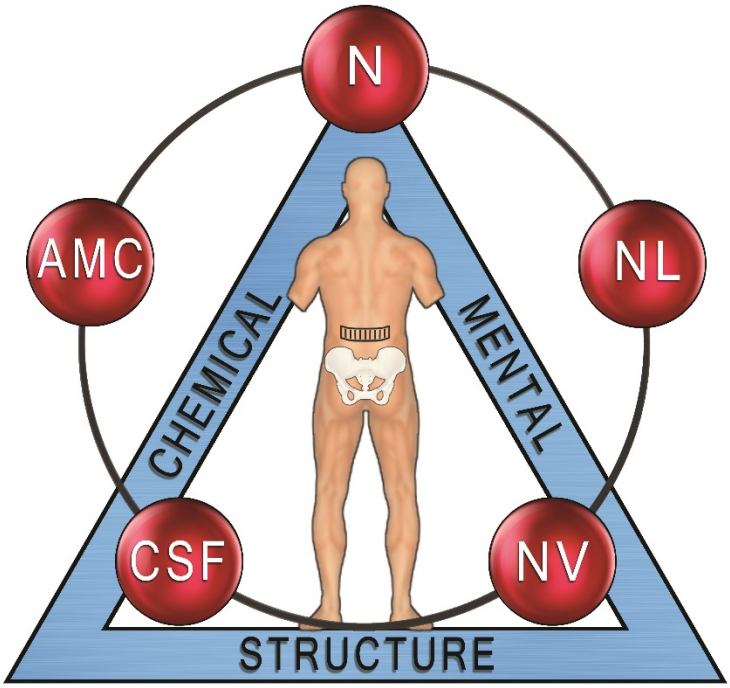

INTERNATIONAL COLLEGE OF APPLIED KINESIOLOGY U.S.A.

Experimental Observations of Members of the ICAK

Volume 1, 2018-2019

Sixtieth Collection of the Proceedings of the Annual Meeting

International College of Applied Kinesiology® – U.S.A.

Experimental Observations of the Members of the ICAK

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Professional Applied Kinesiology™

International College of Applied Kinesiology® – U.S.A.

Experimental Observations of the Members of the ICAK

Volume I, 2018-2019

Proceedings of the Annual Meeting

Presented:

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Publications Staff:

Jennifer Palmer, Executive Director
Chalise Shaw, Membership & Publications Manager

Message from the Chairman

R. Thomas Roselle, D.C., PAc, PAK, D.C.C.N., D.C.B.C.N.

For over 54 years, the members of the International College of Applied Kinesiology®-U.S.A. have shared their insights, outcomes, case histories and research through the papers presented in the Proceedings. The ICAK-U.S.A. remains a consortium of academic and intellectual exceptionalism. It continues to thrive as forum of individual observations, clinical results and research. These published works document the first steps toward furthering the application of applied kinesiology in diagnosis and clinical skills ultimately becoming the part of the accepted body of knowledge we embrace.

We invite and encourage all members to participate in contributing to and expanding upon the basis of neuro-functional muscle testing we call applied kinesiology. Your clinic is your laboratory, your patients the source of unlimited observation and input, and whether a case or double-blind study, they all add to the knowledge base.

We are pleased to have the opportunity share with the members of ICAK-U.S.A. the advances and successes of this year. It is truly a gathering of academic eagles and clinical genius.

Thank you and congratulations to all of you who have taken the time to contribute. A special thanks to Drs. Denise Natale, David Engel, and Janet Calhoon.

With excitement, we look forward to seeing you, our AK family, in Chicago, IL!

Introduction

This sixtieth collection of papers from members of the International College of Applied Kinesiology®-U.S.A. contains 14 papers written by nine authors. The authors welcome comments and further ideas on their findings. You may talk with them at the meeting or write them directly; addresses are given in the Table of Contents.

The manuscripts are published by ICAK-U.S.A. as presented by the authors. There has been no effort to edit them in any way; however, they have been reviewed by the *Proceedings* Review Team for originality and to determine that they follow the "Instructions to Authors" published by the ICAK-U.S.A. The primary purpose of the ICAK-U.S.A. in publishing the *Proceedings* is to provide an interchange of ideas to stimulate improved examination and therapeutic methods in applied kinesiology.

It should be understood that the procedures presented in these papers are not to be construed as a single method of diagnosis or treatment. The ICAK-U.S.A. expects applied kinesiology to be used by physicians licensed to be primary health care providers as an adjunct to their standard methods of diagnosis and treatment.

