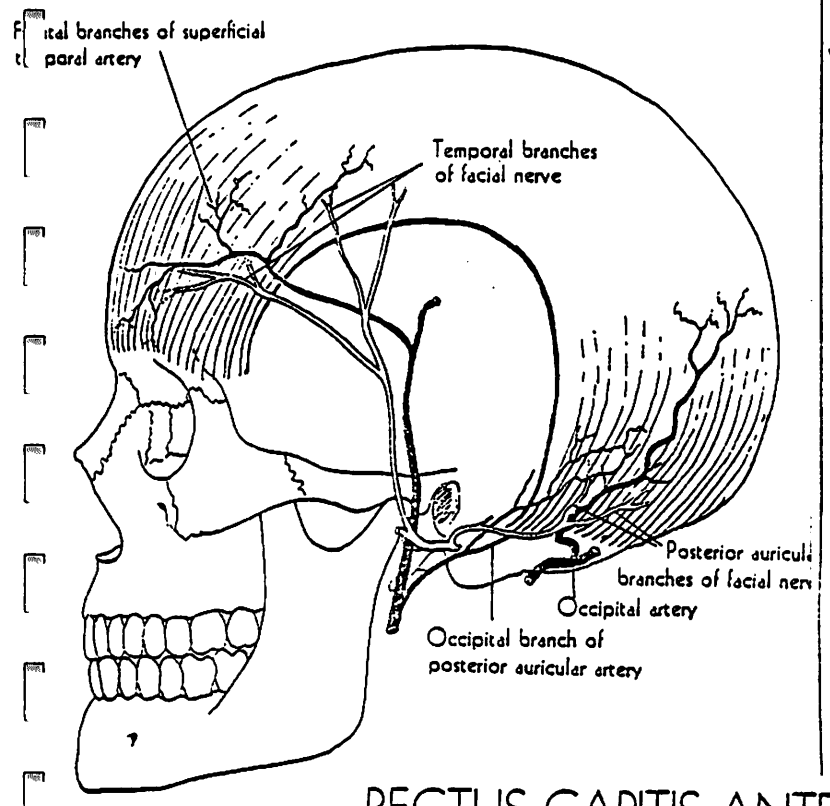
Muscular involvement: First, I want to review the muscular elements of this fault. These are the following muscles: Epicranius, Longus Capitis, Rectus Capitis Anterior.

Epicranius: Origin-Occipital bellies from lateral two-thirds of superior nuchal line and mastoid process, frontal bellies from epicranial aponeurosis at level of coronal suture. Insertion-Skin of occipital region, skin of frontal region and galea aponeurotica.

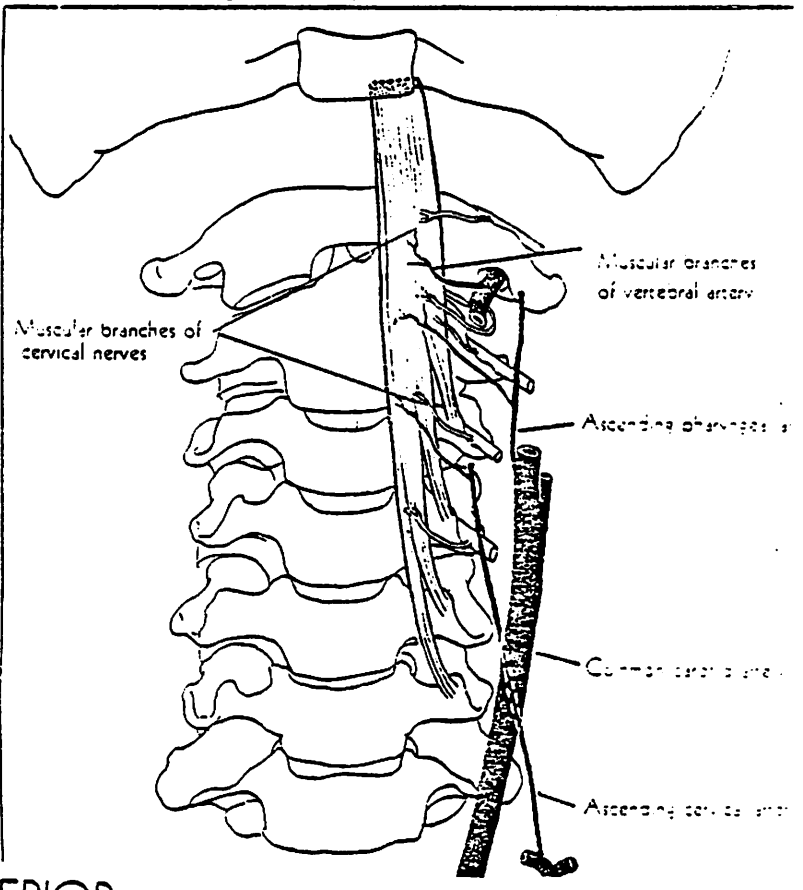
Longus Capitis: Origin-Anterior tubercles of transverse process of 3d, 4th, 5th, 6th cervical vertebras. Insertion-Inferior surface of basilar part of occipital bone.

Rectus Capitis Anterior: Origin-Lateral mass of atlas. Insertion-Base of occipital bone in front of foramen magnum.

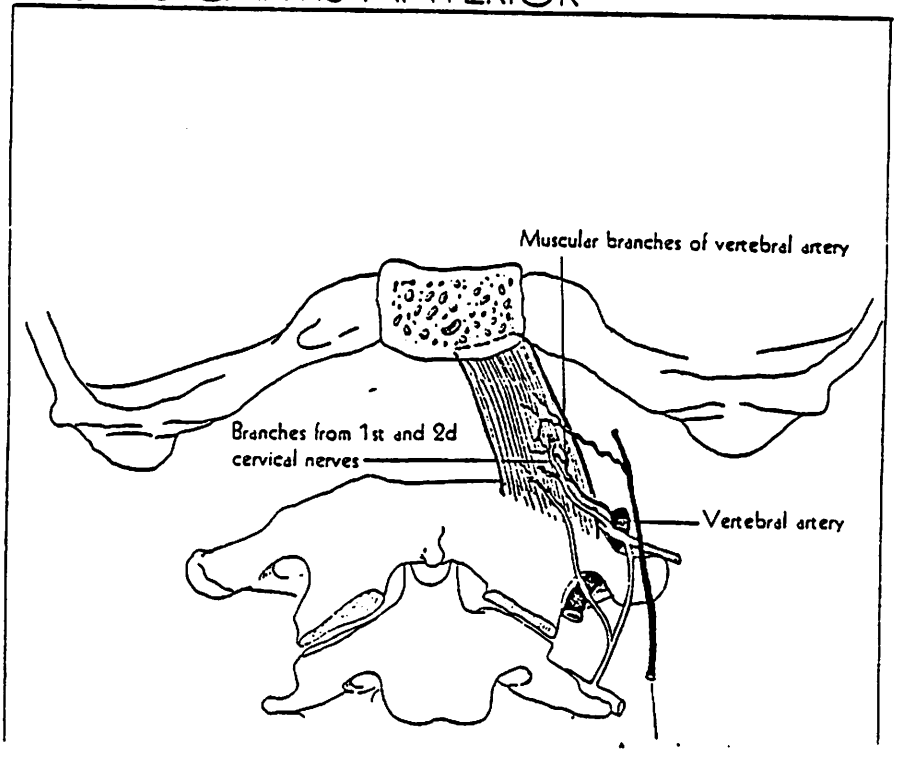
CRANIUS (Occipito-frontalis)



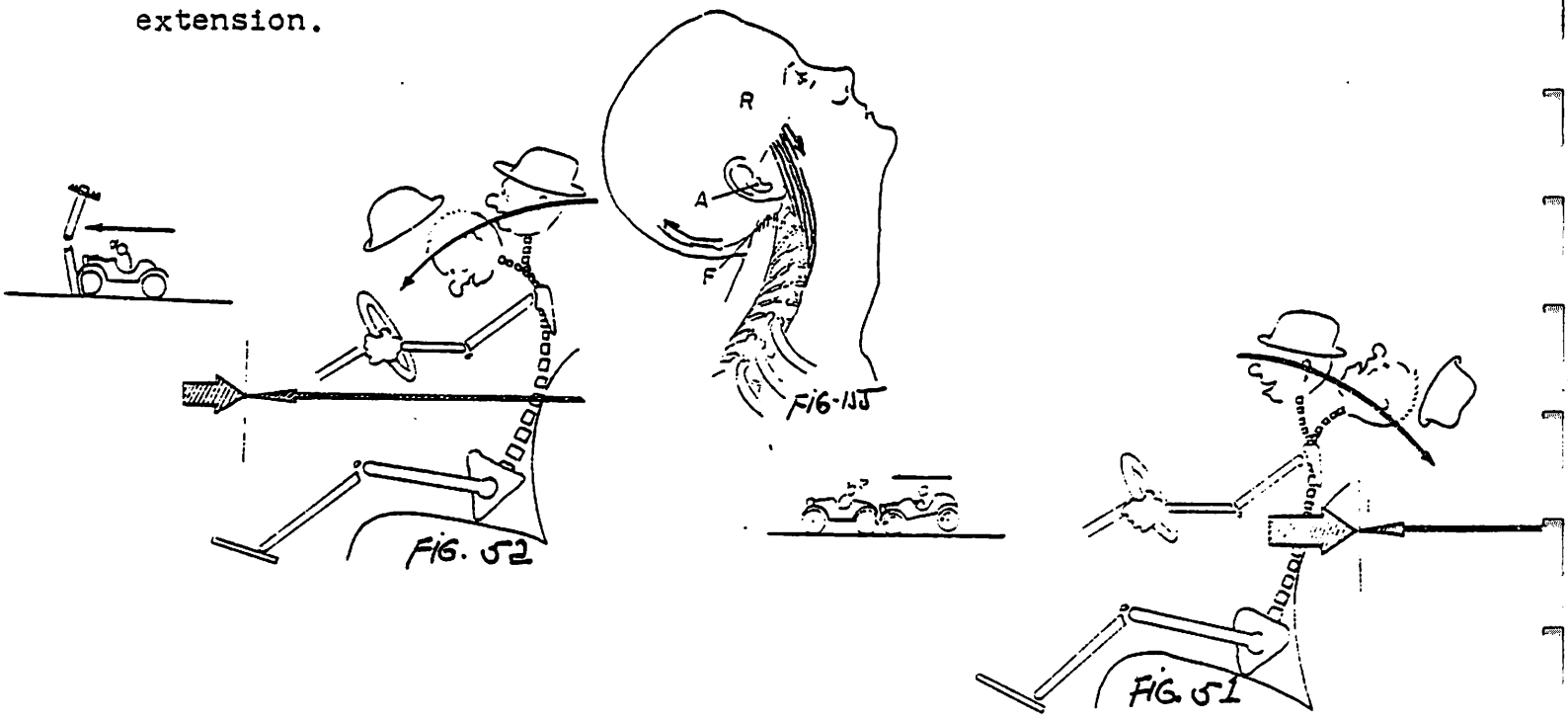
LONGUS CAPITIS



RECTUS CAPITIS ANTERIOR



If we look at Fig. 155 (Kinesiology-Wells) we can see that the resistance point is near the front region. The sudden force caused by the whiplash type of injury in Fig. 51-52 (Neck and Arm Pain-Cailliet) shows that the cervical spine is forced into sudden extension.



If you suddenly thrust your neck into extension as shown in Fig. 155 you will feel the force in the frontal region.

Formation of the fault is due to the natural leverage system shown in the text Kinesiology by Katharine F. Wells, Ph.D. and the sudden pull placed on the Longus Capitis and the Rectus Capitis Anterior. As the head is suddenly thrust back into extension, both of these muscles are attached to the basilar portion of the occipital bone pulling the sphenobasilary junction into extension causing the occiput to move superior, which causes the loss of the muscular tension of the Epicranius. This intern allows the natural leverage system to cause the formation of the frontal fault.

BIBLIOGRAPHY:

Cailliet, Rene, M.D.-Neck and Arm Pain F.A. Davis Company, Philadelphia 1964.

Warfel, John H., Ph.D.-The Head, Neck And Trunk, Lea & Febiger, Philadelphia 1976.

Wells, Katharine F., Ph.D.-Kinesiology, W.B. Saunder Company, Philadelphia 1961.

ATYPICAL FACIAL NEURALGIAS

By Paul T. Sprieser, B.S., D.C.

Abstract: This is a synopsis of work done by Eugene J. Ratner, D.D.S.

Resulting from my work with T.M.J. patients, I have had the opportunity of meeting and working with many dentists.

In particular, I wish to extend my thanks to Dr. Frank Landry, D.D.S. of Denville, New Jersey who called my attention to Dr. Eugene J. Ratner's work "Jawbone Cavities And Atypical Facial Neuralgias".

With the exception of Dr. Landry most dentists with whom I have contact had little or no knowledge of this matter. Thus, I feel a synopsis of Dr. Ratner's work would be quite valuable to us at I.C.A.K.

After working with many T.M.J. patients, some who have not shown any improvement despite my best efforts and those of the dentist, I realized perhaps the answer to these patient's problems can be found in Dr. Ratners work.

What Dr. Ratner's paper presents the existance roentgenographically nondetectable intraoral bony cavities at site of previous tooth extraction. However, these cavities do produce a wide variety of symptoms that may be confused with the T.M.J. symptoms, (Fig. 8-9).

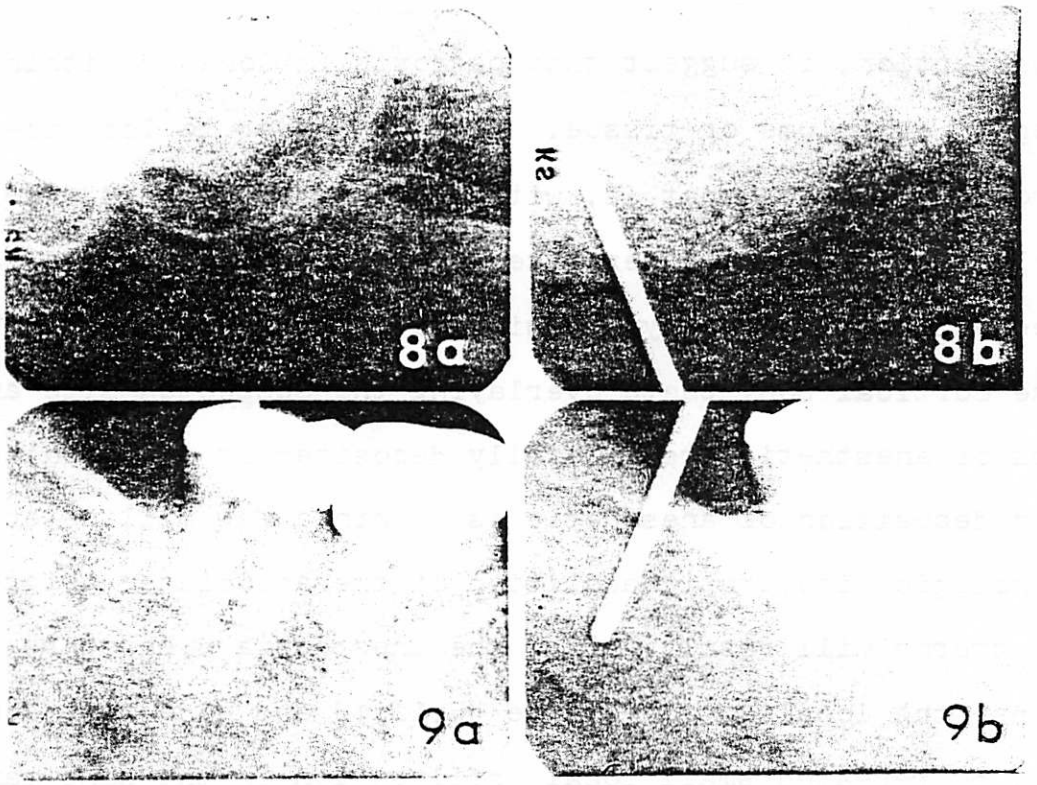


Fig. 8. Case 4. **a,** Roentgenogram of edentulous upper right midmaxillary region in which site of pathosis was presumptively assigned by the "localization by anesthetization" diagnostic procedure. There is no indication of abnormality. **b,** Roentgenogram of the same area after a metal probe had been inserted into an existing bone cavity to a depth of 9 mm.

Fig. 9. a, Roentgenogram of lower left posterior mandibular region, from a case of atypical facial neuralgia. As in the trigeminal neuralgia case (Fig. 8, *a*), there is no indication of abnormality. **b,** Roentgenogram of the area shown in *a*, after a metal probe had been inserted into an existing bone cavity to a depth of 14 mm.

METHODS: Diagnostic procedure: " Localization by anesthetization". One first elicits from the patient a careful delineation of trigger and pain-distribution patterns. From these, a presumptive assignment of the related locus of pathosis is made. The presumptive assignment is then confirmed or revised by the selective use of the local anesthetics. Mepivicaine 3 percent, usually without a vasoconstrictor, is the anesthetic of choice. The localization procedure follows:

First, at a time when the patient is experiencing pain, a regional or conduction block is performed to stop passage of impulses from the tissue volume containing the suspected or presumptively assigned pathologic site. If this results in abolition of the related trigger

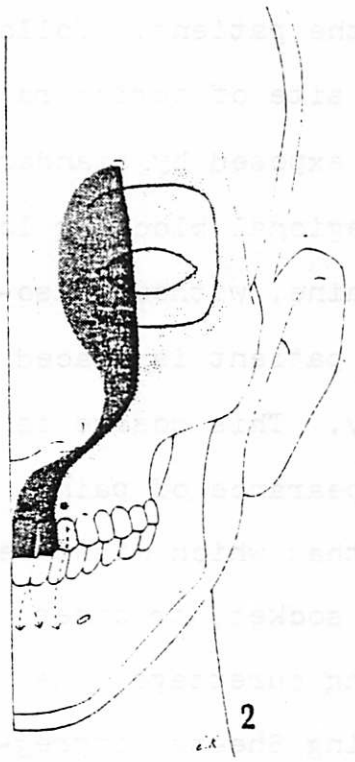
and pain perception, it suggest that pathosis is located within blocked region or volume or tissue. Next, in order to localize the site more precisely, that is, within a few millimeters, the regional block anesthesia is permitted to subside, and at the same or a subsequent session the hypodermic needle tip is pushed against or into the cortical bony paate overlaying the suspected site and a few drops of anesthetic are carefully deposited at the local site only. When deposition of anesthetic is within a few millimeters of the pathologic site, rapid abolition of the associated trigger and pain patterns will result. After the anesthesia disappears and pain returns, the localization can be verified and made more accurate, if desired, by repeated small local infiltration in the same manner. If abolition of the trigger and pain perception cannot be accomplished by the intial local infiltration, the site assigned is incorrect and the local infiltrations are made at adjacent or new sites until pain is abolished. Although such sites are usually asymptomatic, once localized as described above, one can usually elicit onset of the characteristic pain by digital pressure over the involved area.

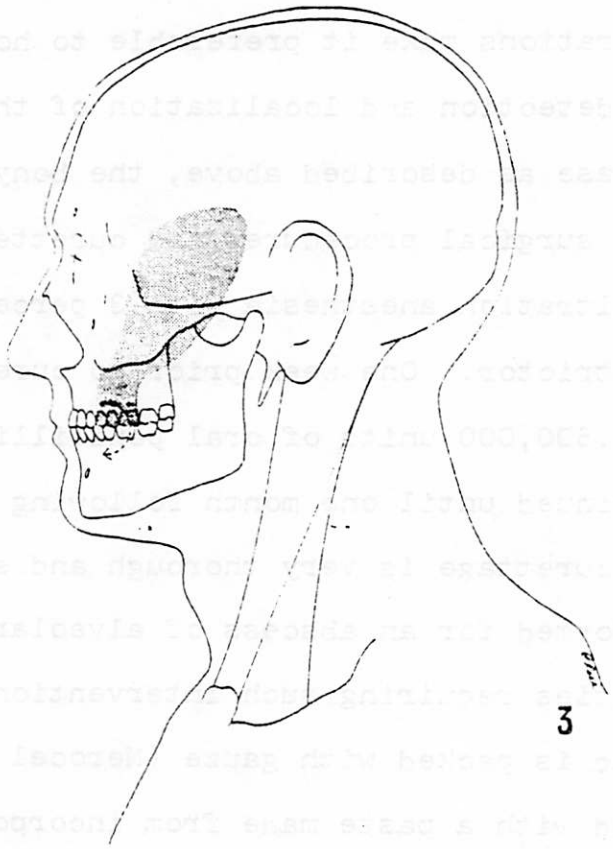
When only a single site of pathosis is involved, the "localization by anesthetization" very often leads to its rapid identification. In such cases treatment, to be described soon, leads to fairly rapid pain remission. In cases of complex causation (that is, when both bone and tooth pathosis exist), pain patterns may be so diffuse and intermingled that diagnostic localizations are more difficult. It is worth mentioning also that as we learn to listen better to the

patient's story, he or she can often lead us directly to the site of pathosis.

Treatment is on an ambulatory basis, unless medical or other considerations make it preferable to hospitalize the patient. Following detection and localization of the anatomic site of peripheral disease as described above, the bony cavity is exposed by standard oral surgical procedures and curetted, using regional block or local infiltration anesthesia with 3 percent mepivicaine, without vasoconstrictor. One week prior to curettage, the patient is placed on 1,600,000 units of oral penicillin G per day. This dosage is continued until one month following the dissappearance of pain. The curettage is very thorough and similar to that which might be performed for an abscess of alveolar bone, dry socket, or other entities requiring such intervention. Following curettage, the wound is packed with gauze (Merocel Osteo Packing Sheets) impregnated with a paste made from incorportation of 500 mg. tetracycline into 1 ml. of sterile water. The wound is repacked as required until healthy granulation tissue is established, following which the healing process is premitted to continue without interruption unless pain reoccurs. Should the latter occur, the cavity is re-exposed, recuretted, and repacked as described above to promote healing.

The pain patterns are shown in the following diagrams (Fig. 2 thru Fig. 7).





Figs. 2 to 7. Diagrammatic representations of relationships between sites of bone cavities or other dental or oral pathosis and associated pain-distribution patterns. The small black dots indicate anatomic regions in which pathosis is found (that is, region of central incisor, lateral incisor, canine, etc.). The shaded areas show the major associated pain-distribution patterns. The dotted lines and arrows shown pain distributions of lesser intensity or frequency.

Fig. 2. Pain distribution patterns associated with pathosis in *upper anterior regions*. For the *central and lateral incisors*, the pain-distribution path is vertically up to the infraorbital margin, thence directly up to the supraorbital margin, or indirectly via a path passing upward around the inner canthus of the eye. A sporadic component of lesser intensity may pass vertically down to the mandible. For the *canine region*, the pain-distribution path is vertically up to the infraorbital margin, and thence laterally, in a reversed "C"-shaped curve around the outer canthus of the eye, to the supraorbital margin. A sporadic component of lesser intensity may pass vertically down to the mandible.

Fig. 3. Pain-distribution pattern associated with pathosis in the *upper midregions* (premolar and first molar teeth). The pain-distribution path is predominantly up, with diffuse termination in the temporal region. A less frequent component may extend down from the premolar region in a reversed "C"-shaped path lateral to the corner of the mouth, to terminate the mandibular canine region.

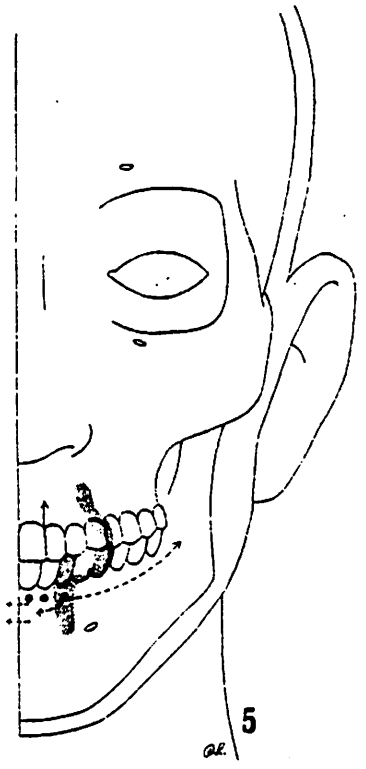


Fig. 5. Pain-distribution pattern associated with pathosis in *lower anterior regions*. For the *central* and *lateral incisors*, the pain-distribution path is vertically up to the opposing maxillary teeth, with possibly variable short horizontal referrals across the midline of the mandible. For the *canine region*, the path is vertically up and into a reversed "C"-shaped curve lateral to the corner of the mouth, terminating in the maxillary canine and first premolar regions. Horizontal referral may be quite variable and may encompass the entire mandible, or it may be localized to the canine region.

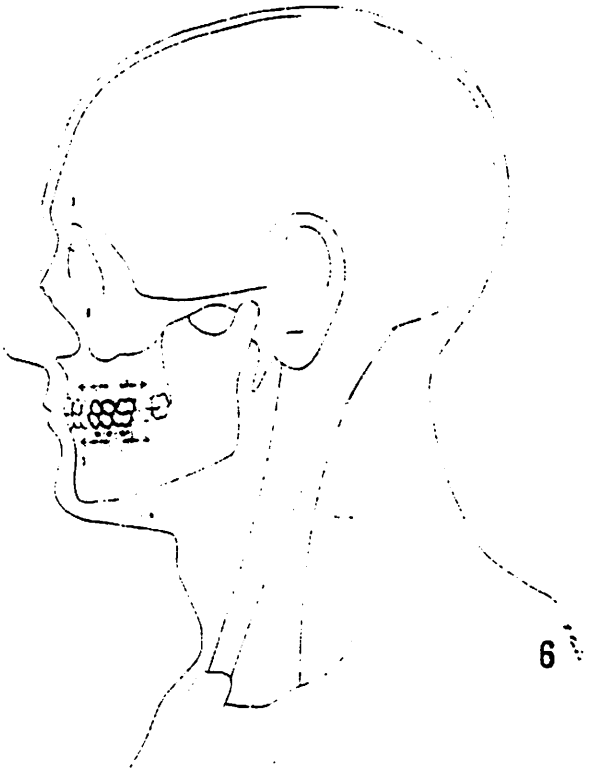


Fig. 6. Pain distribution associated with pathosis of *lower midregions*. For the area between the distal surface of the *canine* and the anterior surface of the *first molar*, the associated paths are upward to the opposing arch, with a possible horizontal component which is variable in frequency of occurrence and extent. If the opposing arch is partially or completely edentulous in the region opposite the pathologic site, the horizontal referral may encompass the anterior and posterior teeth bounding the edentulous area. From the *lower first molar* area, there is predominantly vertical referral to the opposing molar tooth, with virtual absence of a horizontal component in the opposing arch. There are short anterior and posterior components in the mandibular arch of occurrence.

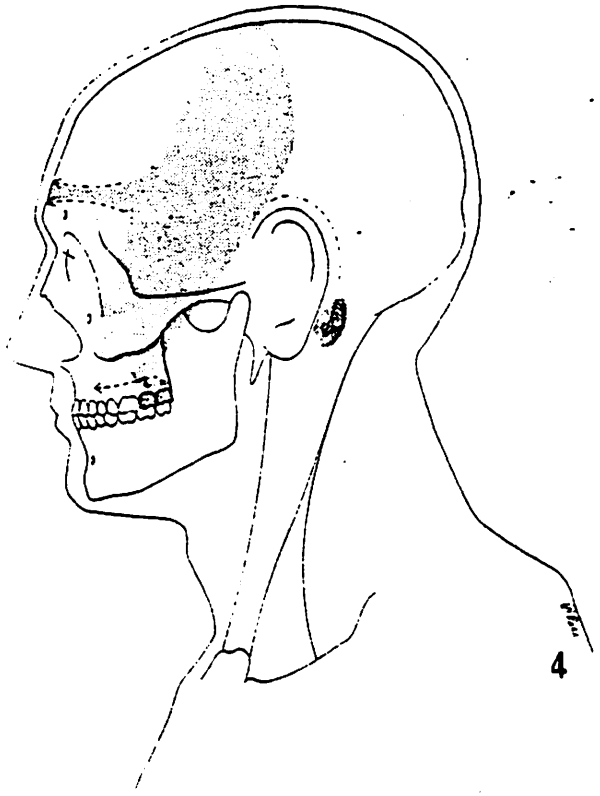


Fig. 4. Pain-distribution pattern associated with pathosis in *upper posterior regions (second and third molars)*. The pain distribution path is to the lateral surface of the zygoma, with a possibly diffuse upward component to the temporal region, which may extend to the vertex of the skull. There may be a postauricular referral, curving up to the ear. There may also be a horizontal maxillary component, extending anteriorly to the canine region, and an anterior-inferior component to the anterior-lateral margin of the tongue.

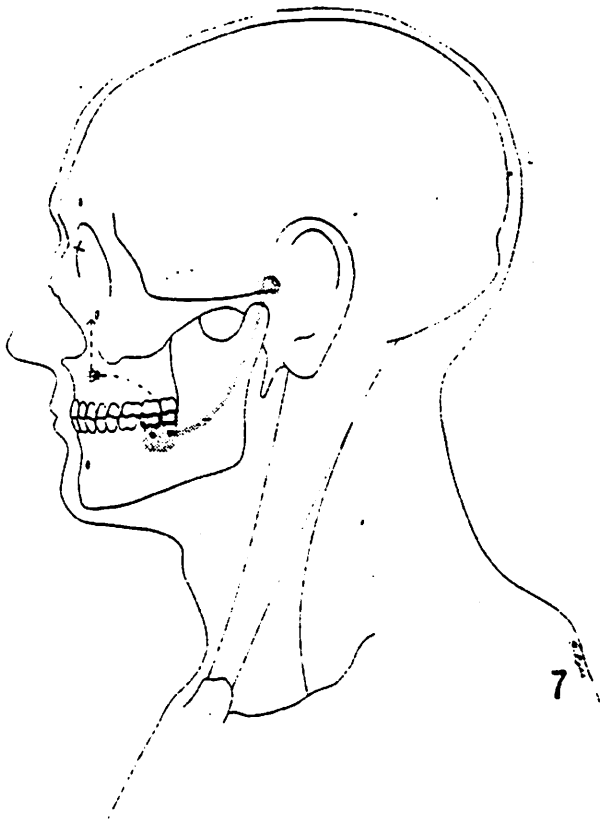


Fig. 7. Pain-distribution pattern associated with pathosis in *lower posterior regions*. The predominant referral is to the region of the temporomandibular joint. Rarely is pain referred to the opposing teeth. In several instances involving both dental and bone pathosis, there was extension of the referral path to the maxillary anterior region, including the ipsilateral orbital region.

Discussion: As far as the use of Applied Kinesiology and therapy localization as a means of finding these bone cavities, we do not have sufficient number of cases in our study yet to draw any valid conclusions. However, I will do a follow up paper on our findings once sufficient information is available.

If you require further information on this matter please write to Dr. Eugene J. Ratner, D.D.S. C/O Facial Pain Clinic, V.A. Extended Care Center, St. Albans, New York 11425, and reuest the monograph "Jawbone Cavities and Trigeminal And Atypical Facial Neuralgias".

BIBLIOGRAPHY:

Jawbone Cavities And Trigeminal And Atypical Facial Neuralgias Eugene J. Ratner, D.D.S., Philip Person, D.D.S., Ph.D., Daniel J. Kleinman, D.D.S., Gerald Shklar, D.D.S., M.S., and Sigmund S. Socransky, D.D.S. Reprinted from Oral Surgery, Oral Medicine, Oral Pathology, St. Louis, Vol. 48, No.1, pp. 3-20, July 1979.

SOME OBSERVATIONS ABOUT THE SPLEEN PANCREAS ALARM POINT

BY

JOHN O. STOUTENBURG, D.C.

It has been my observation that in most cases of spleen pancreas alarm point involvement, the involvement is related to a blood sugar problem. However, there is another condition which also must be checked out -- the condition of lymphatic stasis, as was discussed by Dr. Goodheart at the Houston meeting of I.C.A.K. in 1979.[1]

If there is a meridian involvement found during the routine kinesiological examination that we use, we always moniter the alarm points by therapy localization. When we find an active spleen pancreas alarm point, we try to differentiate whether it is lymphatic involvement or blood sugar involvement. We have found that in the majority of cases with spleen pancreas alarm point involvement by therapy localization, it is related to a blood sugar problem.

To confirm this, we use the Victor Franks test as discussed in a paper presented several years ago and since published in the collected works of the I.C.A.K. This test will be positive for blood sugar involvement, whether diabetes, hypoglycemia, dis-insulinism, or hyperinsulinism.[2]

We have confirmed the accuracy of the Victor Franks test by using the 6 hour glucose tolerance test. While we do not regulary do the 6 hour glucose tolerance test on every patient who shows a positive Franks Test, we do use it on a great majority of them. Personally, I don't think it is always necessary, but

it does have a certain psychological benefit, for patients seem more willing to cooperate on the recommended therapy when they can see in black and white that they do have a blood sugar problem.

Ocassionally there are times when the Franks test proves negative, but we still have the spleen pancreas therapy localization to the alarm point. We then further test by using a retograde position to determine whether a weakness develops in any of the muscles. This can be done either with the high low table with the patient positioned on the table with his or her head at the foot of the table, then elevating the head portion of the table. Or if you do not have a high low, simply place the patient on the back with the feet on a table, and have him or her put the lower leg at a 90% angle to the table and elevate the hips. This will give the same effect. If the spleen pancreas alarm point therapy localization is present, and we don't have a positive Franks test, there will almost always be a lymphatic involvement, which will become evident in using the retrograde position.

Treating the lymphatic involvement nutritionally with dessicated spleen (one 110 mg tablet, three times a day) has had a very beneficial effect. There is also one structural involvement related to the lymphatic stasis which must be considered. I have consistently found that the first cervical vertebra is always subluxated in an anterior direction.

Utilizing therapy localization to the spleen pancreas alarm point is a good monitering technique for determining either blood sugar involvement or lymphatic stasis involvement. I think it is a useful short cut, because if you do not find the alarm point

involvement, it is not necessary to investigate for these conditions further.

To shorten the initial examination, I suggest that if you find meridian involvement, therapy localize the alarm points; if spleen pancreas meridian involvement is apparent, then differentiate whether it is pancreas involvement with a subsequent blood sugar problem or a spleen involvement, which would be associated with the lymphatic stasis problem.

Using this approach should effectively and specifically identify patient treatment needs in much less time and without further testing, thus proving a valuable technique for us and for our patients.

REFERENCES

1. G. J. Goodheart, Jr., D.C. Applied Kiensiology, 1979, PP. 1-13
2. Victor Frank, D.C. Collected Papers of I.C.A.K.

Temporal Mandibular Joint Dysfunction

ABSTRACT

By Jeffrey E. Weber, M.A., D.C.

The temporal mandibular joint is becoming of increasing importance to those in the health professions concerned with over-all body integrity. This paper will explore beiefly some of the research that has been done on this joint, placing it in perspective to the integrated functioning of man as a psychological, chemical and structural being. The purpose of the article is to document clinical findings where undue emotional stress caused bilateral hypertonicity of the temporalis muscles, which in turn caused bilateral dysfunction of the temporal mandubular joint localized in the open position.

Temporal Mandibular Joint Dysfunction

By Jeffrey E. Weber, M.A., D.C.

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The temporal mandibular joint (TMJ) is becoming increasingly important to those in the health professions concerned with over-all body integrity. This paper will explore briefly some of the research that has been done on this joint, placing it in perspective to the integrated functioning of man as a psychological, chemical and structural being. The purpose of the article is to document clinical findings where bilateral TMJ dysfunction has been seen to be caused by bilateral hypertonicity of the posterior temporalis.

Man, as an integrated being, is like a "structural, chemical, psychological, equilateral triangle" (Goodheart 1074:22). Nearly everyone is familiar with psychosomatic illnesses in which the mind can cause the body to react with a physical dysfunction or imbalance. The body can, however, also affect the mind. Goodheart theorizes that there are connections between the body and the mind whereby emotional trauma can turn on a 'switch' between mind and body. If this 'switch' is not closed, remembering the painful incident can cause weakness of a selected indicator muscle. These 'switches' are closed by treating the neurovascular reflex centers situated bilaterally on the frontal bone eminence. After the patient thinks about or discusses a traumatic incident, a previously tested strong muscle (for example the pectoralis

major, clavicular portion) will re-test weaker. The patient does not necessarily have to be aware of the incident or problem. If the doctor brings up a subject which he feels is bothering the patient, the muscle will re-test weaker, even though the person may claim that there is nothing bothering them at that time. Closing the 'switch', then, involves giving the neurovascular reflex "a light tugging contact, waiting for pulsation" (Walther 1978:198). This treatment is more effective if the conception vessel in 'opened' by running the meridian from the symphysis pubis up to the lower lip, and must by closed in the opposite direction after contact has been made with the reflex center.

The temporal mandibular joint is only one of many in the body, but its relatively large representation on the homuncular mapping of the sensory-motor cortex by Pennfield and Rasmussen indicates that it is essential to normal body functioning. Clearly there are neural connections between parts of the brain, as well as between parts of the body and brain- body interconnections. A disturbance in one part of the body, then, will cause disturbances in other parts of the body which can be evidenced in a variety of symptoms. It follows that with the large area devoted to the TMJ in the brain, that dysfunction in this joint will have ramifications in other parts of the soma. For example, it has been seen that subluxations/ alterations of the structure of the posterior ilium/ischium can

be traced to dysfunction in the TMJ (Walther 1978:264). In addition correction of the TMJ alone in many instances has corrected the posterior ilium subluxation.

Temporal Mandibular Joint

The temporal mandibular joint consists of the mandibular fossa of the temporal bone articulating with a disc which in turn articulates with the condyle of the mandible. There are four primary muscles of mastication-masseter, internal and external pterygoids, temporalis- and an accessory, the buccinator. All these muscles must work together to provide balanced functioning of the joint, and any noxious stimuli can upset the balance between these muscles. As the jaw opens, there is a horizontal rotation and then a gliding motion of the condylar head produced by the external pterygoid and gravity. Closure is the reverse motion as the internal pterygoid, masseter and posterior temporalis contract.

Goodheart(1978:77-79) explains the concept of reactive muscles. Briefly, all muscles have antagonists that are 'set' in equilibrium with prime mover. The prime mover 'set' is done by the intrafusal muscle spindle fibers at a given firing rate and the 'set' becomes too high. This hypertonicity will, in turn, inhibit the activity of the antagonist or reactive muscle causing it to become hypotonic or weak. In relation to the jaw, Goodheart (1977:93) has found the masseter and buccinator to be

reciprocally reactive to the external pterygoid, and that it is uncommon to encounter involvement of the internal pterygoid or temporalis.

Temporalis Muscle

The temporalis muscle originates from the temporal fossa and deep surface of the temporal fascia. It inserts on the medial surface, apex and anterior border of the coronoid process of the mandible and the anterior border of the ramus of the mandible almost as far forward as the last molar tooth. It is active as a postural muscle, keeping the mouth closed during relaxed standing, sitting, etc. The posterior fibers of the muscle elevate and retract the mandible during bilateral contraction. When only one side contacts, the jaw is pulled to the ipselateral side.

Goodheart (1978:121) found that most TMJ problems were seen during therapy localization in the closed position. Therapy localization is a technique whereby the doctor selects a strong indicator muscle, such as the quadriceps, and tests its strength. The patient is then asked to put his/her hands over the TMJ and the muscle is retested. Problems in the TMJ will be evidenced by weakness in the previously strong muscle. The procedure can be done for one side, and/or with the mouth open or closed to pinpoint which muscles are problematic. Since the joint was in the closed position, the muscles involved are the masseter, temporalis,

internal pterygoid and buccinator. He found that in the majority of cases, the spindle cells of the masseter were 'set' too high with only rare involvement of the temporalis and internal pterygoid.

It has already been stated that the masseter and buccinator are reactive to the external pterygoid. When discussing Temporal Tap, Goodheart (1978:107) states that " in an attempt to understand the relationship of the temporalis muscle to the temporal mandibular joint, it became obvious that in any temporal mandibular joint problem 98% of the seemed to resolve themselves into one side or the other, and a great many of them seemed to relate themselves either to the masseter or the buccinator muscle", with the temporalis functioning as the "monitor of the computer activity of the temporal mandibular joint".

Thus, it seems clear that the temporalis plays and important, but only theoretically understood, role in TMJ and general body functioning.

Clinical Findings

The following section is based on observations taken during clinical experience while treating patients with TMJ dysfunction. These findings, to the authors' knowledge, have not been documented in previous research.

Evaluation of a small but significant number of patients ranging in age from 23-72, eleven females and nine males, revealed the following. All the patients were under undue emotional and/or psychological stress at the time they came into the office. Upon palpation, the temporalis muscles were found to be tender, bulging and hypertonic on both sides. TMJ dysfunction was localized bilaterally in the open position. Furthermore, the external pterygoid was seen to be reactive to the temporalis.