Neither the International College of Applied Kinesiology®-U.S.A., its Executive Board, nor the membership, nor the International Board of Examiners, International College of Applied Kinesiology, necessarily endorses, approves of, or vouches for the originality or authenticity of any statements of fact or opinion in these papers. The opinions and positions stated are those of the authors and not by act of publication necessarily those of the International College of Applied Kinesiology®-U.S.A., the Executive Board or membership of the International College of Applied Kinesiology®-U.S.A., or the International Board of Examiners, International College of Applied Kinesiology.

Instructions to Authors

Proceedings of the ICAK-U.S.A.

Manuscripts are reviewed for format, technical content, originality, and quality for reproduction. There is no review for authenticity of material.

The ICAK-U.S.A. recognizes that the usual procedure for selection of papers in the scientific community is a blind review. However, the purpose of *The Proceedings of the ICAK-U.S.A.* is to stimulate dialogue, creative thinking and critical review among its members; thus, review in this instance is not blinded. These papers are distributed only to the members of the ICAK-U.S.A. for general comment and evaluation, and for the members to put into perspective the validity of the described approaches. The purpose is to put before the membership primary observations that may lead to more in-depth study and scientific investigations, as well as spawn new areas of research. Such is to inspire progress in the field of applied kinesiology.

Statements and opinions expressed in the articles and communications in *The Proceedings of the ICAK-U.S.A.* are those of the author(s) and the editor(s). The ICAK-U.S.A. disclaims any responsibility or liability for such material.

The current ICAK-U.S.A. Status Statement appears in *The Proceedings of the ICAK-U.S.A.* It is recommended that procedures presented in papers conform to the Status Statement; papers that do not will be published and identified in the table of contents as failing to conform. Whenever possible, all papers should be supported by statistical analyses, literary references, and/or any other data supporting the procedure.

Manuscripts are accepted by the ICAK-U.S.A. for publication with the understanding that they represent original unpublished work. Delivery of a manuscript to the ICAK-U.S.A. Central Office does not imply it will be published in the Proceedings. Manuscripts are reviewed by the Proceedings Review Committee and authors will be notified in a timely manner of their manuscripts acceptance or rejection. The author may appeal any paper rejected to a separate committee composed of members of the Publications and Research Advisory Committees. The decision of this committee on publishing the paper will be final.

The paper must be an original work and deal specifically with applied kinesiology examination and/or treatment techniques. Various techniques may be discussed if they are correlated with applied kinesiology manual muscle testing examination.

All manuscripts (meaning any material submitted for consideration to publish) must be accompanied by a properly completed *RELEASE FORM*, signed by all authors and by any employer if the submission represents a "work for hire." Upon such submission, it is to be understood by all authors that no further dissemination of any part of the material contained in the manuscript is permitted, in any manner, without prior approval from the editor; nonobservance of this copyright agreement may result in the cancellation of the ICAK-U.S.A.'s consideration to publish.

Continuing call for papers includes:

Research studies (Investigations)—reports of new research findings pertaining to the enhancement of factors of health, causal aspects of disease, and the establishment of clinical efficacies of related diagnostic and therapeutic procedures.

Hypotheses—projections from previous observations that may establish a solid basis for further in-depth investigations.

Literature reviews—critical assessments of current knowledge of a particular subject of interest, with emphasis on better correlation, the identification of ambiguities, and the delineation of areas that may constitute hypotheses for further study. Meta-analyses are included here.

Clinical procedures—succinct, informative, didactic papers on diagnostic and therapeutic procedures, based heavily on authoritative current knowledge.

Case reports—accounts of the diagnosis and treatment of unusual, difficult, or otherwise interesting cases that may have independent educational value or may contribute to better standardization of care for a particular health problem when correlated with similar reports of others.

Case reviews—a retrospective comparative assessment of the diagnosis and treatment of several cases of a similar condition i.e., the comparative evaluation of two or more case reports.

Technical reports—the reporting and evaluation of new or improved equipment or procedures, or the critical evaluation of old equipment or procedures that have not previously been critically evaluated.

Commentary—editorial-like, more in-depth essays on matters relating to the clinical, professional, educational, and/or politicolegal aspects of health care principles and practice.

Critical review (Letters to the editor)—communications that are directed specifically to the editor that critically assess some aspect of the ICAK, particularly as such assessment may add to, clarify, or point up a deficiency in a recently published paper; authors are afforded the privilege of a counter-response.