The temporalis was treated using the approximation of muscle spindle technique. This consists of pulling the muscle apart using 2-3 pounds of pressure to approximate the intrafusal spindle cells' ends, thereby weakening the muscles and reducing hypertonicity. In a number of patients, the fascial release technique was used in conjunction with the muscle spindle correction. These treatments eliminated the bilateral TMJ dysfunction. After treatment, a number of patients experienced some emotional catharsis. It was decided to treat the neurovascular reflex center to avoid recurrence of the same problem. Once the hypertonicity of the temporalis was relieved, it took less time than usual for the neurovascular pulse to be illicited, and with some immediate strengthening of the pectoralis major, clavicular portion, was seen. None of the patients have had additional treatment of the bilateral TMJ dysfunction.

To summerize, a connection was made between the emotional upset and the hypertonicity of the temporalis and the TMJ dysfunction.

Specifically, the emotional trauma caused the bilateral hypertonicity of the temporalis, which in turn caused the bilateral TMJ dysfunction. Since the temporalis functions to close the mouth, it is contraindicated that the dysfunction should be localized in the open, rather than closed, position.

Goodheart makes note that the great majority of cases involving TMJ dysfunction are not bilateral conditions or localized in the open position. Since these findings are bilateral in nature, it causes an additional variable to be brought into consideration such as a reactive temporalis. Furthermore, Goodheart make note that the masseter and buccinator are reactive to the external pterygoid and vice versa. These findings indicate that the external pterygoid is reactive to the hypertonic temporalis in settings where there is undue emotional stress. This does not necessarily contradict previous findings. Rather, these new findings may be seen as adding to the list of complex interactions between the muscles of the temporal mandibular joint. In addition, they strengthen the arguement that the temporalis is essential to normal integrated functioning of the joint.

Conclusion

Prior to these findings, it was not suspected that the temporalis would be the cause of bilateral TMJ dysfunction in the open position. There is still much to be learned about the interrelations between the muscles of this joint, and

specifically about the role the temporalis plays in normal functioning of the TMJ.

Finally, it seems that upon examination of new patients, the clinician should not over look the possibility that the temporalis can give valuable clues as to the structural and functional aspects of the TMJ, as well as the emotional health of the patient.

REFERENCES

Daniels, L., Worthingham, C. Muscle Testing -3rd Edition. Philadelphia: W. B. Saunders Comp., 1972

Goodheart, George. Innate and Interdependent Triangularity of Man. The Digest of Chiropractic Economics. Jan/Feb: 22-25, 1974

_____. Temporal Mandibular Joint - The Most Important Joint in the Body. The Digest of Chiropractic Economics. Sept/Oct: 18-96, 1977

_____. Applied Kinesiology- 1978 Workshop Procedure Manual 14th Edition

Gray's Anatomy. Philadelphia: W. B. Saunders Comp., 1973

Hoppenfeld, S., Shore, N. A. , Travell, J., Weinberg, L. A. When a Painful Jaw Defies Diagnosis. Patient Care. Dec: 94-135, 1977 Penfield and Rasmussen. Cerebral Cortex of Man. Macmillan Co. Walther, D. S. Applied Kinesiology- The Advanced Approach in Chiropractic. Systems D. C., 1978

Woodburne, R. T. Essentials of Human Anatomy. New York: Oxford University Press, 1978

KIDNEY

by Paul A. White, D.C.

Abstract

The Kidneys, particularly the proximal convolutions of the nephrons, are the guardians of the nutritional wealth of the body. Elimination and control of bodily excesses of water, sodium (edema), potassium, phosphorous, chloride, proteins and the nitrogenous and sulfur containing metabolites of protein are necessary functions of the kidney. When symptoms of renal insufficiency occur, dietary modification and are often necessary to maintain homeostatic balance. The metabolic and synthetic activities of the kidney are second only to those of the liver.

Because the kidneys are the primary regulators of the balance between intake and excretion of nutrients and by products, disturbances in various functions of the kidney can have important consequences to the nutritional well-being of the patient.

Physiology

The kidney is composed of thousands of minute tubes, known as the uriniferous tubules, or nephrons. Their number is estimated at about 2,000,000 and their total length at approximately 75 miles. From each kidney springs a tube, the ureter, which carries the urine to the urinary bladder. From there another tube arises, the urethra, by which the urine is voided.

In their excretory function kidneys exercise a fine and selective discrimination. The miracle of this function goes something like this: They excrete no glucose except that above the normal blood limit of 0.17 per cent. It excretes only one-half of the urea and only as much NaCl as necessary to maintain the correct osmotic pressure of the blood even though both substances are highly soluble, diffusible, and dialyzable. It can also differentiate between dissolved hemoglobin or egg albumin which are excreted and the plasma proteins which are normally not found in the urine. It also returns to the body some of the materials taken out by the filtration system.

NERVOUS CONTROL

Like most glands, the kidney are supplied with nerves; from the great sympathetic nerve, the splanchnic branches proceed to the kidney. They have no direct influence on the kidney cell even though their stimulation may affect excretion of urine. The

changes in renal secretion following a stimulation of the renal nerves are due to alterations in the blood pressure and blood flow.

BLOOD PRESSURE

The kidney is evidently one of the mechanisms of the body capable of influencing blood pressure. In all cases of hypertension the kidney should be considered. High diastolic pressure generally indicates primary kidney involvement.

In some instances of prostate trouble where the bladder sphincter is severely pressured attention should be given to the kidney as the backed up urine could cause hydronephrosis.

Salt intake should be guarded in kidney disorders. Some physicians now believe that the cause of dropsy is not too much water but too much sodium. This prompts the body to hoard water in abnormal amounts, usually as a result of a heart or kidney ailment.

SYMPTOMS AND SIGNS

Urinary symptoms
burning sensation upon urination
Blood pressure changes
Toxemia, uremia, Kidney overload
Lower back and/or leg pain
Urinary incontinence
Fluid balance, edema, ascites, localized edema
Pitting edema
Anemia (found in chronic nephritis)
Arthritis (toxicity)

LABORATORY TESTS

a. BUN

Urea is the chief end product of protein metabolism. It is excreted almost entirely by the kidneys and comprises 50 to 60 percent of the Non Protein Nitrogen. In general, BUN levels parallel those of the NPN, but the BUN is the preferred test.

b. Creatinine

The daily excretion of creatinine in urine is extremely constant in normal persons. This fact enables clearance of creatinine over a 24-hour period. The clearance value thus obtained is the amount of serum that must have been cleared within the 24-hour period in order to provide that quantity of creatinine found in the urine over the same period. Thus, the clearance value is an approximation of the glomerular filtration rate.

c. Total protein

These various protein determinations are helpful in diagnosis of many conditions. Any one of the four procedures taken separately (total protein, albumin, globulin, A/G Ratio) may give misleading results, so they are performed as a group. Electrophoresis is the method of choice for determining accurate levels of albumin and globulin.

d. Globulin, Albumin, A/G ratio

Albumin, having the smallest molecular weight of the serum proteins, is most readily lost by passage through the damaged glomerulus in kidney disease. A damaged liver also apparently loses the ability to synthesize this protein first. Chronic infections are often associated with an increase in the globulin fraction, thus causing a decrease or reversal of the normal A/G ratio. The conditions listed on the chart are some of the more common causes of serum protein abnormality.

e. Sodium

Sodium is the most abundant action in the extracellular fluid. It is of greatest importance in osmotic regulation of extra-intracellular water balance and in normal, acid-base equilibrium. This test will be found to be reduced in renal tubular disease.

f. Potassium

Potassium is the chief ion found in intracellular fluid. Only a small proportion of the total body potassium is contained in the serum, but its proper level is critical to normal physiology. In renal insufficiency the element will be found to be reduced.

g. Chloride

Chloride is the principal anion found in serum. The chloride level along with sodium, potassium, and bicarbonate is important in evaluating acid-base relationships and the state of hydration. Found increased in nephrosis and decrease in chronic, severe nephritis.

h. Uric Acid

Uric acid, a purine compound and one of the constituents of the non protein nitrogen, in the body from ingested nucleoproteins. Is increased in renal impairment.

<u>MUSCLE TESTING ASSOCIATED WITH THE KIDNEYS</u>

As we know there are certain muscles associated with certain

organs in the body. The muscle that is linked with the kidneys is the psoas. This muscle derived its orgin from the transverse process of four and sometimes five lumbar vertrebra, it traverses inferior and laterial to attach to the lesser trochanter of the femur. This muscle is tested by having the patient lay in a supine position. He then flexes his hip with abduction and laterial rotation. The Doctor directs force against the anteromedial aspect of the leg in a direction of extension and slight abduction, while stablizing the pelvis on the opposite anterior superior iliac spine.

NUTRITIONAL SUPPORT

Concentrated raw kidney with vitamins A and C (Kidnaplex) are necessary to support growth and repair of kidney tissue, reduce inflammation and promote normal epithelial reproduction. A high potency vitamin B-complex containing cholin (Nutribeta) is all-important to prevent capillary damage, hemorrhage in the tubules, and loss of serum lecithin which may allow deposits of cholesterol and triglycerides in the tubules, with excessive loss of albumin in the urine. Vitamins E, C, and A are needed to conserve oxygen for the tissue. Trace elements such as Calcium, magnesium and potassium must also be supplied.

References

Modern Nutrition in Health and Disease, sixth edition, Goodheart, Robert S.
Textbook of Medical Physiology — Guyton
Blockwood Materia Medica (first addition)
Merck Manual (11 Edition)
Health Builder — R. I. Rodale
Der Kleine Dokder — Dr. A. Vogel
Applied Kinesiology — David S. Walther,D.C.

Fixations - A Triad of Threes

by

Stanley A. Wieczorek, D.C.

Abstract: In the presence of bilateral indicators, e.g. temporo sphenoidal indicators, occipital line indicators or trapezius to name a few, a succession of fixations is present. Their location is predictable but not the order in which they appear.

In a paper by this author entitled, "On the Predictability of the Thoracic Subluxation",[1] it was shown that in the presence of a lumbar subluxation one could predict the level and type of subluxation that would be present in the thoracic spine. Expanding on these findings it is now an absolute fact that fixations will have both reciprocals and Lovetts present.

In a paper presented by Dr. Walter H. Schmidt, Jr. entitled, "Vertebral Fixations Which Mask Other Structural Faults",[2] presented at the June 1976 meeting, Dr. Schmidt showed that some fixations would mask other fixations. Fixations as discussed by Dr. Goodheart in 1970[3] are described as a group of three vertebrae which become fixed to one another and must be corrected by reducing the fixation in a special manner. These fixations are perpetuated by aberrant hypertonicity of the rotatories longus and brevis. This author has, for example, found that when any bilateral occipital, zone four, showed nodulation and swelling, it would be a fixation in the lower cervicals with bilateral popliteus weakness. In some instances the

the popliteus weakness was not present immediately in the clear but upon examination of the lumbar two area, a fixation could be found and when corrected it allowed the lower cervical fixation to manifest in bilateral popliteus weakness. This would then be followed by bilateral teres major weakness and fixation in the sixth thoracic area which would then be available for correction. These fixations might occur in any order not necessarily that which was just described. In other words, the cervical might show first, lumbar second, thoracic third or thoracic first, cervical second and lumbar third. The reciprocals referred to above are those listed by Dr. M.B. DeJarnette on his occipital line chart, line 2, vertebral visceral relationships.[4] This chart may be found at the end of this paper as an addendum. The temporo sphenoidial line is familiar to all Applied Kinesiologists as are Lovett relationships. A paper by Dr. Marc S. Rosen[5], illustrates many chiropractic vertebral indicators. Whenever these are found to be bilateral, a fixation can be found in the three areas mentioned previously. It is this author's contention that fixations are top priority and must be corrected before Category treatment is initiated. Priority because there must be dural port stress in the presence of fixation. This dural stress within the spinal column would interfere with the correction of pelvic or cranial spinal fluid management. Recently Dr. Goodheart pointed out that some fixations could not be found (that is bilateral weakness) without a full inspiration on the part of the patient. I believe this is another indication of meningeal stress. It should behoove each and every Applied Kinesiologist to find these fixations

and establish normal spinal fluid flow throughout before initial category, cranial or spinal subluxation correction. If an upper cervical fixation is present, a lower lumbar fixation will be found as well as a fixation in the 9th dorsal area. On occasion these will all challenge in the clear and all bilateral weakness will be present. The significance of this paper is to provide the information that if the triad of fixations is not present originally, it will be present as previous corrections allow hidden fixations to make themselves available for correction. I might also point out that a limbic type fixation could mask a dorso-lumbar fixation and vice versa. Very often a dorso-lumbar fixation will mask a cervico-dorsal fixation and occipital fixation often masks sacral or iliac fixations.

As described in a supplemental tape in 1980 by this author, fixations do not therapy localize. They must be located via challenge. The challenge would involve the three vertebrae in fixation and correction may be accomplished with the use of an activator. Assuming that we have challenged dorsals 6, 7, and 8, dorsal 6 being right posterior, would be adjusted inferiorally and anteriorally and dorsal 7 would be adjusted anteriorally on the opposite side or the left. This is accomplished with the Lee activator[6] without difficulty or discomfort to the patient. If the challenge was that dorsal 8 is posterior, it would be adjusted superiorally and anteriorally on that side and dorsal 7 would be adjusted straight anterior on the opposite side. To determine that we are challenging fixations and not subluxations, we would determine if a respiratory assist was present. If an inhalation assist is present, we are dealing with

subluxation, which by the way, could persist or be uncovered after fixations are reduced. If an exhalation assist is present we are dealing with a subluxation which is not priority at this time. If there is no respiratory assist we are, in fact, dealing with fixation and have uncovered no less than a triad of fixations to be corrected.

References

1 Stanley A. Wieczorek, D.C., On The Predictability of the Thoracic Subluxation, Collected Papers of the Diplomates of the International College of Applied Kinesiology, 1979.

2 Walter H. Schmidt, Jr., D.C., Vertebral Fixations Which Mask Other Faults, Collected Papers of the Diplomates of the International College of Applied Kinesiology, 1976.

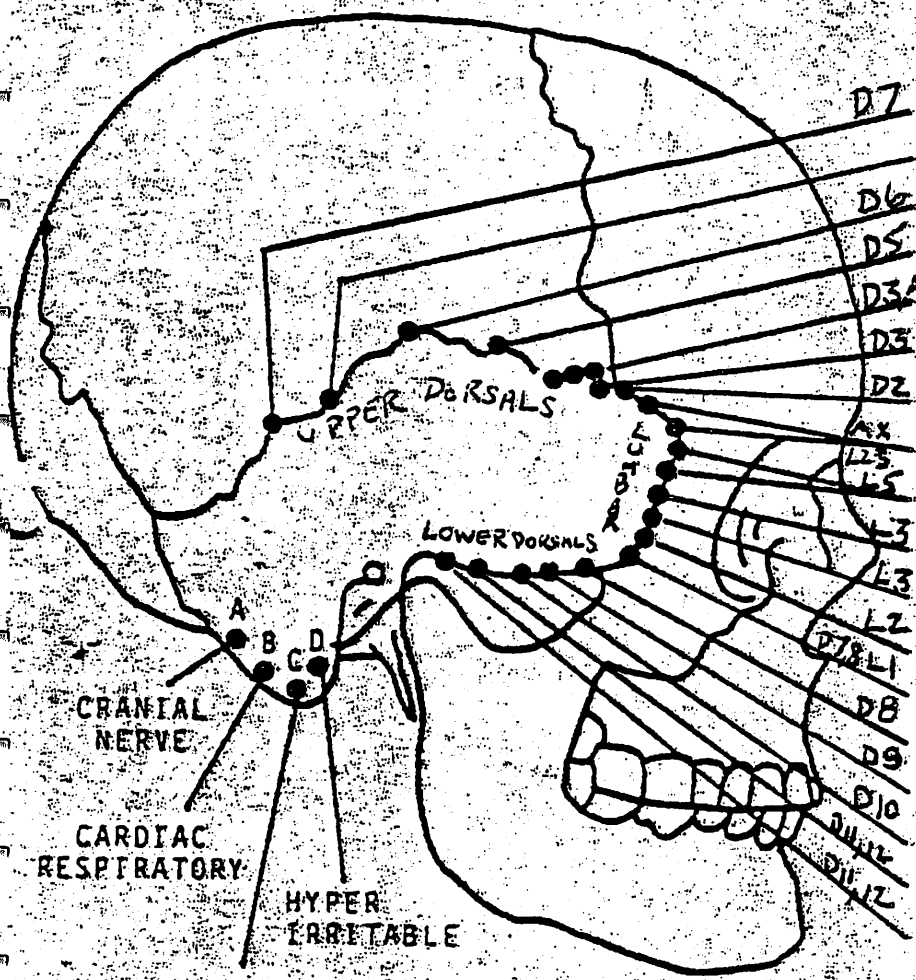
3 G. J. Goodheart, D.C., Applied Kinesiology - 1970 Research Manual. Privately Published. Detroit 1970.

4 M.B. DeJarnette, D.C., Chiropractic Manipulative Reflex Techniques, 1966. Privately published. Nebraska City, Nebraska.

5 Marc S. Rosen, D.C., Chiropractic Indicators, Collected Papers of the Members of the International College of Applied Kinesiology, 1981.

6 Activator, available from Activator Methods, Redwood Falls, Minnesota.

DIAGNOSTIC T.S. AREAS



D7 MIDDLE TRAPEZIUS -Spleen, eye, ear
ABDOMINAL MUSCLES - Sm. Intestine
D6 LATISSIMUS DORSI - Pancreas
D5 PECTORALIS MAJOR, CLAVICULAR- Stom
D3A CORACO-BRACHIALIS, POPLITEUS Gall Bladder
D3 DELTOID MUSCLE, ANT. SERRATUS Lun
D2 SUBSCAPULARIS - Heart
Ax NECK FLEXORS, EXTENSORS - Sinuses
L2,3 ILIACUS - Ilio-cecal Valve
L2 PIRIFORMIS, ADDUCTORS, GLUT. MED Sc
L3 TENSOR FACIA FEMORIS - Colon
L3 GLUTEUS MAXIMUS - Sex
L2 QUADRATUS LUMBORUM - Appendix
D12 L1 HAMSTRINGS - Colon
D8 PECTORALIS MAJOR, STERNAL - Liver
D9 GRACILIS - Adrenal
D10 QUADRICEPS - Small Intestine
D11 L2 PSOAS } Kidney
D11 L2 PSOAS }

COURTESY:

DR. M. L. REES
SEDAN, KANSAS

Segmental Reflex Chart, Occipital Line Two							
Occiput	1	2	3	4	5	6	7
Dorsal	1-2 10	3 11-12	4/5	6	7	8	9
Lumbar			1	2	(3)	4	(5)
Sacral			Treat 1 →	Treat 2 →		Treat 4 →	

UPPER EXTREMITY

PERIPHERAL NERVE ENTRAPMENT

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ABSTRACT:

The evaluation of peripheral nerve entrapment has been a standard procedure in AK since Goodheart's introduction of the carpal tunnel syndrome. Presented here is the use of AK to evaluate the thoracic outlet syndromes and peripheral nerve entrapment in the upper extremity. The muscle testing procedures are combined with some of the standard orthopedic and neurologic examination procedures.

INTRODUCTION

Peripheral nerve entrapment relates to some form of irritation to a peripheral nerve which changes its ability to function normally. It generally is considered to cause injury and inflammatory response to the nerve. Here we will also discuss the more subtle irritation which disturbs a nerve's function but does not appear to create pathology of the nerve.

Impingement of the nerve usually occurs where the nerve traverses a confining space, such as an osteofibrous tunnel like the carpal tunnel; through a muscle such as the supinator; or between a muscle and a stable structure such as bone, as in the pectoralis minor syndrome. There are also a few other - more individualized - types of impingement. The entrapment

may begin with specific trauma, but often it is of such an insidious nature the patient is not certain when the problem actually began. Sometimes an acute episode will be blamed on a hard day's work, but investigation shows the day's activity was no different from any other.

Entrapment neuropathies can have an exogenous or endogenous etiology. An exogenous trauma may be to the skeleton, causing a subluxation of an articulation and creating strain of the muscles which support it. The trauma may change the shape of an osteofibrous tunnel, or the way muscles work together. An endogenous involvement may result from muscular imbalance secondary to some organ or glandular dysfunction, or systemic edema which increases pressure on a nerve within a confined area already borderline to nerve irritation. The basic underlying cause of an entrapment may be remote from the actual area of involvement; e.g., a pelvic disturbance can cause a shift in the shoulder outlet resulting in the entrapment. Failure to observe the basic underlying cause, recognizing only the entrapment, is just treating the symptoms.

Some peripheral nerve entrapment may be the result of old fractures, adhesions, or congenital anomalies. This type of involvement is out of the scope of this text, other than for purposes of differential diagnosis. Diagnostic evaluation attempts to eliminate these conditions from conservative treatment. If in doubt, a conservative approach is justified if there is no evidence of space-occupying lesions, severe

vascular or nerve compression, etc. The condition should respond in a maximum of 3 to 4 months. More time than that can cause additional nerve damage. Consideration of surgical decompression is advisable if there are no results from this length of therapeutic trial.

The peripheral nerve, unlike a blood vessel, does not easily stretch. It must be able to move freely in relation to its neighboring structures to avoid irritation. The irritation creating symptoms is often long-standing; it causes an inflammatory response in the nerve and maintains its improper function. Short-term subtle irritation on a nerve does not appear capable of changing the characteristics of its function on a constant basis. It is necessary to diagnose the entrapment early so that conservative treatment is effective. Chronicity increases the chance that surgical decompression may be necessary.

When considering the possibility of peripheral nerve entrapment, several differential diagnoses must be made. The term "peripheral nerve entrapment" includes the radix of the nerve at the intervertebral foramen. This section will relate to the diagnosis of peripheral nerve entrapment excluding the spine. To put this into perspective, the diagnosis of a piriformis syndrome indicates an entrapment of the sciatic nerve as it passes under the piriformis muscle. This is a diagnosis of a localized peripheral nerve entrapment. A more in-depth study taking the total body into consideration may reveal that subluxations in the spine or pelvis are causing a structural imbalance that puts tension on the

piriformis muscle in such a manner that peripheral nerve entrapment results. Here we find the cause of the involvement remote from the actual location of nerve entrapment. Another example - using the secondary area of involvement - is a dysfunction of the foot causing an imbalance in the piriformis. This in turn may create a sciatic neuralgia and also cause a sacral subluxation, because of the piriformis' role in sacral stabilization. Or the problem may actually be local; the piriformis muscle may have been traumatized by an exogenous source, creating muscle imbalance and making it the primary cause of the peripheral nerve entrapment.

This type of peripheral nerve entrapment must be differentially diagnosed from a spinal involvement such as a subluxation, intervertebral disc, or foramenal encroachment from degenerative joint disease. This requires diagnosing the level of nerve involvement. In order to make the differential diagnosis, numerous levels where the nerve can be irritated must be evaluated. Various levels can cause a similar set of symptoms which must be objectively evaluated.

Peripheral nerve dysfunction may be the result of ischemia. In this case, some of the symptoms indicating peripheral nerve entrapment may be present, but the actual area of dysfunction is in the autonomic nervous system. On the other hand, a peripheral nerve entrapment may cause a secondary ischemia which simulates Raynaud's phenomenon, resulting in the patient being treated for an autonomic disturbance rather than the real cause of peripheral entrapment.

Disease of the nerve - such as a neuroma - must also be differentiated. It becomes obvious that all these differentiations are necessary, because failing to find the basic underlying cause of the problem, and directing attention to the wrong pathological or functional process or to the wrong neural localization, leaves the patient essentially untreated.

EXAMINATION

History

The physician's clear mental picture of various areas in the body which are susceptible to peripheral nerve entrapment, and the distribution of the nerve involved, should indicate the possible areas of entrapment. Often there will not be a specific traumatic episode described during consultation because many peripheral entrapment syndromes are chronic, having developed symptoms insidiously.

The symptomatic picture presented will depend greatly on the type of nerve involved. The three potential types are skin sensory, motor, and mixed. Although these classifications are given, there are no "pure" peripheral nerves. The skin sensory nerves carry afferent impulses, and also supply efferent fibers to various structures in the skin. The motor nerves return afferent impulses from the proprioceptors of the muscle, joints, and associated connective tissues. The motor nerve to a muscle returns sensation from the joint(s)

upon which that muscle acts. A mixed nerve is a combination of skin sensory and motor nerves in one trunk.

In skin sensory nerve involvement, the paresthesia is usually precisely defined by the patient. It may be a sharp, well-described pain, numbness, or altered sensations.

Motor nerve involvement will affect muscle activity which, if chronic, may be demonstrated as atrophy. The associated pain is more general and less well-defined by the patient. It will usually involve the muscle, its associated joints, and connective tissue.

Most neuropathies of either a motor or skin sensory nerve will have some characteristics of both types. The often involved mixed nerve may have characteristics of only the motor or skin sensory fibers involved. There may be chronic sensory disturbance with no muscle atrophy, or vice versa.

Palpation and Inspection

Palpation and inspection primarily deal with three types of evaluation for a specific nerve suspected of involvement. These are inspection of the skin, muscle, and the course of the nerve.

Evaluation of the skin deals first with observation of its texture. There may be a palpable change in the area of the nerve distribution, or the change may be only visually observed. The texture change indicates how much involvement there is of the sympathetic fibers. This may influence perspiration and circulation into the area. If the nerve

is severed proximal to the sympathetic ganglia, there will be an absence of sweating with proper stimulation. Severance of a nerve on a peripheral basis will also cause lack of response to proper stimulation, and there will be no response to cholinergic drugs. A peripheral irritation will cause undiminished or excessive sweat reactions. [Korting and Denk '76_]

The skin is also evaluated for circulation by visualization and palpation. The physician can best feel for cool or warm areas by running the dorsal aspect of his hand over the various dermatomes being evaluated. When evaluating the skin for excessive or diminished thermal areas, remember that imbalance of the meridian system can create hot and cold spots, especially in specific locations. Plethora can be observed by digital pressure on the skin to blanch it, and then noting the length of time it takes for balanced color to return. The plethora may be systemic or localized to an extremity. If localized, areas of possible venous entrapment must be evaluated. Thorough evaluation of the circulation and sensibility of the dermatomes is part of the skin evaluation; this will be discussed later in the specific areas.

The muscles innervated by the nerve being evaluated should be inspected and palpated for consistency, pain, and size. When a motor nerve is involved, the pain will typically be throughout the muscle and in the joints served by that muscle. The patient will usually complain of a dull, deep, general-type

pain rather than the more sharp, delineated pain of skin sensory nerve involvement. The muscle may have atrophy that is observed only by astute palpation, especially in the earlier stages of entrapment. There may be muscle dysfunction which is not observable by palpation and inspection, but is observed by manual muscle testing as used in applied kinesiology. Specific challenge, therapy localization, and types of muscle tests will be explained with the various syndromes.

Palpation and inspection of the course of the nerve is very valuable. In many areas, the nerve is rather superficial and can easily be palpated. This may reveal tumors or pain along the nerve. Consideration of pain and disturbance of function peripheral to the site of impingement are not adequate; there is often retrograde pain distribution when palpation or inspection reveals tenderness, both distal and proximal to the point of involvement, which is known as the Valleix phenomenon. [Ropell and Thompson '76_] The site of involvement may be localized by observation of swelling at a potential area of entrapment. The swelling may be a result of trauma to the area, or it may be systemic from a toxic condition, hormone imbalance, or disease process.

A general physical examination is required to determine if there are any systemic health problems. Toxicity from conditions such as the ileocecal valve syndrome seems to concentrate swelling in areas of generalized weakness. Thus, if a patient has subclinical disturbance of structure - such as a tight osteofibrous tunnel or weak intervertebral disc

- swelling may cause an additional enlargement of the structures which creates a symptomatic involvement. Thus both the systemic and localized problems must be treated. Other conditions such as hypothyroidism, pregnancy, rheumatoid arthritis, acromegaly, hypoadrenia, and generalized structural imbalance cause an individual to be more susceptible to peripheral nerve entrapment. In systemic problems such as nutritional deficiency, the distal peripheral nerves are more vulnerable to dysfunction. In these cases the entrapment is more likely to be found in distal areas such as the carpal tunnel, tarsal tunnel, and intermetacarpal tunnel.

SENSIBILITY STUDIES

Sensory examination can help to define cortical and thalamic lesions and cord involvement, as well as peripheral neuropathies. Here we will deal primarily with peripheral nerve entrapment.

The patient must be cooperative and alert, and the physician must be careful to avoid suggestions that influence the patient's reponse. If a thorough sensory evaluation is made, it can be very time-consuming and tiring to both the physician and the patient. It is best, then, to intersperse this activity with other examination procedures to break up the monotony of the examination.

The tools of examination include a wisp of cotton for evaluating soft touch, a pin with a sharp point and dull head

mounted on an applicator for pain, vials to contain both hot and cold water for thermal testing, a tuning fork for deep sensation, and a compass with two dull points for two-point discrimination. It is necessary for the examiner to have a general knowledge of dermatome distribution and the congenital variations of the peripheral nervous system. A chart should be available for mapping the examination findings. When a test is to be done, the patient should be familiar with its procedure and how to respond to the stimulus to avoid any misunderstanding. To insure that the patient does understand the test, go through a demonstration and have him respond to the stimulus.

When the testing procedures actually begin, it is best for the patient to close the eyes and relax, concentrating on the sensation testing. Various procedures should be alternated and timed at different rates. This not only helps break the monotony of the examination; it also keeps the patient from responding to an expected stimulus without the sensation being perceived. Although many types of responses are suggested for sensation perceived, a simple "yes" is satisfactory. It also adds another depth which may sometimes be very revealing when the neurotic, unsophisticated, or malingering patient answers "no" to a stimulus.

It is necessary to evaluate the body bilaterally when testing for peripheral nerve involvement. Usually there is partial rather than total loss of sensation. This can be best observed by comparing the two sides. When areas of sensation

loss are located, the borders must be defined. In typical peripheral nerve entrapment the borders will be abrupt, and will correspond in general to its dermatome. In peripheral neuropathy as a result of ischemia, the border is ill-defined; the hypesthetic area will probably cross many dermatomes. The same is often true when a large number of nerves may be involved, such as the neurovascular bundle in a shoulder outlet syndrome. When there is hypesthesia as a result of malnutrition, the distal aspects of the extremities are most involved. This causes a general loss of sensation that is greatest distally and decreases proximally. This is the so-called "glove and stocking" type of sensory loss. It must be differentiated from sensory loss due to ischemia.

CIRCULATORY EVALUATION

Disturbance of blood circulation may be a result of peripheral neuropathy, or a cause of it. Consequently, differential diagnosis of circulation must be done when considering peripheral nerve entrapment. A disturbance in circulation may be secondary to peripheral nerve entrapment as a result of involvement of the sympathetic fibers. This is neurogenic ischemia. On the other hand, nerve tissue is very susceptible to ischemia; consequently, the nerve dysfunction may be secondary to vascular occlusion. Nerves which suffer from prolonged ischemia have a prolonged recovery period. [Wilgis '71_] Obviously, if the ischemia is due

to an occlusion of the blood vessel, circulation must be returned to normal before the nerve will function normally. The ischemia may be a result of thrombosis, embolism, neoplasms, orthopedic faults, or other factors which occlude the vessel. Also, consideration should be given to vascular diseases, such as arterio- and atherosclerosis, and systemic health problems such as diabetes.

There are many orthopedic tests designed for evaluation of the vascular system at the various areas where blood flow restriction may occur. These include maneuvers such as Adson's and Wright's tests for shoulder outlet syndrome. These will be discussed when the anatomical area is considered.

There are several types of instrumentation available to give specific data regarding the circulatory system. These in themselves are incapable of making a diagnosis, but they are significant diagnostic aids. Usually, the best approaches are non-invasive because they lack the potential side effects present in angiography. With the non-invasive equipment, a diagnosis of patency or occlusion can usually be made; if the vessels are found to be patent, the potential hazards of angiography can be eliminated.

Plethysmography

In general, plethysmography relates to measuring blood flow volume, usually at the distal extremities. There are many types of plethysmographs available. Some transducers - such as strain gauge, hydraulic, and pneumatic - measure

the mechanical pulsation within the digit; others are primarily electrical, measuring the impedance and inductance. In a class by itself is the photoelectric cell. The latter shines a light into the capillary bed which is reflected back in various intensities, depending on the bed's engorgement. The reflected light is picked up by a photoelectric cell, with the electrical impulse amplified and displayed on a cathode ray oscilloscope or a strip recorder.

The plethysmograph can be used to simply record the pulse volume in the various digits on a comparative basis. The pulse wave can also be recorded as the patient goes through various orthopedic maneuvers, such as Adson's and Wright's tests. This gives an improved evaluation of blood flow change over simply monitoring the pulse at the radial artery by the examiner's digital sensation.

Another test done with plethysmography is called reactive hyperemia. The test helps determine the patency of the blood vessels and whether the nerve system reacts to the body's physiologic needs. First, a recording is made of the peripheral circulation in the resting state; then the vessel is occluded proximal to the area being evaluated. This is accomplished with a blood pressure cuff pumped up above the systolic blood pressure. Observation of occlusion can be made when the pulse wave is no longer present on the recording. The restriction to blood flow is maintained for five minutes, and then released while a recording is made of the pulse wave. In a normal reactive hyperemic test, the pulse wave will increase over

the resting state. This, of course, is a normal body reaction to increase blood flow into the area to eliminate the ischemia resulting from the restriction. This activity is moderated by the nervous system. A positive test is one in which there is no increased blood flow after the restriction; in some cases the blood flow may even be reduced from that of the resting state. A positive test primarily indicates a disturbance of the nervous system regulation of blood flow. An occlusion of the blood vessel which will not allow adequate increased flow is a possibility. This test is valuable as a before and after treatment evaluation when a diagnosis of peripheral nerve entrapment has been made as the primary cause of ischemia. After the therapeutic effort to return the nerve to normal, there should be improvement in the reactive hyperemic test. The improvement of the reactive hyperemic test is often seen immediately after applied kinesiology treatment to release a peripheral nerve entrapment. In chronic conditions, there may be a delay of 1 or 2 weeks before the improvement is seen, even though correct therapy has been applied. This is possibly because the fibers responsible for improving the circulation need to have time for their own recovery before they can control circulation normally.

The control of the vascular bed can also be evaluated by a plethysmograph recording made at room temperature, after which the patient's extremity is placed in ice water for 3 minutes. The blood flow volume should return to near normal within 5 minutes. If not, there is evidence of vasospasm.

The Foster test is similar but rather than blood flow volume as an indicator the extremity temperature is taken before and after the ice stress [Wilgis, '80__].

Doppler

Doppler is the name of an ultrasonic flow detector. The transducer emits ultrasound waves through piezoelectric crystals; these are transmitted through the skin directly to the blood vessel. They are reflected back to the probe, which has a receiving unit. Ultrasound waves that strike moving tissue are reflected back differently from those which strike stationary tissue. The greater intensity of movement, the greater the change. The waves which are reflected back are amplified and demonstrated by audible sound, or by demonstration of the pulse wave form on a cathode ray oscilloscope, or on a strip recorder. Arterial blood flow has a high-pitched sound to the vessels pulsation, while venous blood flow has a slow, waving sound much like that of the wind. Doppler evaluation can be used to locate areas of occlusion in the artery or vein. There are various methods used to locate occlusion. The method is not limited to extremities; it is also valuable in determining disturbances in cranial circulation.

X-RAY

X-ray is used for evaluation of the circulatory system

and for peripheral nerve entrapment syndromes. Only a brief description of its use is within the scope of this text.

Angiography is the injection of a contrast medium into the circulatory system to study its anatomy, areas of occlusion within the vessels, and impinging structures such as neoplasms, tortuous routes, etc. The procedure is not without its hazards. There may be a reaction to the iodides used in the contrast medium and complications at the site of arterial puncture.It is primarily an anatomical study providing no information about the dynamic state of circulation. It is not recommended for routine or repetitive use. [Wilgis '80_]

X-ray is more routinely used to evaluate for bony spurs, congenital anomalies, trauma, etc., which can impinge upon a nerve or occlude a vessel. X-ray is also valuable in locating neoplasms and other pathologies which may be involved with the condition.

MANUAL MUSCLE TESTING FOR PERIPHERAL NERVE ENTRAPMENT

To an experienced applied kinesiology practitioner, manual muscle testing can be of great value in differential diagnosis of peripheral nerve entrapment. The first and obvious factor is failure of the muscle to perform normally when its efferent supply is disturbed. Familiarity with the course of the muscle's nerve supply and possible locations of entrapment give the physician an ability to evaluate various muscles that are supplied from the nerve above and below the possible

area of lesion. For example, the flexor pollicis longus muscle receives median nerve supply proximal to the carpal tunnel. The opponens pollicis muscle receives median nerve supply distal to the carpal tunnel. Manual muscle testing reveals the flexor pollicis longus to be strong but the opponens pollicis muscle to be weak, giving strong indication that there is a nerve entrapment distal to the innervation of the flexor pollicis longus and proximal to that of the opponens pollicis. Other applied kinesiology procedures, such as challenge and therapy localization, add to this information. If a challenge to the carpal tunnel or the radius and ulna improves the strength of the opponens pollicis muscle, there is added indication of a carpal tunnel syndrome. If therapy localization to structures at the carpal tunnel also improves the opponens pollicis muscle strength, there is even further indication the involvement is a result of entrapment in the carpal tunnel. This information is almost pathognomonic of the condition; added to clinical findings of paresthesia, history, etc., it provides a firm diagnosis. When a nerve entrapment is more proximal, such as in a thoracic outlet syndrome, many muscles in the extremity may be weak because the entire neurovascular bundle may be involved. Still, challenge and therapy localization can help locate the area of involvement. When the correct approach is found for this more central entrapment, many muscles in the extremity will strengthen.

Most often muscular involvement will be observed on manual

muscle testing when there is a peripheral nerve entrapment. The patient's symptomatic pattern does not seem to indicate whether or not muscle involvement will be observed. This is because the patient's complaint may be sensory in nature with pain primary. Muscular weakness has not been observed because synergistic muscles are recruited for activity. If the nerve involved is mixed and sensory fibers are involved, there will almost always be an involvement of the motor fibers also. This is probably because the nerves supplying muscles are more susceptible to compression than cutaneous nerves. [Aguayo, '75__]

The evaluation of "weak" and "strong" muscles is done by manual muscle testing as opposed to quantitating strength by dynamometers. This is pointed out because manual muscle testing differs from other forms of muscle testing. First, manual muscle testing overpowers the maximum isometric contraction and takes the muscle into an eccentric contraction. This appears to evaluate the ability of the nerve's motor system to recruit a muscle's motor units to contract at the appropriate time. Testing a muscle's ability to produce pure strength, as against a strain gauge, often does not reveal the same findings that manual muscle testing does.

Another factor about manual muscle testing is that it usually has a better ability to isolate the muscle to the maximum amount and to observe recruitment of synergistic muscles. A general evaluation of hand strength with a dynamometer, such as the Jaymar brand, has even less ability

to reveal the same information that manual muscle testing does if the entrapment is of a single nerve. If the involvement is at the thoracic outlet, the chances of the hand-held dynamometer revealing improved strength from correction improve over an involvement at the hand or wrist, such as a carpal tunnel syndrome, pisiform hamate syndrome, or a metacarpal tunnel syndrome. This, of course, is because in a thoracic outlet syndrome the entire neurovascular bundle may be compressed, involving many muscles which may weaken the general hand grip. With more distal syndromes only one nerve will be involved in entrapment, weakening only some of the muscles affecting the general hand grip. Even in the severe thoracic outlet syndrome, only a portion of the fibers may be involved, allowing some muscles to function very well. These may be the muscles primarily tested by the hand dynamometer. Challenge, therapy localization, orthopedic tests, and correction may show no change in muscle strength in the extremity when tested by a hand-held dynamometer; yet significant changes in individual muscles may be shown when manually muscle tested.

Manual muscle testing can be effectively used to help determine the area of peripheral nerve entrapment. In this sense, the term "peripheral entrapment" includes the spinal column only in reference to direct foramenal encroachment on the radix of the nerve. This, then, would include evaluating spinal level involvement only in those cases where there is spurring of degenerative joint disease, or possibly

a disc causing entrapment of the spinal nerve at the radix only. In other words, vertebral subluxations evaluated in the manner discussed here are excluded. Some may argue that it is impossible to have degenerative joint disease, disc involvement, and other local problems without a subluxation, as defined in chiropractic, being present. This argument is well taken and is probably correct. Long-term and well-established clinical evidence indicates that finding a weak muscle and relating to a specific spinal level is not adequate to evaluate subluxation levels. As an example, lower extremity muscle weaknesses found on manual muscle testing are often strengthened with upper cervical subluxation correction. This lack of specificity probably relates to the subluxation's ability to involve the entire spinal cord and also to cause "confusion" within the neuronal pools of the system.