The following editorial policies will apply:

Informed consent—Manuscripts that report the results of experimental investigations with human subjects must include a statement that informed consent was obtained, in writing, from the subject or legal guardian, after the procedure(s) had been fully explained with documentation that such procedures have been fully understood. Photographs or artistic likenesses of subjects are publishable only with their written

consent or the consent of a legal guardian; the signed consent form, specifying any special conditions (e.g. eyes blocked off), must accompany manuscript.

Patient anonymity—Ethical and legal considerations require careful attention to the protection of the patient's anonymity in case reports and elsewhere. Identifying information such as names, initials, actual case numbers, and specific dates must be avoided; other identifying information about a patient's personal history and characteristics should be disguised.

Authorship—all authors of papers submitted to ICAK-U.S.A. must have an intellectual stake in the material presented for publication. All must be willing to answer for the content of the work. Authors should be willing to certify participation in the work, vouch for its validity, acknowledge reviewing and approving the final version of the paper, acknowledge that the work has not been previously published elsewhere, and be able to produce raw data if requested.

Conflict of interest—in recognition that it may at times be difficult to judge material from authors where proprietary interests are concerned, authors should be prepared to answer requests from the editor regarding potential conflicts of interest. The editor makes the final determination concerning the extent of information released to the public.

Acknowledgments—Illustrations from other publications must be submitted with written approval from the publisher (and author if required) and must be appropriately acknowledged in the manuscript.

Author responsibility—Manuscripts accepted for publication are subject to such editorial modification and revision as may be necessary to ensure clarity, conciseness, correct usage, and conformance to approved style. However, insofar as authors are responsible for all information contained in their published work, they will be consulted if substantive changes are required and will have further opportunity to make any necessary corrections on the proofs.

Manuscript Preparation

Authors are requested to submit final manuscripts via email to icak@dci-kansascity.com or on computer disc (CD) to 4919 Lamar Ave., Mission, KS 66202. Each manuscript file should be titled with the author's last name and the manuscript tile. All manuscripts must be submitted in Microsoft Word.

The ICAK-U.S.A. does not assume responsibility for errors in conversion of customized software, newly released software and special characters. Mathematics and tabular material will be processed in the traditional manner.

Approved Manuscript Style

Manuscripts submitted for consideration to publish in *The Proceedings of the ICAK-U.S.A.* must be compiled in accordance with the following instructions, and manuscripts not so compiled are subject to return to the author for revision.

Summary of Requirements

Type the manuscript double-spaced, including title page, abstract and key words, text, acknowledgments, references, tables, and figure legends. (Note: footnotes should be avoided by including any necessary explanatory information within the text in parentheses). Do not break any words (hyphenate) at the end of any line; move to the next line if entire word does not fit.

Each manuscript component should begin on a new page, in the following sequence:

- Title page (page 1)
- Abstract and key word page (page 2)
- Text pages (starting on page 3)
- Acknowledgment page
- Reference page(s)
- Table page(s)
- Legends for illustrations pages(s).

Detailed Preparation Procedure

Begin each of the following sections on separate pages: title (including author name[s], address and phone number of principal author, etc), abstract and key words, text, acknowledgments, references, individual tables, and figure legends.

Units of measurement—In most countries the International System of Units (SI) is standard, or is becoming so, and bioscientific journals in general are in the process of requiring the reporting of data in these metric units. However, insofar as this practice is not yet universal, particularly in the United States, it is permissible for the time being to report data in the units in which calculations were originally made, followed by the opposite unit equivalents in parentheses; i.e., English units (SI units) or SI units (English units). Nevertheless, researchers and authors considering submission of manuscripts to

the ICAK-U.S.A. should begin to adopt SI as their primary system of measurement as quickly as it is feasible.

Abbreviations and symbols—Use only standard abbreviations for units of measurement, statistical terms, biological references, journal names, etc. Avoid abbreviations in titles and abstracts. The full term for which an abbreviation stands should precede its first use in the manuscript unless it is a standard unit of measurement.

Title Page

The title page should carry (1) the title of the article, which should be concise but informative; (2) a short footline of no more than 40 characters (count letters and spaces) placed at the foot of the title page and identified; (3) first name, middle initial, and last name of each author, with highest academic degree(s); (4) names of department(s) and institution(s) to which work should be attributed; (5) disclaimers, if any; (6) name, address, phone, and fax number of author responsible for correspondence, proofreading of galleys, and reprint requests (usually principal author); (7) the source(s) of support in the form of grants, equipment, drugs, or all of these.

Abstract and Key Word Page

The second page should carry an abstract of no more than 150 words, 250 if using a structured abstract. The structured abstract is now required for all original data reports, reviews of the literature and case reports; prose abstracts will be accepted for use in only certain original papers not reporting data (i.e., position papers, historical treatises).