Manual muscle testing to evaluate peripheral nerve entrapment relates more specifically to the nerve involved. In most instances, challenge, therapy localization, and clinical findings described herein will locate the area of entrapment. There are occasions where an apparent motor nerve entrapment and muscle weakness association cannot be demonstrated; yet it seems obvious that there is a specific location of peripheral nerve entrapment. Further and more astute evaluation by the advanced practitioner reveals that there is a neurologic correlation, but not relative to the motor nerve and supplied muscle. It appears that sometimes

the afferent supply to a muscle is irritated by the entrapment, sending to the muscle's antagonist a signal of contraction by the agonist, when in reality it is not contracting. In this case the antagonist would be inhibited and test weak on manual muscle testing, and improve with challenge, therapy localization, and correction at the entrapment area. This neurologic model appears to explain many clinical observations from the evaluation and correction of peripheral nerve entrapment. A common example is neck flexor weakness associated with a tarsal tunnel syndrome. Proprioceptive information from the articulations and intrinsic muscles of the foot, mediated through the central nervous system, provides control for facilitation and inhibition of the neck flexor muscles when walking. The model discussed indicates that the afferent supply from the ligaments, tendons, muscles, fascia, and skin of the foot can be disturbed by entrapment in the tarsal tunnel, creating information to be sent to the central nervous system which is not in keeping with the current actions of the foot. For this reason the neck flexors - or any other associated muscle, for that matter - may be constantly inhibited; they immediately regain normal function when the tarsal tunnel entrapment is corrected.

Although peripheral nerve entrapment can cause widespread influence on the muscular system, the usual - and easiest - use of manual muscle testing to evaluate peripheral nerve entrapment is to test the muscles distal to the area of suspected entrapment. This will usually give the diagnosis.

When the structure is corrected and the entrapment released, the patient and physician will often derive many additional benefits when remote muscles improve in their function. On the unusual occasion when the suspected peripheral entrapment cannot be evaluated in this manner, the physician must look to synergist, fixator, and antagonist muscles which receive control by the afferent supply of the suspected nerve.

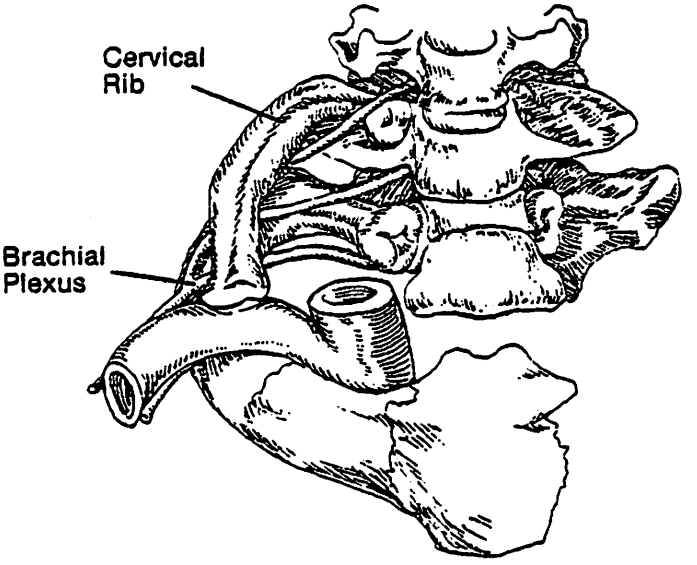
THORACIC OUTLET SYNDROME

"Thoracic outlet syndrome" is a term used to describe any of many areas of entrapment of nerves and blood vessels. The neurologic aspect begins at the intervertebral foramen and includes the brachial plexus until the individual nerves - axillary, median, ulnar, and radial - emit from the axilla. Through the thoracic outlet this neurovascular bundle, consisting of the brachial plexus and subclavian artery, traverses from the cervical spine through the interscalene triangle after which it is joined by the subclavian vein. It then courses between the 1st rib and clavicle and then underneath the pectoralis minor muscle. Structures in these areas can cause compression on the neurovascular bundle, creating neurologic or blood vascular symptoms. This area is relatively easy to evaluate with standard orthopedic and applied kinesiology procedures. It should be routinely evaluated whenever there is pain or dysfunction of the cervical spine, shoulder, arm, or hand.

After the conditions and their orthopedic evaluation have been described, the general applied kinesiology approach for shoulder outlet syndromes will be discussed.

Cervical Rib

A cervical rib is diagnosed by x-ray and is often blamed for a symptomatic picture for which it is not responsible. Cervical ribs are present in from .05% to 1% of the population, and seldom give rise to symptoms. [Cailliet '66; Mayfield '70] In one surgical group's experience, only about 20% of the operative cases with thoracic outlet syndrome have this type of osseous abnormality. [Leffert, '80__]



Often a neurologic or blood vascular disturbance in the arm or hand is attributed to a cervical rib observed on x-ray. This diagnosis should automatically be suspect in an adult who has been symptom-free throughout life, then suddenly develops symptoms which could be attributed to the cervical rib impinging on the vessels or the 8th cervical and 1st thoracic nerves.

If there is involvement of the cervical rib, it will

probably be of ulnar nerve distribution. It must be recognized that many other conditions create disturbances of this nature and must be differentially diagnosed. Most conditions attributed to a cervical rib respond very well to applied kinesiology techniques. Most applied kinesiology practitioners have seen cases where a cervical rib has been re-sected, or a section of the scalene muscle has been done, without symptomatic improvement. Thorough AK evaluation of structure and correction of the conditions found often alleviates the neurovascular compression and symptomatic picture.

The symptoms are usually insidious, with little intensity in the early involvement. The condition generally has a history of remissions and exacerbations. The complaint is usually about pain in the shoulder and neck, with radiation of ulnar distribution down the arm. The involvement may be neurologic or of the subclavian artery or vein.

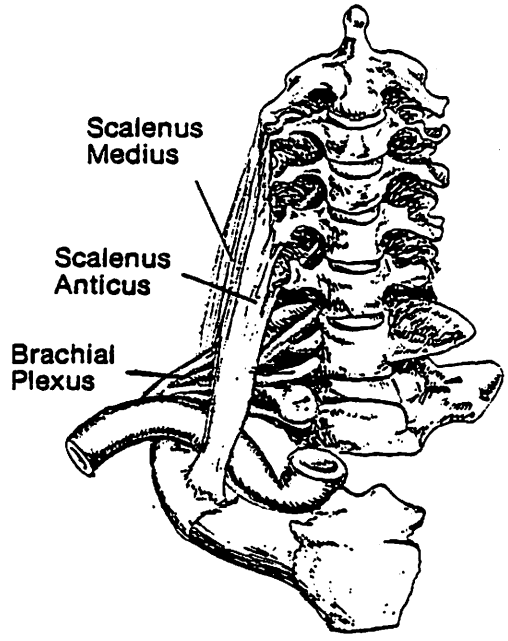
Examination includes hyperabduction of the arms, which may increase the paresthesia and occlude the subclavian artery or vein. If the artery is occluded, there will be a diminished radial pulse; if the vein is occluded, there may be edema and venous distension. The evaluation is improved by having the patient open and close the hand rapidly, producing muscular activity. This may bring on cramping and fatigue when the straight hyperabduction test was negative. The extremity may develop pallor or cyanosis, depending on whether the entrapment is of the vein or artery. Evaluation of the subclavian artery should be done by auscultation of the supraclavicular and infraclavicular areas or the axilla for

bruit. This is best done during hyperabduction of the arm.

When there is venous congestion there may be swelling of the extremity with general activity of the day. Comparing the circumference of the limbs bilaterally is helpful to determine this. If the congestion is chronic there may be increased superficial veins as the result of the development of collateral circulation. [Tsairis '75 __]

Scalenus Anticus Syndrome

The scalenus anticus syndrome is considered a neurovascular compression of the interscalene triangle, which is made up of the scalenus anticus and medius muscles and the 1st rib. It is sometimes associated with a cervical rib as a complicating factor of congenital anomaly. [Lord and Rosati '71_]



Symptoms are described as paresthesia and sometimes weakness of the extremity. There may be a diminished pulse. Venous congestion is not a part of this syndrome, as the vein courses anterior to the scalenus anticus muscle. Often the symptoms are worse in the early morning, frequently awaking the patient.

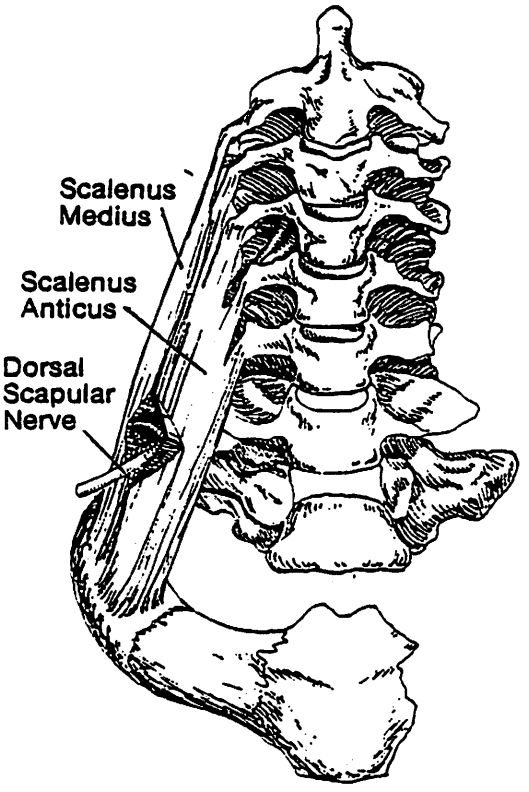
Adson's maneuver ['51_] is designed to decrease the interscalene triangle to observe for increased paresthesia

or decreased arterial pulsation. The examiner first detects the radial pulse. Throughout the maneuver, the pulse is monitored for a decrease or obliteration. The patient takes a deep breath and holds it, extends the neck and then rotates the head to the side of the test. With the head and neck maintained in this position, a deep breath is held. The rationale of the test is that head rotation and extension stretches the scalenus anticus muscle posterior and the deep inspiration causes contraction of the muscle since it is an accessory muscle of respiration. In a positive test, there will be reduction of the pulse wave as a sign of vascular entrapment, and an increase of paresthesia as a sign of nerve entrapment. In some instances, the neurovascular compression can be greater when the patient turns the head to the side opposite involvement, extending the neck and taking a deep breath. Both directions should be evaluated. An objective method of evaluating the pulse during the maneuver is to record it with plethysmography; it is an improvement over radial artery palpation.

Interscalene Triangle - Dorsal Scapular Nerve

A different nerve entrapment is described by Kopell and Thompson ['63__] at the interscalene triangle in which the dorsal scapular nerve is involved. The dorsal scapular nerve arises from the 5th cervical nerve and enters the interscalene triangle; it almost immediately pierces the scalenus medius

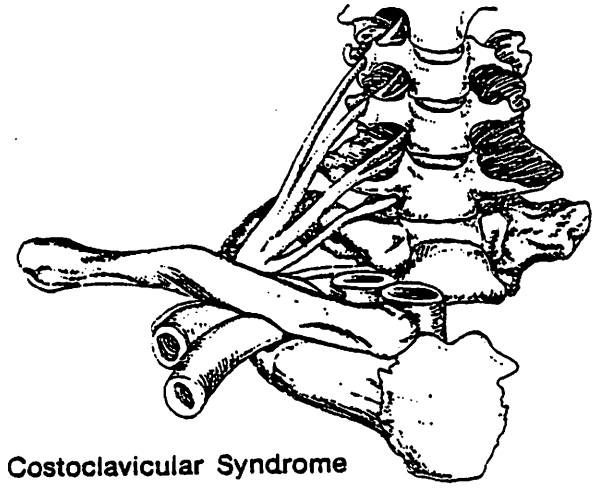
muscle, running dorsal and caudal to supply the levator scapula and rhomboid major and minor muscles. Entrapment of this nerve by the scalenus medius usually involves pain along the medial border of the scapula radiating into the lateral surface of the arm and forearm. The pain is a dull ache or generalized pain, characteristic of a motor nerve. If the condition is chronic, there may be atrophy of the rhomboid muscles and possibly of the levator scapula. The levator scapula receives additional nerve supply from the 3rd and 4th cervical nerves. The musculature will be tender upon deep palpation, and there will be tenderness of the lower aspect of the scalenus medius muscle. Palpatory pressure at this area may cause increased pain in the rhomboid and levator scapula muscles, and in the arm.



Costoclavicular Syndrome

The costoclavicular syndrome is a neurovascular compression between the 1st rib and the clavicle. The symptoms are typical of neurovascular compression. There may be paresthesia in a widely dispersed area, and disturbance of blood supply and venous return. The testing procedure is a

postural maneuver to bring the shoulders posterior and inferior, causing a narrowing of the space between the clavicle and 1st rib. This is first done actively by the patient, and then is passively forced into position by the examiner. [Falcone and Weddel '43_] Circulation can be evaluated by palpation of the radial pulse or by plethysmography. Auscultation may reveal a bruit which appears with the maneuver and disappears when it is released. Paresthesia may be increased, especially if the position is held for some time.

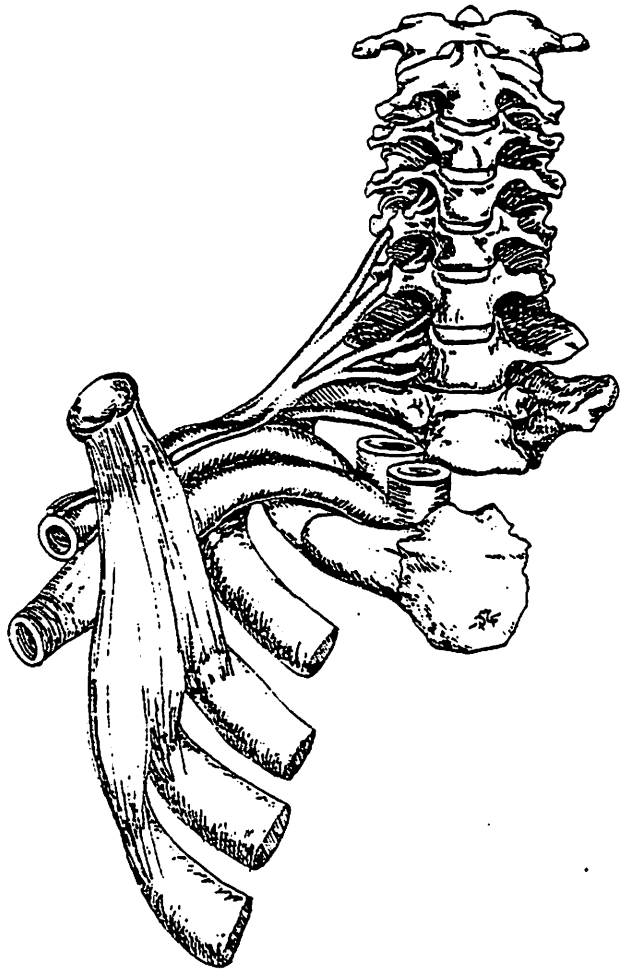


Costoclavicular Syndrome

Pectoralis Minor Syndrome

The pectoralis minor syndrome relates to neurovascular compression between the pectoralis minor muscle and the rib cage. It is sometimes called the coracoid pressure syndrome, [Kendall et al. '52_] which relates to what is considered here as both the pectoralis minor syndrome and hyperabduction syndrome. Symptoms in the upper extremity are typical of this type of generalized neurovascular compression. There may be considerable paresthesia throughout the arm, and diminished arterial supply and venous return. The insertion of the pectoralis minor at the coracoid process is usually very tender, and there is a typical pattern of muscular activity

in which many upper extremity muscles are weak. The pectoralis minor tends to shorten as a result of being unopposed by weak lower trapezius muscles. The upper trapezius is typically hypertonic and very tender to digital pressure. There is often generalized poor lymphatic drainage associated with this condition as observed by the applied kinesiology retrograde lymphatic technique.

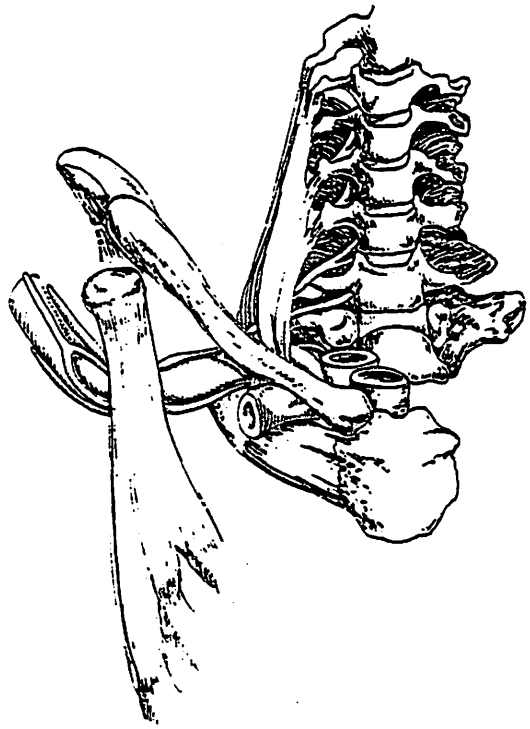


Pectoralis Minor Syndrome

Hyperabduction Syndrome

Very closely associated with the pectoralis minor syndrome discussed above is the hyperabduction syndrome described by Wright. ['45_] As mentioned, the syndrome has also been described by Rendall et al. ['52 _] as the coracoid pressure syndrome. Sometimes it is called the humeral head syndrome. This is a neurovascular compression which develops from holding the arm in hyperabduction for prolonged periods, such as when sleeping with the arm abducted over the head. Often the general complaint bringing the patient in for treatment is, "My arm's going to sleep when I'm in bed at night." There may be problems of paresthesia and circulatory deficiency

because of occupations which require that the arms be held over the head for prolonged periods, i.e. a carpenter, painter, etc.



Hyperabduction Syndrome

The sites of compression described by Wright are between the clavicle and 1st rib, and where the neuro-vascular bundle traverses under the pectoralis minor muscle just prior to its insertion on the coracoid process. The test for the hyperabduction syndrome described by Wright is for the examiner to palpate the radial pulse with the arm hanging at the side of the body in a neutral position. While continuing to palpate the pulse, the arm is brought into hyperabduction and evaluated for a diminished pulse wave or the development of paresthesia. The pulse wave can be evaluated by a plethysmograph recording while the arm is put into hyperabduction. If this is done, care must be taken that the transducer on the finger does not change position. This is easily accomplished by the examiner holding the transducer's electric cord as the arm is elevated so there is no pull on the transducer. The use of the plethysmograph gives the examiner an ability to quantitate the amount of change taking place from treatment.

EVALUATION AND TREATMENT

When a neurovascular compression syndrome is localized to the thoracic outlet, differential diagnosis for neoplasms, aneurysms, and severe motor loss or vascular compression should be done as they indicate need for surgical decompression. Severe motor loss or vascular compression may possibly be functional and respond to applied kinesiology methods but usually they are indicative of a type of compression that is from anomaly, old fractures that have healed incorrectly, extensive fibrous encroachment, etc.

Most authorities concur that a trial period of conservative approach is preferable before surgical intervention. This, of course, is with the exception of conditions such as those noted above. The applied kinesiology examination should be directed toward the total body as well as concentrating on the local area of involvement. Many of the thoracic outlet syndromes are the result of a primary dysfunction in another area which is manifesting itself secondarily at the thoracic outlet.

The examination should include manual muscle tests of the muscles involved, such as the scalenes, upper, middle and lower trapezius, pectoralis minor, and all of the shoulder muscles. The shoulder girdle is evaluated for subluxations by therapy localization and challenge.

The spinal column is evaluated in its entirety. Unfortunately, the examination is often limited to the cervical and upper thoracic spine only, evaluating for hypertrophic spurring, disc involvement, etc. Of course this

area is important, but no more so than evaluation of the total spine including the pelvis. Often a category I or II will be found. These disturbances often cause a torque to the shoulder girdle and the subsequent distortion causes the thoracic outlet syndrome. It is not uncommon to correct only a category I or II and have the patient get off the table with complete relief or diminished symptoms.

The foot is also often a primary cause for the thoracic outlet syndrome. Improper afferent communication from foot dysfunction can cause the scalene and other muscles to be facilitated and inhibited at improper times for the needs of the body. If a foot problem is missed and treatment is directed to the secondary effects at the thoracic outlet there will usually be objective improvement immediately after treatment and the patient will gain relief, but both will be of only short duration. When a patient comes in on a subsequent visit and states, "I felt great for a few hours (or days) after the last treatment, but it's back to where it was originally," there is indication to look at structure throughout the body including the pelvis, feet, etc.

Another factor that involves the thoracic outlet is the organization of the modules of the body with each other. This is primarily examined in applied kinesiology with the PRY technique [Goodheart, '80__] [Walther, '81__]. Other methods of evaluating the body's organization on a modular basis are the gait mechanism [Goodheart, '75__] [Walther, '81__] and cloacal synchronization [Goodheart, '77_] [Walther, '81_].

In general the applied kinesiology evaluation and correction of the thoracic outlet syndrome begins with evaluating localized involvement, such as clavicular first rib subluxations, the muscles of the shoulder and shoulder girdle, and the cervical spine. Then evaluation of total body function is in order; then follow through with "fix what you find." A very high percentage of conditions accurately diagnosed as thoracic outlet syndrome respond favorably to this therapeutic approach. The admonition to consider surgical intervention in a peripheral nerve entrapment that does not respond in a period of three months applies.

MEDIAN NERVE

ELBOW & FOREARM

There are several types of median nerve entrapment in the region of the pronator teres muscle. Some refer to these as various types of the pronator syndrome, while others list them as separate entities. Here they are all listed under the basic term "pronator syndrome." First is a general discussion of the anatomy and symptoms generally applicable to all types of the pronator syndrome. Each is then described individually with its therapeutic approach. After all are described, the procedures for differential diagnosis are presented. The various types are the pronator teres muscle syndrome, lacertus fibrosus syndrome, flexor digitorum superficialis syndrome, ligament of Struthers, and anterior interosseous syndrome.

ANATOMY

Arising from the brachial plexus from two large roots, the median nerve accompanies the brachial artery through the bend of the elbow. It has no branches above the elbow except that occasionally the nerve to the pronator teres arises there. [Gray, American '73__]. At the cubital fossa it lies in front of the brachialis muscle and behind the lacertus fibrosus. The lacertus fibrosus is a tough aponeurotic expansion from the biceps tendon, crossing the antecubital fossa in an ulnar direction. It inserts into the deep fascia over the medial proximal portion of the ulna. A median nerve entrapment can develop at this location from compression of the lacertus fibrosus. [Ropell & Thompson, '76_]

The nerve enters the forearm between the humeral and ulnar heads of the pronator teres. In 16% it may pass deep to the humeral head when there is an absence of the ulnar head, or deep to the ulnar head, or split the humeral head [Jamieson & Anson, '52 __]. From the pronator teres muscle, the nerve courses under the flexor digitorum superficialis arch, which is a tendinous bridge that connects the humero-ulnar head to the radial head of the muscle. The nerve continues to course through the forearm posterior and adherent to the flexor digitorum superficialis muscle.

The median nerve gives off branches in the proximal forearm to the pronator teres, flexor carpi radialis, palmaris longus, and flexor digitorum superficialis.

As the median nerve passes through the pronator teres muscle, it gives off the anterior interosseous nerve just distal to the origin of the nerves for the muscles mentioned above. It supplies the flexor pollicis longus and the lateral aspect of the flexor digitorum profundus. The supply to the latter muscle is primarily to the portion of the muscle sending tendons to the index and middle fingers. A final branch of the anterior interosseous nerve is given off as it passes under the pronator quadratus, which supplies the distal radio-ulnar, radiocarpal, and carpal articulations, and the pronator quadratus muscle.

SYMPTOMS

Entrapment of the median nerve at the elbow will usually involve both sensory and motor fibers. The sensory distribution from the nerve above the carpal tunnel is to the thenar eminence by the palmar branch. Below the carpal tunnel it is to the first through third digits and half of the fourth digit on the palmar side, carrying over to the first phalanx on the dorsal side. There will be weakness in pronation, usually of both the pronator teres and pronator quadratus muscles. In some instances, the pronator teres muscle can be spared because its motor supply may branch prior to the entrapment or, in rare instances, originate above the pronator teres muscle. Distal interphalangeal flexion of the index finger will be reduced because of median nerve supply to the flexor digitorum profundus on the radial side. It is best

to test the index finger even though the second finger is also listed as being innervated by the median nerve. This is because there is overlapping of the ulnar and radial aspects of the flexor digitorum profundus muscle, but the index finger is almost always medially innervated.

Circulatory disturbance from this level of entrapment is primarily neurogenic. Occasionally there may be arterial compression. The brachial artery can be encroached upon by the lacertus fibrosus, and the ulnar artery may be compressed by the pronator teres. The radial artery passes superficial to the pronator teres muscle. Entrapment of the brachial or ulnar artery can be observed with Doppler evaluation.

An examination to compare the patency of the radial and the ulnar arteries is Allen's test. This test determines whether the hand's blood supply is from both the radial and the ulnar arteries. The test is usually done with the patient in a seated position. The patient raises the arm overhead and makes a tight fist, expressing blood from the hand. While in this position the examiner occludes both the radial and ulnar arteries at the wrist, and lowers the patient's extremity. The patient opens the hand but does not forcefully extend the fingers. If the arteries have been successfully occluded the hand will remain blanched, with no evidence of blood returning to the hand. The examiner then releases either the radial or the ulnar artery and observes for return of blood to the hand. Normally on release of the vessel, the hand will quickly show a change of color, indicating a good

supply from that artery. The examination is then repeated to evaluate the other artery. The examiner must take care that the patient does not forcefully extend the fingers when the hand is opened. This forceful extension can put enough tension on the fascial coverings of the hand to retard rapid return of blood flow, causing a false positive test.

Venous congestion does not develop in the forearm and hand as a result of this syndrome because the veins are superficial to the potential area of entrapment. Apparent venous congestion indicates direct evaluation of the veins or evaluation of the thoracic outlet for entrapment problems.

Pronator Teres Syndrome

Entrapment as the nerve progresses between, under, or through the heads of the pronator teres may result from hypertrophy of the muscle, space-occupying neoplasms, or hypertonicity of the muscle. The branch of the median nerve which innervates the muscle arises as the median nerve passes through the muscle or immediately after it has passed through the muscle. Rarely, its supply can branch prior to the muscle. Because of the location of the median nerve branch, the pronator teres is usually involved with the syndrome. The muscle is often weak when tested in the clear. This weakness is interesting

inasmuch as the muscle often palpates as hypertrophied. It most often responds to neuromuscular spindle cell or Golgi tendon organ treatment for a weak muscle. Clinical evidence gives cause to postulate that the muscle has been injured, causing its weakness, and that hypertrophy has developed in an attempt to regain strength, which in turn creates the median nerve entrapment. Functional weakness of the muscle in the presence of hypertrophy appears to have some responsibility in the nerve entrapment, since relief from pain is often observed immediately after returning the muscle to normal strength with muscle proprioceptor treatment.

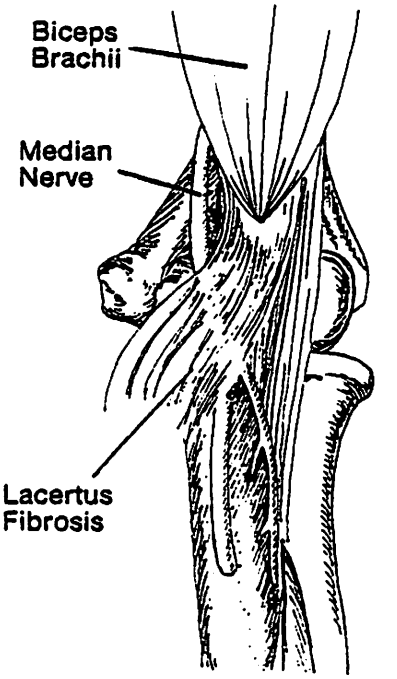
On occasion the pronator teres muscle requires fascial flush or spray and stretch technique. This is determined by testing for muscle stretch response [Goodheart, '79__] [Walther, '81__].

In some cases, correction of the pronator teres muscle does not give immediate relief although proper treatment has been given. This may occur because the hypertrophied muscle continues to irritate the nerve, or because the nerve needs to regain its normal blood supply and repair from an apparent inflammatory process. In any event, the symptoms should improve within a few weeks if there is no other cause of median neuropathy.

Lacertus Fibrosus Syndrome

The lacertus fibrosus is a heavy aponeurosis from the biceps tendon, inserting into the deep fascia over the medial

proximal portion of the ulna. Kopell and Thompson ['63__] consider this a mechanism by which the flexion force of the biceps is somewhat distributed to the ulna. Clinical experience indicates that median nerve entrapment at the lacertus fibrosus is the result of subluxation of the radius and ulna articulation or the ulna with the humerus. Challenge and correction of these subluxations usually balances the flexion forces of the elbow and reduces the irritation on the median nerve. Failure to gain relief of the entrapment indicates need for further evaluation by electrodiagnosis, and possibly decompression surgery.

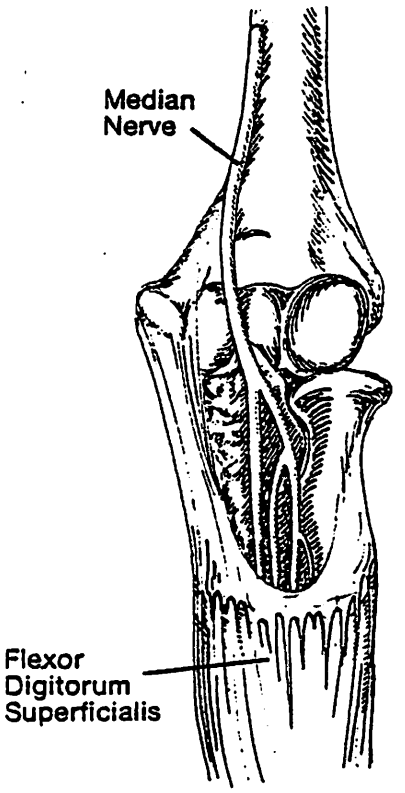


Flexor Digitorum Superficialis Syndrome

Irritation on the median nerve as it courses under the flexor digitorum superficialis arch is from two primary causes. The first is direct trauma to the nerve, and the second is use of the hand in such a manner as to contract both the pronator teres and the flexor digitorum superficialis muscles.

Direct trauma to the nerve can occur from lifting heavy objects, cradling them in the arms in such a manner that the nerve is vulnerable at the upper portion of the anterior forearm prior to the nerve receiving protection from the

flexor digitorum superficialis muscle. If the involvement is strictly a one-time incident, the nerve will usually repair rapidly and return to normal. Often the nerve irritation is from a habit pattern of the individual. A particular type is "honeymoon paralysis," where the partner's head is cradled in the antecubital fossa area during sleep. This area may be irritated as a result of cradling a baby for feeding, with the head resting over the median nerve.



Using the hands in such a manner as to cause forceful pronation and flexion of the fingers usually produces a combination of the pronator teres syndrome and the flexor digitorum superficialis syndrome. The type of action that activates these muscles together is that which requires a grip of the hand with pronation. This is seen in wringing a mop, using a screwdriver, the twisting action with pliers, etc. The same factors that applied to the pronator teres syndrome apply here, as well as the factors described for the flexor digitorum superficialis syndrome.

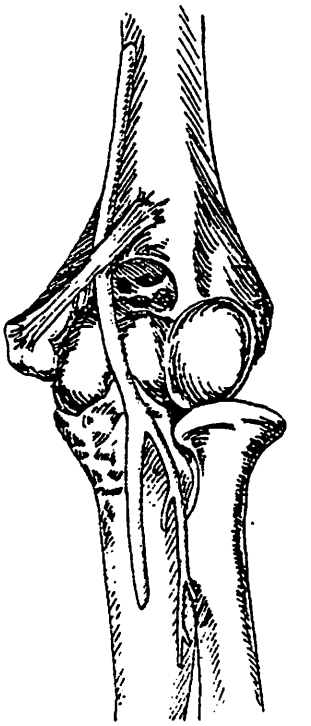
The involvement of the flexor digitorum superficialis muscle may be hypertrophy from inadequate muscle function, as previously described for the pronator teres. There may be myositis of the muscle. Forceful contraction of the fingers

tightens the flexor superficialis arch, causing further irritation of the median nerve.

Manual muscle testing is used to evaluate the flexor digitorum superficialis muscle for need of muscle proprioceptor treatment or for relaxation of the muscle as is done with the spray and stretch or fascial flush techniques of applied kinesiology. The former is evaluated primarily by therapy localization and the latter by testing the muscle for muscle stretch response. [Goodheart, '79__] [Walther, '81__] The flexor digitorum superficialis muscle is stretched by extending the wrist and fingers; then the muscle's function is tested by manual muscle testing.

Ligament of Struthers

An anatomical variance is a ligamentous connection between the medial epicondyle of the humerus and an anomalous spur which is three to five centimeters proximal to the medial condyle of the humerus. This forms a foramen through which the median nerve and brachial artery usually pass. This osseofibrous tunnel is found in 1% of limbs. [Spinner, '80 _] The anomaly usually does not produce symptoms. High elbow median nerve entrapment which does not respond to applied kinesiology techniques may indicate



Ligament of Struthers

an involvement at this area which requires surgical decompression.

Anterior Interosseous Nerve Syndrome

The anterior interosseous nerve is usually involved in a pronator teres syndrome. However, it can have entrapment independent of the median nerve. The anterior interosseous nerve usually branches from the median nerve as it passes through the pronator teres muscle. It arises below branches for the pronator teres, flexor carpi radialis, palmaris longus, and flexor digitorum superficialis. It supplies the radial half of the flexor digitorum profundus, the flexor pollicis longus, and the pronator quadratus muscles.

Entrapment of this nerve is usually at the pronator teres muscle which entraps the entire median nerve distal to that location. If the anterior interosseous nerve is involved by itself, the muscles listed above will test weak; the additional muscles of median innervation will be normal. Paralysis involving this nerve produces a peculiar pinch attitude where the index finger hyperextends at the distal interphalangeal articulation but flexes normally at the proximal one when the index finger is contracted against the thumb. [Spinner, '69__] This is because the flexor digitorum superficialis, radial aspect, is paralyzed while the flexor digitorum profundus is spared. A Martin-Gruber connection between the ulnar and median nerves is frequently via the anterior interosseous branch, which will confuse the typical pattern.

This anomaly is present in approximately 15% of limbs. [Spinner, '80__] Evaluation and treatment on an applied kinesiology basis for the anterior interosseous nerve entrapment is the same as for a pronator teres syndrome. Most often the entrapment is at that location. There can also be an entrapment as a result of congenital variance, trauma to the forearm, thrombosed ulnar collateral vessels, and anomalous radial artery passage. These causes are outside the scope of this text and may require electrodiagnosis techniques, and possibly surgical intervention.

DIFFERENTIAL DIAGNOSIS

The pronator teres group of syndromes must first be differentiated from thoracic outlet syndromes and more distal entrapment of the median nerve, such as in the carpal tunnel syndrome. Differential diagnosis patterns of thoracic outlet syndromes have been previously described. Differential diagnosis of the carpal tunnel syndrome is discussed as the next median nerve involvement.

In the pronator teres group all muscles of the median nerve may be involved, but some may be spared. The pronator teres usually receives its nerve supply from a branch between the two heads of the muscle. It sometimes receives its branch prior to the muscle. In any event, due to its location of branching it may or may not be involved in entrapment of that nerve. In functional disturbances there may be an intermittent nerve irritation which causes muscle dysfunction as observed

by manual muscle testing. This is because the nerve may be irritated in some positions and not in others. There are several examples that illustrate intermittent nerve irritation. Muscles innervated by the median nerve may be strong when tested with the arm in a neutral position but weak when the arm is placed in pronation, stretching the pronator muscle over the nerve. On the other hand, weakness may be observed when the flexor digitorum superficialis is contracted by making a fist, increasing the pressure on the nerve from the flexor superficialis arch. Still another example is median nerve muscles testing strong until the arm is held against flexion by contracting the biceps brachii. The biceps contraction tightens the lacertus fibrosus, thus causing additional entrapment. All of these intermittent involvements are primarily found in early dysfunction caused by peripheral nerve entrapment. Chronicity apparently causes an inflammatory reaction of the nerve which creates constant muscle weakness; pain is usually associated. In these cases, evaluation for pain in various positions is of value.

Three tests for the differential evaluation of the pronator teres, lacertus fibrosus, and flexor digitorum superficialis syndromes are presented by Spinner ['80__].

Evaluating for the pronator teres syndrome is similar to testing the muscle's strength. The patient attempts to pronate the forearm while the examiner resists the activity. This causes contraction of the pronator teres and increased entrapment of the nerve. Pain is increased when the patient

forcefully pronates the forearm with the elbow flexed, and then attempts to extend the elbow while maintaining pronation. This stretches the contracted muscle over the nerve, again intensifying the entrapment.

When the lacertus fibrosus syndrome is present, pain or paresthesia of median nerve distribution is increased when the patient resists the examiner's effort to extend the elbow and pronate the forearm. This action tightens the lacertus fibrosus without tightening the pronator teres.

To evaluate for the flexor digitorum superficialis syndrome, observe for increased pain or paresthesia when the patient flexes the fingers against resistance. This is caused by contraction of the flexor digitorum superficialis and tightening of the flexor digitorum arch, causing additional entrapment on the median nerve.

CARPAL TUNNEL SYNDROME

MEDIAN NERVE

The carpal tunnel syndrome is entrapment of the median nerve as it passes through a tunnel in the wrist which is formed by a strong flexor retinaculum bridging the volar surface of the carpals and the distal ends of the radius and ulna. This is the most common site for nerve entrapment in the upper extremity.

ANATOMY

Carpal Tunnel

The carpal tunnel is generally considered to be formed by the volar surface of the carpal bones bridged by the transverse carpal ligament. This ligament attaches medially to the pisiform and hamulus of the hamate, and laterally with a superficial layer to the tubercles of the scaphoid and trapezium and a deep layer to the medial lip of the trapezius.

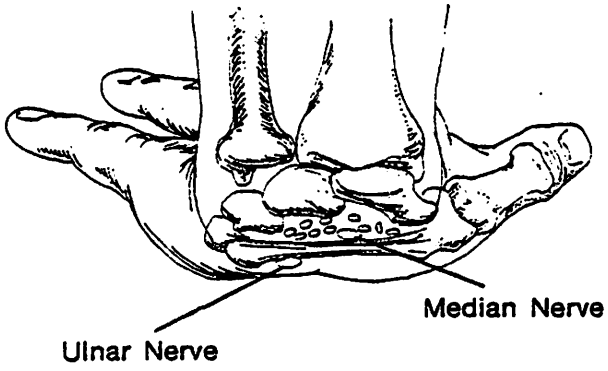
The superficial part of the flexor retinaculum is the palmar carpal ligament. Distally it blends with the transverse carpal ligament; proximally it is attached medial and lateral to the styloid processes of the ulna and radius. The palmar carpal ligament is not considered part of the carpal tunnel by many authorities. Applied kinesiology clinical evidence indicates that it has a significant role in carpal tunnel entrapment. This is supported by the improvement of median nerve function from the correction of subluxations of the

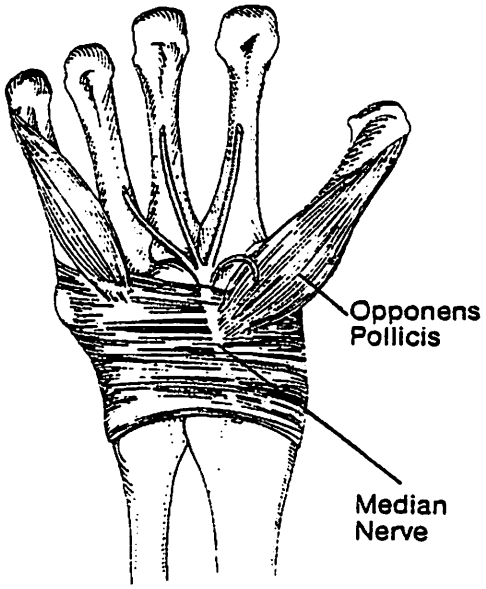
distal radio-ulnar articulation which cause a separation of the two bones.

Passing through the carpal tunnel are the tendons of the flexor digitorum profundus and superficialis, flexor pollicis longus, and flexor carpi radialis, as well as the median nerve. Superficial to the transverse carpal ligament are the ulnar nerve and artery. Within the carpal tunnel there is little latitude for alteration due to structure change, whether from trauma or neoplasms.

Median Nerve at the Wrist

In the forearm there are no additional muscular branches after the anterior interosseous nerve. In the lower part of the forearm there is a palmar cutaneous branch and there may be communication with the ulnar nerve (Martin-Gruber connection). This anomaly, present in 15%, carries motor fibers from the median nerve to the ulnar nerve and can cause difficulty in evaluating the location of peripheral nerve entrapment. A less common anomaly is a connection from the ulnar to the median nerve in the distal forearm. [Kaplan & Spinner '80_]





The muscular branch usually arises just distal to the flexor retinaculum with a slight recurrent curve to innervate the abductor pollicis brevis, opponens pollicis, and the superficial head of the flexor pollicis brevis. The recurrent nature of the muscular branch, as well as the possibility of its piercing the retinaculum, adds to its potential for entrapment.

The palmar digital branches supply the thumb, index middle, and half of the ring fingers. They send branches dorsally to the distal parts of these fingers. All digital nerves supply ligaments, joints, and tendons of the digits, as well as the skin.

Usually the muscular and digital distribution is as has been described. However, the dividing line between median and ulnar distribution is sometimes variable, and either nerve may invade the territory of the other. [Gardner '75_]

SYMPTOMS AND ETIOLOGY

A carpal tunnel syndrome may have a history of trauma, such as stopping a fall with the extended hand. The same trauma to the hand when the wrist is extended occurs when waiters or waitresses hold heavy trays of dishes over their shoulders or repeatedly open swinging doors with the flat of the hand. Other types of trauma are from activities such as mechanics straining the wrist pulling on a wrench, carpenters using heavy hammers, drivers hanging their wrists over the top edge of the steering wheel for prolonged periods, and leaning on

the hand when scrubbing a floor. Determining this type of activity is often very important in obtaining permanent results from carpal tunnel syndrome correction.