Please visit the following link online for helpful information on structured abstracts: www.soto-usa.org/Newsletter/DCInternetEdition/dc_internet_ed_vol_3_no3Abstrak/StructuredAbstracts.htm.

Below the abstract, provide, and identify as such, 3 to 10 key indexing terms or short phrases that will assist indexers in cross-indexing your article and that may be published with the abstract. Use terms from the Index Medicus Medical Subject Headings (MeSH) as much as possible.

Text Pages

The text of observational and experimental articles is usually—but not necessarily—divided into sections with the headings Introduction, Materials and Methods, Results, Discussion, and Conclusions. Long articles may need subheadings within some sections to clarify or break up content. Other types of articles such as case reports, reviews, editorials, and commentaries may need other formats.

Please visit the following link online for helpful information on writing patient case reports:

www.soto-usa.org/Newsletter/DCInternetEdition/dc_internet_ed_vol_3_no3Abstrak/Green%20Johnson%20Case%20Reports.pdf

Reference: Green BN, Johnson CD, Writing Patient Case Reports for Peer-Reviewed Journals: Secrets of the Trade Journal of Sports Chiropractic & Rehabilitation. 2000 Sep; 14(3): 51-9.

Introduction

Clearly state the purpose of the article. Summarize the rationale for the study or observation. Give only strictly pertinent references and do not review the subject extensively; the introduction should serve only to introduce what was done, why it was done and what could be done to address shortcomings or gaps in what we have learned from what was done.

Materials and Methods

Describe your selection of the observational or experimental subjects (patients or experimental animals, including controls) clearly. Identify the methods, apparatus (manufacturer's name and address in parentheses) and procedures in sufficient detail to allow others to reproduce the work for comparison of results. Give references to establish methods, provide references and brief descriptions for methods that have been published but may not be well known, describe new or substantially modified methods, give reasons for using them and evaluate their limitations.

When reporting experiments on or with human subjects, indicate whether the procedures used were in accordance with the ethical standards of the Committee on Human Experimentation of the institution in which the research was conducted and/or were done in accordance with the Helsinki Declaration of 1975. When reporting experiments on animals, indicate whether the institution's or the National Research Council's guide for the care and use of laboratory animals was followed. Identify precisely all drugs and chemicals used, including generic name(s), dosage(s), and route(s) of administration. Do not use patient names, initials, or hospital numbers or in any manner give information by which the individuals could be identified.

Include numbers of observations and the statistical significance of the findings when appropriate. Detailed statistical analyses, mathematical derivations, and the like may sometimes be suitably presented in the form of one or more appendices.

Results

Present your results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables, illustrations, or both; emphasize or summarize only important observations.

Discussion

Emphasize the new and important aspects of the study and conclusions that follow from them. Do not repeat in detail the data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies. Conclusions that may be drawn from the study may be alluded in this section; however, they are more formally presented in the section to follow.

Conclusions

The principal conclusions should be directly linked to the goals of the study. Unqualified statements and conclusions not completely supported by your data should be avoided. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted but clearly label them as such. Recommendations (for further study, etc), when appropriate, may be included.

Acknowledgments

Acknowledge only persons who have made substantive contributions to the study itself; this would ordinarily include support personnel such as statistical or manuscript review consultants, but not subjects used in the study or clerical staff. Authors are responsible for obtaining written permission from persons being acknowledged by name, as readers will infer their endorsement of the data and conclusions.

Reference Pages

References are to be numbered consecutively as they are first used in the text (placed in line in parentheses) and listed in that order (not alphabetically) beginning on a separate sheet following the text pages. The style (including abbreviation of journal names) must be in accordance with that specified by the US National Library of Medicine: see recent January issue of *Index Medicus* for a complete listing of indexed journals.

Only those references that actually provide support for a particular statement in the text, tables, and/or figures should be used. Excessive use of references should be avoided; normally, 1 or 2 authoritative references to support a particular point are sufficient. A short article of up to 5 or 6 manuscript pages may be adequately supported by 5 to 10 references; longer articles of up to 20 pages by 15 to 25.

References must be verified by the author(s) against the original document. Abstracts, “unpublished observations” and “personal communications” may not be used as references, although reference to written (not verbal) communications may be inserted in parentheses in the text. Information from manuscripts submitted but not yet accepted may be referred to in parentheses in the text. Manuscripts accepted but not yet published may be included in the references with the designation “In press.” When a previously cited

reference is used again, it is designated in the text in parentheses by the number originally assigned to it by its first use: do not assign it another number or use the notation “op cit.”