It is not unusual to have a patient who is being treated for low back pain develop pain in the arm and hand. This is often thought to be a secondary involvement of the cervical spine as a result of the lower spine dysfunction. More frequently, examination will reveal that a carpal tunnel syndrome has been created from the patient using the extended wrist and hand to arise from a chair. The extension of the wrist separates the radius and the ulna and flattens the carpal arch, stretching the flexor retinaculum to impinge upon the median nerve. This most often happens in elderly patients whose wrists are weak. Prevention of the condition by teaching the patient how to arise from a chair without straining the wrist is the best approach.

There may be a history of Colles' or other types of fracture, dislocation of a carpal bone, or a neoplasm. All of these space-occupying factors must be differentially diagnosed so that proper procedures may be instituted as soon as possible; they may require decompression surgery. In the absence of this type of involvement, the conservative management of applied kinesiology is highly successful in the correction of the carpal tunnel syndrome.

One of the most common symptoms of a carpal tunnel syndrome is nocturnal pain which may interfere with sleep. A common description by the patient is that the hand must

be held over the edge of the bed or requires recurrent rubbing during the night in order to return to sleep. There is often a complaint of weakness of the hand, which is described in various characteristic ways. In other cases the individual may observe no weakness and the complaint is primarily sensory. The muscles involved are those of the thenar eminence, giving activation to the thumb. There will often be difficulty in turning a doorknob, lifting a cup, using a pencil, removing a lid from a jar, turning a key, etc. Activity often aggravates the symptoms, so that only minimal activity can be accomplished with the hand. If the condition is chronic, atrophy may be observed at the opponens pollicis and flexor pollicis brevis muscles. In earlier stages of atrophy, the loss of muscle mass may be observed only by palpation. In many cases there is no observable atrophy of the muscles, yet significant weakness is present on manual muscle testing.

Frequently there is pain involved, usually of radial distribution in the hand, covering the palmar surface of the thumb, index, middle, and half of the ring fingers. Median nerve innervation wraps around to the distal aspects of the dorsal surfaces of the fingers. Although this is the classic distribution of the median nerve, remember there is often an interconnection between it and the radial and ulnar nerves, making it possible for each to encroach on the other's territory. Pain is generally of hyperesthesia in the early course of the condition, and changes to hypesthesia with progression of the condition. The patient may complain of

a "pins and needles" or a hot or cold sensation. The thermal changes may be objective, especially if evaluated with a thermister that registers surface temperature rapidly and is of such a nature that it does not draw heat away from the skin when moved about the dermatomes. In some cases the thermal factor is observed only by the patient and cannot be objectively demonstrated. Sensory disturbance may be localized to only the hand, or may be concentrated in the wrist or radiate up the arm clear to the cervical spine. This proximal radiation creates additional problems in differential diagnosis of the condition. Unfortunately it is not too uncommon for the cervical spine or thoracic outlet to be the prime object of treatment when the basic underlying cause is at the carpal tunnel.

Circulatory disturbance is often a result of sympathetic overflow. [Linscheid '67_] This is sometimes mistaken for Raynaud's phenomenon; the individual may go without proper treatment for many years before the condition's proper diagnosis is discovered and relief is obtained. Evidence of the circulation problem will be in the digits of median nerve distribution or on occasion may be non-specific throughout the entire hand.

Often when there is autonomic disturbance there will be a palpatory change in the texture of the skin involved. This may be observed specifically as alteration in sweating, with dryness in one area and excess sudomotor activity in another. The autonomic disturbance may be further evidenced

by mottling of the skin, and there may be painful swelling.

DIFFERENTIAL DIAGNOSIS

The carpal tunnel syndrome must be differentially diagnosed from all other peripheral nerve entrapments, from the radix of the nerve at the intervertebral foramen down to the intermetacarpal tunnel. The symptom pattern may be strongly suggestive of the syndrome, but it is certainly not adequate for diagnosis. Manual testing of the muscles usually innervated by the median nerve below the carpal tunnel compared to those innervated by the median nerve above the tunnel and by other nerves gives differential evidence; however, it must be remembered there are congenital variances which can change these patterns to that of confusion. The patient may be an individual who has an all-median-nerve hand; occasionally there is an all-ulnar-nerve hand. In these cases differential testing of the intrinsic muscles of the hand will show all are weak, which may erroneously indicate a neuropathy at a higher level. The combination of manual muscle testing with the applied kinesiology procedures of challenge and therapy localization helps to locate the area of entrapment.

In a hand which has the usual medial and ulnar innervation of the muscles and is associated with a carpal tunnel syndrome, one would expect to find weakness of the opponens pollicis and abductor pollicis brevis on manual muscle testing. The long muscles which are innervated by the median nerve proximal to the carpal tunnel, such as the flexor pollicis longus,

flexor digitorum superficialis, and radial side of the flexor digitorum profundus, should test strong. The muscles innervated by the ulnar nerve, such as the opponens digiti minimi, flexor digiti minimi, and the adductor pollicis, will test strong. If all the muscles innervated by the median nerve are weak, including the long ones, and the ulnar muscles are strong, suspect a pronator syndrome.

When the pattern of muscle weakness indicates a carpal tunnel syndrome, confirmation can usually be obtained by challenge and therapy localization of the carpal tunnel. Challenge is accomplished by having the patient or a support person give manual support to the carpal tunnel and the distal ends of the radius and ulna. The force is applied in a manner to approximate the radius and ulna and form an increased carpal arch. In the presence of subluxations which cause a stretching of the flexor retinaculum and create the nerve entrapment, an improvement in muscle strength will be observed by manual muscle testing. Therapy localization to some aspect of the carpals, ligaments, or the distal area of the radius and ulna will also cause the weak muscle associated with the carpal tunnel syndrome to regain its strength.

The pronator quadratus muscle often appears to be involved with the carpal tunnel syndrome. The working hypothesis is that the pronator quadratus becomes weak from improper nerve supply, injury, or overactivity, interfering with its action. If the weakness is from local injury to the muscle, the dysfunction is usually a result of dysfunctioning proprioceptive mechanisms within the muscle. Weakness of

this muscle allows the radius and ulna to separate, causing tension on the superficial aspects of the flexor retinaculum. In this case therapy localization to specific aspects of the pronator quadratus will cause the intrinsic muscles of the hand, weak as a result of the carpal tunnel syndrome, to strengthen.

The muscle tests described with challenge and therapy localization are effective means to differentiate a functional carpal tunnel syndrome. These are the types of carpal tunnel syndromes that respond rapidly to the applied kinesiology approach. If there is a space-occupying problem, such as a tumor, tenosynovitis, rheumatoid arthritis, edema, etc., additional methods of diagnosis are necessary.

Diagnosis requires observation for all the symptomatic patterns and circulatory disturbances previously mentioned. Observe for opponens pollicis atrophy in a chronic condition. Circulatory congestion in the hand can often lead one to suspect a thoracic outlet syndrome. This can be differentiated by evaluating for circulatory changes with the orthopedic maneuvers previously described. Doppler and plethysmographic evaluation can also help determine the source of circulatory disturbance. There will usually, but not always, be tenderness of the nerve as it traverses through the carpal tunnel. This is elicited by deep digital palpation in the area. A classic test for carpal tunnel syndrome is the wrist flexion test, where the wrist is held in full palmar flexion for thirty to sixty seconds. The symptoms should be increased within

this period of time, as a normal wrist will often develop symptoms when the position is held for a prolonged time.

Palpation of the carpal tunnel area may reveal a mass indicative of a neoplasm, or possibly evidence of chronic tenosynovitis of the flexor tendons. If there is tenosynovitis there will often be crepitation on flexion of the fingers.

Sensory examination classically can help differentiate a carpal tunnel syndrome, but it is often very confusing because of the overlap of innervation. When it appears there is a median nerve involvement but it is difficult to differentiate between a pronator syndrome and a carpal tunnel syndrome, sensory evaluation may help. The skin of the base of the hand and the distal forearm is supplied by a small sensory branch of the median nerve which arises prior to the carpal tunnel. Sensation at this area is involved in a pronator syndrome but not a carpal tunnel syndrome.

The most common erroneous treatment for carpal tunnel syndrome is directed to the cervical spine. This is because x-ray often reveals evidence of spurring and subluxations, indicating the spine as the cause of the neuropathy. The symptomatic pattern may help to give differentiation. In spinal-induced involvement the symptoms are generally reduced with rest and increased with activity. This is usually reversed in the carpal tunnel syndrome. In the carpal tunnel syndrome the symptoms are generally palmar; in spinal involvement it is usually over the dorsal and palmar aspects of the thumb (C6) or the first two fingers (C7). The same type of muscle

testing described to test muscles proximal and distal to the carpal tunnel can be used throughout the arm to evaluate for cervical involvement. In most cases when the cervical spine is at fault, there will be many muscles throughout the arm which will test weak on manual muscle testing. The deep tendon reflexes of the brachioradialis and triceps may be impaired. [Aguayo '75_]

TREATMENT

Most cases of carpal tunnel syndrome will be found to be a result of subluxations of the carpals and the distal radio-ulnar articulation. This is usually confirmed by challenge and therapy localization which give justification for treatment. Further evidence of the relationship is observed by satisfactory results of the therapeutic trial. If there is lack of supportive evidence of the condition's functional nature, efforts should be directed toward differentiating the condition from neoplasms, tenosynovitis, hypothyroidism, secondary edema as a result of ileocecal valve syndrome, etc. If the condition is found to be systemic in nature, treatment is primarily directed toward the cause. Neoplasms or trauma from fractures and dislocation may require surgical intervention.

With a functional condition, challenge gives information for manipulative correction. The structure, whether a carpal bone or the radio-ulnar articulation, is manipulated in the direction which caused a weak associated muscle to strengthen.

The most common subluxation is the separation of the radius and ulna, and requires an approximation. This subluxation will most commonly involve a weak pronator quadratus, which appears to allow the subluxation to develop and be maintained. A comparative test for the pronator quadratus and pronator teres is described in Applied Kinesiology, Volume I-Basic Procedures and Muscle Testing. Usually the evaluation of the pronator quadratus muscle can be obtained indirectly by therapy localizing through its belly and at the origin and insertion for dysfunction of the muscle proprioceptors. The proprioceptive involvement most often found is of the Golgi tendon organ at either the origin or the insertion. Therapeutic digital pressure over the Golgi tendon organ toward the belly of the muscle is indicated. This should be repeated four or five times; it is usually quite painful to the patient. Improvement in the muscle will be observed on manual muscle testing. Correction of the pronator quadratus prior to the adjustment of the proximal radius and ulna facilitates the adjustment. To make the adjustment, the physician usually approximates the radius and ulna over their styloid processes by gripping around the wrist; with his other hand he tractions the patient's hand away from the radius and ulna while maintaining the approximating force on them. After obtaining traction the examiner uses his second hand to reinforce the contact at the radius and ulna, and makes a quick, approximating force around the radius and ulna. There will often be an audible release, but it is not necessary. Evidence

of a successful adjustment is observation of opponens pollicis and abductor pollicis brevis strength on manual muscle testing.

Another method of radius and ulna manipulation is use of a toggle-recoil type adjustment with a dropping mechanism in a chiropractic table. The patient's wrist is placed on the table with the medial edge of the arm in contact. The physician contacts the radius with a pisiform contact and adjusts the radius and ulna for approximation.

If the carpal bones are involved, the offending structure is adjusted in the direction that made the associated muscles strong on challenge. This can be accomplished with various types of thumb or pisiform contacts that are effective for the physician. Another method of adjusting the individual carpal bones is to use the "activator" instrument. The contact tip is held on the carpal bone and the instrument is aligned in the vector of challenge which created the greatest strength. The instrument is then used to put percussion into the carpal bone.

After correction has been obtained as indicated by return of strength to the involved muscles, evaluate the wrist to see if the structural derangement returns easily. This can best be done by putting the wrist through its range of motion, especially hyperextension. The best test for hyperextension is to have the patient use the arm to lift the body, with the wrist in a hyperextended position. This will almost always recreate a carpal tunnel syndrome, as evidenced by weak muscles, if it is going to return easily. If the syndrome

returns, it is necessary to use a wrist support for approximately two weeks so that the structure can heal. In the early days of applied kinesiology's work with the carpal tunnel syndrome, it was almost always necessary to support the wrist. Since Goodheart's observation of evaluation and treatment of the muscle proprioceptors [Goodheart '73_] and their application to the pronator quadratus muscle in the carpal tunnel syndrome, it is often found that no additional support is needed in the treatment of the syndrome.

In case the involvement does return on the stress tests of range of motion and hyperflexion, then support is necessary. The structure should be corrected again and placed in a support that holds the wrist in neutral position. Several types of supports are available. Usually they are a wrap-type support closed by Velcro strips. The support should be solid, having an aluminum, metal, or plastic insert to prevent wrist motion. Another support that can sometimes be effective is a wrap around the distal end of the radius and ulna. These are made of elastic, cloth fiber, and leather. The elastic type is not usually satisfactory. The leather type is generally good if it is adjusted with adequate tension. A strap manufactured for epicondylitis (tennis elbow) is quite effective in supporting the distal radio-ulnar articulation. It is a heavy canvas strap with a ring at one end. The support is placed around the wrist; the loose end is inserted into the ring and doubled back to attach to a Velcro closure after tension

has been placed on the wrist. Care must be taken that support does not impede circulation or perhaps even cause a peripheral nerve entrapment itself. This can usually be accomplished by putting a piece of orthopedic felt cut to partially encircle the wrist under the support, leaving a tunnel on the anterior aspect for the nerves and blood vessels.

If repeated correction is necessary, nutritional support may be indicated. This is especially true if the pronator quadratus muscle weakens again and requires further therapy for its proprioceptors. Typically, raw bone concentrate is indicated; it is applicable for both ligamentous support and support to the muscle proprioceptors. Usually three tablets per day, chewed, is adequate support. [Walther '81_]

An allopathic approach routinely used for conservative care of peripheral nerve entrapments is injection of hydrocortisone. This is rarely necessary when the applied kinesiology treatment approach is used.

To maintain correction of the carpal tunnel syndrome, any adverse habits the patient may have contributing to the condition should be corrected. A change in work habits may be required. A carpenter can swing even a heavy framing hammer without trauma to the wrist if it is done correctly. The wrist should be maintained in a solid manner so there is no whipping action when the hammer strikes its object. Of course, this is also the most efficient use of the hammer. Waitresses should be instructed not to extend the wrist when carrying a tray or opening the swinging door into the kitchen. Presenting

the education for habit change to patients is simply a situation of convincing them that the condition will return unless the adverse habit pattern is corrected.

ULNAR NERVE

There are two specific areas where the ulnar nerve is subject to entrapment. These are the elbow and upper portion of the forearm, and the wrist and hand. There is minimal ulnar nerve involvement in the arm above the elbow or the forearm below it.

ELBOW & FOREARM

ANATOMY

The ulnar nerve arises as a branch of the medial cord of the brachial plexus and the axillary area. From its origin to the elbow it occupies a superficial position along the medial side of the arm and gives off no branches. It approaches the elbow on the posterior medial aspect to the groove between the olecranon and the medial epicondyle of the humerus. At this groove the ulner nerve is covered only by fascia and skin. Continuing into the forearm, the nerve passes between the ulnar and medial heads of the flexor carpi ulnaris muscle. It courses down the forearm between the flexor carpi ulnaris and the flexor digitorum profundus muscles, and enters the wrist superficial to the flexor retinaculum, giving branches to the hand which will be described later.

In the forearm the ulnar nerve supplies the flexor carpi

ulnaris and the ulnar half of the flexor digitorum profundus muscles. There are two cutaneous branches arising in the forearm. The palmar cutaneous branch arises near the middle of the forearm and supplies the ulnar artery as it accompanies it into the hand. It supplies a portion of the skin of the palm, and communicates with the palmar branch of the median nerve. The dorsal cutaneous branch of the ulna arises in the distal half of the forearm and supplies the skin of the little finger and half of the ring finger, as well as the ulnar aspect of the dorsum of the hand and the proximal aspect of the ulnar side of the palm.

SYMPTOMS

The symptomatic pattern of ulnar entrapment at the elbow is generally pain of ulnar distribution. It may develop into numbness and tingling of the little finger and half of the ring finger. The patient may complain of muscle weakness or clumsiness of the hand. Dysfunction of the muscles of ulnar innervation is not generally as dramatic as that of median nerve innervation. If the involvement is chronic there will generally be atrophy of the muscles of ulnar innervation. This will appear as hollowing between the metacarpal bones on the dorsal aspect as a result of atrophy of the lumbricales muscles. The space between the thumb and the index finger will appear hollow from atrophy of the dorsal interosseous, and there will be a loss of the usually convex appearance of the ulnar side of the forearm from atrophy of the flexor

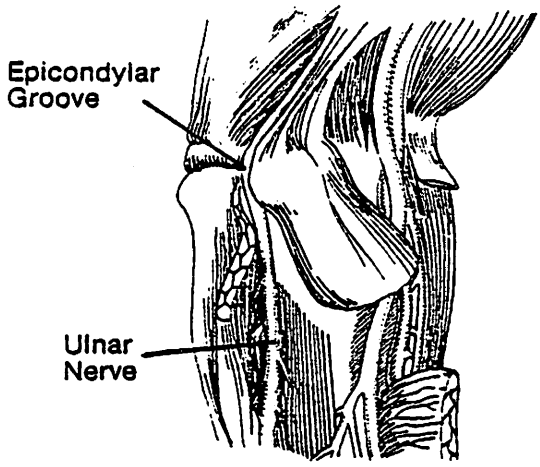
carpi ulnaris and the ulnar aspect of the flexor digitorum profundus. Severe nerve loss will cause the hand to deviate radially from loss of the flexor carpi ulnaris.

ENTRAPMENT AT THE ELBOW

The common area of ulnar nerve involvement is at the elbow. There is minimal neuropathy of the nerve in the arm after the thoracic outlet or in the forearm below the elbow.

Epicondylar Groove

Where the nerve passes over the groove between the olecranon and medial epicondyle of the humerus, it has very little protection and is thus subject to trauma. Nerve injury can result from a specific sharp trauma to the vulnerable area, or can be from chronic habit or work patterns. An individual leaning on the elbows when working at a desk or other such repeated trauma can cause involvement of the structures innervated by this nerve. Correction for these general habitual trauma cases is changing habit or work patterns. The nerve will generally heal when the repeated trauma is removed.



In some cases the groove is too shallow to retain the nerve, or there is a deficiency in the fascial covering over the groove. In these cases there may be displacement of the

nerve from the groove during flexion. This is particularly problematic when the nerve fails to totally dislocate, coming just to the edge of the groove and teetering just shy of dislocating. It dislocates completely only on forceful motions. [Kopell & Thompson, '76__] It is often possible to feel the nerve dislocating in and out of the groove or moving just to the edge. Conservative treatment is rarely effective in this usually congenital condition. The therapeutic approach is generally a surgical anterior transposition of the nerve.

Cubital Tunnel

The cubital tunnel is considered to be formed by the medial ligament at the elbow joint as the floor, and covered by the aponeurotic arch from the olecranon process to the medial condyle. The location is just prior to the nerve penetrating the forearm between the two heads of the flexor carpi ulnaris. This is not to be confused with the cubital fossa, which is in the anterior region of the elbow and is a triangular space bordered laterally by the brachioradialis and medially by the pronator teres, through which the biceps tendon, brachial artery, median nerve, and musculocutaneous nerve pass. [Hoppenfeld, '76__] An apparent extension of this involvement is described by Kopell and Thompson ['76 _] as an entrapment of the nerve immediately after the tunnel, where it goes between the two heads of the flexor carpi ulnaris muscle. The entrapment apparently develops as a result of

thickening of the aponeurosis that joins the two heads of the flexor carpi ulnaris, or from bulging of the ligamentous floor of the tunnel during flexion. The pattern of this entrapment is that of high ulnar entrapment, swelling and tenderness at the the tunnel or at the two heads of the flexor carpi ulnaris. Combined flexion at the wrist and elbow increases the pain because of stretching of the flexor carpi ulnaris. Treatment with applied kinesiology methods to lengthen and relax the flexor carpi ulnaris is sometimes effective in correcting this nerve entrapment. On occasion it may need surgical intervention for decompression, especially when there is a sharpened, more prominent trochlear edge as a result of arthritic process. [Kopell & Thompson, '76__]

DIFFERENTIAL DIAGNOSIS

Entrapment of the ulnar nerve at the elbow and forearm must be differentiated from cervical spine lesions, thoracic outlet syndromes, and involvements in the wrist and hand. As stated, most entrapments of this section of the ulnar nerve are located at the elbow. With involvement at this area one would expect to find weakness of the ulnar aspect of the flexor digitorum profundus and flexor carpi ulnaris muscles, as well as the ulnar-innervated muscles of the hand. The muscular complaints mentioned above under symptoms are present. A classic symptom of ulnar neuropathy is inability to spread the fingers, with particular impairment of abduction of the little finger.

There may or may not be sensory loss as a result of entrapment at the elbow. Confusion may develop if there are communicating branches between the median and ulnar nerves. This may give a different pattern of sensory involvement or muscle weakness.

Challenge and therapy localization can be used to help differentially diagnose the various conditions. Movement of the ulnar nerve in and out of the condylar groove can generally be palpated by the examiner. There will be tenderness of the nerve, and it will show positive therapy localization which cannot be negated by challenge. Entrapment at the cubital tunnel or between the two heads of the flexor carpi ulnaris will also show positive therapy localization. If the flexor carpi ulnaris muscle is involved in the entrapment there will probably be positive therapy localization over its proprioceptors, or there will be a positive muscle stretch response. If so, the muscle should be treated as indicated, and there will probably be a therapeutic result. Of course one of the first phases of consultation and examination is to determine if the patient has habit or work patterns which are continually producing trauma to the ulnar nerve. This requires a change of the pattern to remove the etiology.

Localization of involvements at the elbow is very important in order to avoid treating the wrist-hand mechanism, shoulder outlet, or cervical spine when the basic underlying cause is not located there.

ULNAR NERVE

WRIST-HAND

ANATOMY

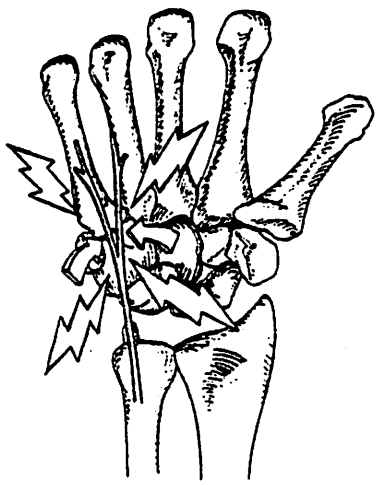
The anatomy of the ulnar nerve for the wrist-hand can be considered to begin as the ulnar nerve passes superficial to the flexor retinaculum in company with the ulnar artery. It divides into a superficial and a deep branch. The superficial branch supplies the palmaris brevis muscle and the skin of the little finger and half of the ring finger. The deep branch is the primary motor nerve and supplies the opponens digiti minimi, flexor digiti minimi brevis, and abductor digiti minimi muscles. As it crosses the hand it supplies the interossei and the third and fourth lumbricales. It completely crosses the hand and gives branches to the adductor pollicis, palmar interosseous, and the deep head of the flexor pollicis brevis.

Ebeling et al. ['60__] localized three areas for ulnar entrapment in the hand. (1) Compression of the distal terminal motor branch which causes weakness of the interossei, medial two lumbricales, and the adductor pollicis. (2) Proximal entrapment of the terminal motor branch, where all ulnar-innervated hand muscles are affected. There is no sensory impairment of ulnar distribution because sensory branches are more proximal. Neuropathies from entrapment at the pisiform hamate tunnel are usually in this area. (3) Compression of the nerve as it enters the hand. All the muscle weaknesses previously mentioned are present; in addition there

is sensory involvement of the distal palm and lower surface of the little and middle ring fingers. The sensation over the dorsum of the hand and the proximal palmar region is from the palmar and dorsal cutaneous nerves which arise in the forearm.

SYMPTOMS AND ETIOLOGY

The symptoms of ulnar entrapment at the wrist-hand will generally include pain and perhaps tingling and numbness of ulnar distribution. The muscles innervated by the ulnar nerve distal to the wrist may be weak, and the patient may be unable to perform tasks which require dexterity. There may be inability to press the tips of the thumb and little finger together forcefully from weakness of the adductor pollicis and first dorsal interosseous muscles.



Pisiform Hamate Syndrome

The most common cause of ulnar neuropathy below the wrist is trauma to the hand. This may result from occupational activities, such as operating a pneumatic hammer, using a staple gun, pressing hard on various types of levers, the use of pliers, hammers, etc. Sometimes, especially in the elderly when there is a low back problem, ulnar neuropathy will develop when the patient uses the flat of the hand to assist himself in arising from a chair. The carpal tunnel syndrome more often results from this activity, but it is

also a cause of ulnar neuropathy. The same basic principle applies in the use of a cane or crutches. Nerve trauma may develop from a single episode, such as hitting hard on a window to force it open or other similar activity.

DIAGNOSIS

Entrapment of the ulnar nerve at the wrist and hand must first be differentially diagnosed from the more proximal entrapment neuropathies. When the involvement is limited to the hand, there will be a normal muscle test of the flexor digitorum profundus muscle in the fourth and fifth fingers which receive ulnar innervation, but proximal to the wrist. If the entrapment is due to a subluxation, usually of the pisiform or hamate but possibly of other carpal bones, challenge and therapy localization will cause weak associated muscles to regain their strength as observed on manual muscle testing. Findings at the elbow and shoulder outlet will be negative.

TREATMENT

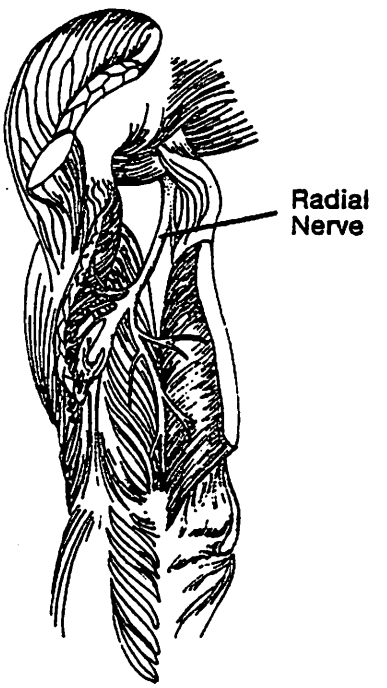
Most involvements of the ulnar nerve below the wrist respond to applied kinesiology techniques of examination and correction. It is usually necessary to adjust the pisiform or hamate or other carpal bones to re-establish normal function of the structure. This is accomplished in a manner similar to that described for carpal adjustment in the carpal tunnel syndrome. The carpal bones are challenged until the vector

of force is found which improves muscle function as observed on manual muscle testing. The structure is then manipulated in that direction, either by various adjusting techniques or with an activator instrument. It is occasionally necessary to add tape support and possibly padding over the damaged area to enhance healing. Nutritional support of raw bone nucleoprotein extract or concentrate may be necessary.

RADIAL NERVE

ANATOMY

The radial nerve arises as a continuation of the posterior trunk of the brachial plexus. It supplies the extensor muscles of the arm and forearm and the general area of skin covering them. After leaving the axilla and passing the inferior border of the teres major, it spirals around the humerus in the groove which separates the medial and lateral heads of the triceps. It pierces the lateral intermuscular septum and runs between the brachialis and brachioradialis anterior to the lateral epicondyle, where it divides into the deep motor branch - which will be called the posterior interosseous nerve - and the superficial cutaneous branch.



In the arm are muscular branches for the medial and long heads of the triceps which arise in the axilla. Branches arise along the spiral groove of the humerus to supply the medial and lateral heads of the triceps and the anconeus. The lateral muscular branches supply the brachialis, brachioradialis, and extensor carpi radialis longus.

The posterior brachial cutaneous nerve arises in the axilla and supplies the skin of the arm on the dorsal surface nearly to the elbow. The posterior antebrachial cutaneous nerve has two branches which supply the dorsal part of the distal half of the arm and the dorsal side of the forearm to the wrist.

The radial nerve approaches the elbow by piercing the lateral intermuscular septum to reach the front of the lateral condyle, where it divides into its superficial and deep branches. The deep branch becomes the posterior interosseous branch at this location, and pierces the supinator muscle. Kopell and Thompson ['76] point out a surgical observation of the origin of the extensor carpi radialis brevis muscle that is not generally reported in anatomical texts. They point out that "...the origin is from a fibrous band or bridge stretching from the epicondyle to the deep fascia over the mid-volar aspect of the forearm." This fibrous edge has the potential of causing entrapment neuropathy of the deep branch as it passes under the edge on its way to the supinator muscle. Between the fibrous edge and the supinator slit is a recurrent branch to the lateral epicondyle. They consider it to be an

articular branch also carrying sensation from the common extensor origin on the lateral epicondyle. Prior to passing through the supinator muscle, branches arise for the extensor carpi radialis brevis and the supinator muscles. The posterior interosseous nerve supplies the extensor digitorum communis, extensor digiti quinti, extensor carpi ulnaris, extensor pollicis longus, extensor pollicis brevis, extensor indicis, and abductor pollicis longus muscles.

The superficial radial nerve is a sensory branch supplying the radial side of the dorsal aspect of the wrist and hand, terminating in the dorsal digital nerves.

SYMPTOMS AND ETIOLOGY

In the arm the radial nerve is superficial immediately below the insertion of the deltoid muscle, where it can be palpated against the humerus. Here it is very vulnerable to direct trauma, especially from falling against a wall, protecting oneself by raising the arm against a falling object, etc. Both motor dysfunction and sensory disturbance will develop as a result of trauma at this area. Trauma to the nerve can develop from constant external compression, such as hanging the arm over a bench or chair, or placing the arm above the head with the head resting on it during sleep. This type of compression can cause either an intermittent nerve dysfunction or, if the habit is chronic, a neuropathy which gives constant symptoms. Many times the patient will complain of waking with numbness in the arms

and deny poor sleeping positions. A family member may comment that the individual does often sleep in positions which can cause compression on the nerve. The patient fails to recognize this, possibly because of having moved just prior to awakening. This often explains "sleep paralysis" when the thoracic outlet fails to show entrapment of a nerve or compression on blood vessels when examined in the various positions of sleep.

There are several considerations for entrapment neuropathy as the radial nerve enters the forearm. As previously stated, the deep branch courses under the fibrous edge of the extensor carpi radialis brevis muscle. Prior to coursing through the supinator muscle but after passing the extensor carpi radialis brevis edge, it gives off the recurrent branch. This nerve supplies the elbow articulation, and possibly supplies sensation from the common extensor origin on the lateral epicondyle. [Ropell & Thompson, '76__] Thus the edge of the extensor carpi radialis brevis muscle can cause entrapment of the recurrent branch mediating sensations from the joint and muscles of the elbow, as well as cause entrapment of the deep branch of the radial nerve. The deep branch is further subjected to potential entrapment as it courses through a slit in the supinator muscle to achieve its deep position posterior to the interosseous membrane of the forearm.

The entrapment usually produces weakness of all the muscles supplied by the deep branch, including the supinator muscle. The brachialis, brachioradialis, and extensor carpi radialis longus are spared because they receive their branches

prior to the bifurcation of the superficial and deep branches of the radial nerve. There will probably be pain at the elbow region simulating that typically diagnosed as "tennis elbow." The entrapment may have an insidious onset with no known trauma. It is often brought on by activities which require strong supination and is further aggravated with wrist extension. The activity may be occupational, such as the use of a hammer, pliers, pulling on levers, etc. A classic illustration of forceful supination and wrist extension is the tennis backhand, where both the supinator muscle and the extensor carpi radialis brevis muscle are forcefully contracted.

DIFFERENTIAL DIAGNOSIS

Entrapment of the deep branch of the radial nerve at the fibrous edge of the extensor carpi radialis brevis or within the supinator muscle will usually spare the brachioradialis, and its strength will be maintained. The extensor carpi radialis longus is also strong. Even though the extensor carpi radialis longus receives its nerve supply prior to the potential area of entrapment it is not a good muscle to use for differentiation, because it is tested with the extensor carpi radialis brevis. If there is entrapment as a result of the fibrous edge of the extensor carpi radialis brevis, its contraction during muscle testing may increase pain because of tightening of its fibrous edge against the nerve. The increase of pain may cause the muscle to appear

to be weak. In any case, because there is normal innervation to the extensor carpi radialis longus the patient will not have wrist drop. There will be an inability to extend the fingers with adequate strength and weakness on supination.

Tests commonly used for tennis elbow in one way or another place additional stress on the deep branch of the radial nerve as it passes under the fibrous edge of the extensor carpi radialis brevis muscle and at the supinator muscle. One such test has the patient flex the fingers and extend the wrist while the examiner tries to flex the wrist against the patient's resistance. [Hoppenfeld, '76__] This in essence is the test for the extensor carpi radialis longus and brevis, and obviously tightens the fibrous edge of the extensor carpi radialis brevis to further irritate the nerve if it is being impinged upon. The variations of Mill's test [Mazion, '80 _] which are for tennis elbow all in one way or another potentially cause additional entrapment at the fibrous edge of the extensor carpi radialis brevis and contract or stretch the supinator muscle. The classic test is with the elbow in full extension; the wrist and fingers are fully flexed and the forearm is maximally pronated. This stretches the extensor carpi radialis brevis and the supinator muscle. Either contracting these muscles or stretching them may irritate a nerve entrapment of the area, increasing the pain. Some who deal with entrapment neuropathy believe that many cases diagnosed as "...a localized myofascitis, pinching of synovia within the joint or a localized bursitis..." or more generally

termed tennis elbow are in reality a peripheral nerve entrapment at the elbow. [Ropell & Thompson, '76__] Clinical experience in applied kinesiology supports this postulation. Conditions which meet all of the criteria for a tennis elbow also meet the criteria for a peripheral nerve entrapment. Correction of the muscular involvement and subluxations of the elbow and wrist provides excellent clinical results. It is very possible that the clinical evidence of a tennis elbow condition is a combination of peripheral nerve entrapment and dysfunction of the supinator muscles and the common extensor tendon from the lateral epicondyle of the humerus. These muscles are commonly in need of muscle proprioceptive treatment, spray and stretch, or fascial flush treatment of applied kinesiology.

Sensory involvement of radial distribution typically has a more proximal neuropathy since the superficial branch arises from the radial nerve proximal to the extensor carpi radialis brevis and supinator muscles.

TREATMENT

The extensor carpi radialis brevis muscle as well as the supinator should be evaluated for dysfunction. This may include weakness or hypertonicity as a result of improper function of muscle proprioceptors or a positive muscle stretch reaction. The muscles should be corrected with the appropriate treatment. Often there are subluxations of the elbow including the proximal radio-ulnar and radiohumeral articulations. It

is postulated that these subluxations can sometimes be the primary reason for the dysfunction of the supinator or the extensor carpi radialis brevis muscle. Whenever a subluxation at the elbow needs correction, the distal radio-ulnar articulation and the forearm's articulation with the carpi must be evaluated and corrected if necessary.

SUMMARY:

Presented is a method of differential diagnosis for peripheral nerve entrapment of the upper extremity. Considered first is evaluation of the thoracic outlet syndromes, followed by individual consideration of the median, ulnar, and radial nerves. The median and ulnar nerves are considered for entrapment at the elbow and at the wrist and hand. All examination procedures include applied kinesiology muscle testing techniques and orthopedic and neurologic considerations. Applied kinesiology treatment techniques are also given.

REFERENCES

A.W. Adson, "Cervical Ribs: Symptoms, Differential Diagnosis for Section of the Insertion of the Scalenus Anticus Muscle," Journal of International College of Surgeons 16:546 (1951).

Albert J. Aguayo, "Neuropathy Due to Compression and Entrapment," in Peter James Dyck, P. K. Thomas, Edward H. Lambert, eds. Peripheral Neuropathy Vol. 1 (Philadelphia: W. B. Saunders Co., 1975).

Rene Cailliet, Shoulder Pain (Philadelphia: F.A. Davis Co., 1966).

P. Ebeling, R. W. Gilliatt, and P. K. Thomas, "A Clinical and Electrical Study of Ulnar Nerve Lesions in the Hand," J. Neurol. Neurosurg. Psychiatry, 23:1-9 (1960).

M.A. Falconer and G. Weddel, "Costoclavicular Compression of the Subclavian Artery and Vein: Relation to Scalenus Anticus Syndrome," Lancet II (Oct. 1943), pp. 539-543.

Ernest Gardner, "Gross Anatomy of the Peripheral Nervous System," in Peter James Dyck, P. K. Thomas, Edward H. Lambert, eds. Peripheral Neuropathy (Philadelphia: W. B. Saunders Co., 1975).

George J. Goodheart, Jr., "The Carpal Tunnel Syndrome" Digest of Chiropractic Economics Vol. 10 No. 1, page 28, July/August 1967.

George J. Goodheart, Jr., "Gait and Associated Problems," Digest of Chiropractic Economics Volume 18, No. 1:14 (1975).

George J. Goodheart, Jr., Applied Kinesiology 9th ed. (Detroit: privately published 1973).

George J. Goodheart, Jr., Applied Kinesiology 13th ed. (Detroit: privately published, 1977).

George J. Goodheart, Jr., Applied Kinesiology 15th ed. (Detroit: privately published, 1979).

George J. Goodheart, Jr., Applied Kinesiology 16th ed. Vol. 1 (Detroit: privately published, 1980).

Henry Gray, Anatomy of the Human Body 29th American Ed., Charles Mayo Goss, ed. (Philadelphia: Lea & Febiger, 1973).

Stanley Hoppenfeld, Physical Examination of the Spine and Extremities (New York: Appleton Century Crofts, 1976).

R. W. Jamieson and B. J. Anson, "The Relation of the Median Nerve to the Heads of Origin of the Pronator Teres Muscle," Quart. Bull. Northw. Univ. Med. Sch., 26, 34-35.

Emanuel B. Kaplan and Morton Spinner, "Normal and

Anomalous Innervation Patterns in the Upper Extremity," in George E. Omer, Jr. and Morton Spinner, eds. Management of Peripheral Problems (Philadelphia: W. B. Saunders Co., 1980).

Henry O. Kendall, Florence P. Kendall, and Dorothy A. Boynton, Posture and Pain (Baltimore: Williams & Wilkins Co., 1952. Facsimile ed. Huntington, NY: Robert E. Krieger Publishing Co., 1977).

Harvey P. Kopell and Walter A.L. Thompson, Peripheral Entrapment Neuropathies (Huntington, NY: Robert E. Krieger Publishing Co., 1976).

G.W. Korting and R. Denk, Differential Diagnosis in Dermatology (Philadelphia: W.B. Saunders Co., 1976).

Robert D. Leffert, "Thoracic Outlet Syndrome," in George E. Omer, Jr. and Morton Spinner, eds. Management of Peripheral Nerve Problems (Philadelphia: W. B. Saunders Co., 1980).

Jere W. Lord, Jr., and Lewis M. Rosati, "Thoracic Outlet Syndromes," Clinical Symposia Ciba-Geigy Corp., (1971).

R. L. Linscheid, L. F. A. Peterson, and J. L. Juergens, "Carpal Tunnel Syndrome Associated with Vasospasm," Journal of Bone and Joint Surgery 49A:1141, (1967).

F. H. Mayfield, "Neural and Vascular Compression Syndromes of the Shoulder Girdles and Arms" in P. J. Vinkin and G. W. Brayn, eds. Handbook of Clinical Neurology Vol. 7 (Amsterdam: North Holland Publishing Co., 1970).

J. M. Mazion, Illustrated Manual of Orthopedic Signs/Tests/Maneuvers for Office Procedure (Cocoa Beach, FL: privately published, 1980).

M. Spinner, "The Functional Attitude of the Hand Afflicted with an Anterior Interosseus Nerve Paralysis," Bull. Hosp. Joint Dis. 30:21, (1969).

Morton Spinner, "Management of Nerve Compression Lesions of the Upper Extremity," in George E. Omer, Jr., Morton Spinner, Management of Peripheral Nerve Problems (Philadelphia: W. B. Saunders Co., 1980).

Peter Tsairis, "Brachial Plexus Neuropathies" in Peripheral Neuropathy, Peter Dyck, P.K. Thomas, and Edward H. Lambert, editors (Philadelphia: W.B. Saunders Co., 1975).

David S. Walther, Applied Kinesiology, Vol. I - Basic Procedures and Muscle Testing (Pueblo, CO: Systems DC, 1981).

E.F.S. Wilgis, "Observations on the Effects of Tourniquet Ischemia," Journal of Bone and Joint

Surgery 53-A:1343 (1971).

E.F.S. Wilgis, "Special Diagnostic Studies," in Management of Peripheral Nerve Problems, George E. Omer, Jr., and Morton Spinner, editors (Philadelphia: W.B. Saunders Co., 1980).

I.S. Wright, "The Neurovascular Syndrome Produced by Hyperabduction of the Arms," American Heart Journal 29:1 (1945).

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