For the most part, sources of information and reference support for a bioscientific paper should be limited to journals (rather than books) because that knowledge is generally considered more recent and more accurate since it is customarily peer-reviewed. Consequently, the basic form for approved reference style is established by journal listings; others (books, etc) are modified from journal listings as may be required. A summary of journal reference style is as follows:

Last name of author(s) and their initials in capitals separated by a space with a comma separating each author. (List all authors when 6 or fewer; when 7 or more, list only the first 6 and add et al.)

Title of article with first word capitalized and all other words in lower case, except names of persons, places, etc.

Name of journal, abbreviated according to *Index Medicus*; year of publication (followed by a semicolon); volume number (followed by a colon); and inclusive pages of article (with redundant number omitted: e.g., 105-10).

Specific examples of correct reference form for journals and their modifications to other publications are as follows:

Journals

1. Standard article You CH, Lee KY, Chey RY, Menguy R. Electrogastrographic study of patients with unexplained nausea, bloating and vomiting. Gastroenterology 1980; 79:311-4.

2. Corporate author The Royal Marsden Hospital Bone-Marrow Transplantation Team. Failure of synergeneic bone-marrow graft without preconditioning in post-hepatitis marrow aplasia. Lancet 1977;2:242-4.

3. No author given Coffee drinking and cancer of the pancreas [editorial]. Br Med J 1981;283:628.

4. Journal supplement Magni F. Rossoni G, Berti F. BN-52021 protects guinea-pig from heart anaphylaxis. Pharmacol Res Commun 1988;20 Suppl 5:75-8.

5. Journal paginated by issue rather than volume Seaman WB. The case of pancreatic pseudocyst. Hosp Pract 1981;16:24-5.

Books and other monographs

6. Personal author(s) Eisen HN. Immunology: an introduction to molecular and cellular principles of the immune response. 5th ed. New York: Harper and Row; 1974. p. 406.

7. Editor, compiler, chairman as author Dausset J, Colombani J, editors. Histocompatibility testing 1972. Copenhagen: Munksgaard; 1973. p. 12-8.

8. Chapter in a book Weinstein L, Swartz MN. Pathogenic properties of invading microorganisms. In: Sodeman WA Jr, Sodeman WA, editors. Pathologic physiology: mechanisms of disease. Philadelphia: WB Saunders; 1974. p. 457-72.

9. Published proceedings paper DuPont B. Bone marrow transplantation in severe combined immunodeficiency with unrelated MLC compatible donor. In: White HJ, Smith R, editors. Proceedings of the 3rd Annual Meeting of the International Society for Experimental Hematology. Houston: International Society for Experimental Hematology; 1974. p. 44-6.

10. Agency publication Ranofsky AL. Surgical operations in short-stay hospitals: United States—1975. Hyattsville (MD): National Center for Health Statistics; 1978. DHEW publication no (PHS) 78-1785. (Vital and health statistics; series 13; no 34).

11. Dissertation or thesis Cairns RB. Infrared spectroscopic studies of solid oxygen [dissertation]. Berkeley (CA): University of California; 1965.

Other articles

12. Newspaper article Lee G. Hospitalizations tied to ozone pollution: study estimates 50,000 admissions annually. The Washington Post 1996 Jun 21; Sect. A:3 (col. 5).

13. Magazine article Roueche B. Annals of medicine: the Santa Claus culture. The New Yorker 1971 Sep 4:66-81.

Table Pages

Type each table on a separate sheet; remember to double-space all data. If applicable, identify statistical measures of variation, such as standard deviation and standard error of mean. If data are used from another published or unpublished source, obtain permission and acknowledge fully.

Using Arabic numerals, number each table consecutively (in the order in which they were listed in the text in parentheses) and supply a brief title to appear at the top of the table above a horizontal line; place any necessary explanatory matter in footnotes at the bottom of the table below a horizontal line and identify with footnote symbols *, †, ‡, §, , ¶, **, ††, ‡‡, etc.

Illustration Legend Pages

Type legends for illustrations double-spaced, starting on a separate page, following the table pages. Identify each legend with Arabic numerals in the same manner and sequence as they were indicated in the text in parentheses (e.g., Figure 1). Do not type legends on

artwork copy or on pages to which illustrations may have been mounted; they must be typed on separate pages from the illustrations themselves.

When symbols, arrows, numbers or letters are used to identify parts of the illustrations, identify and explain each one clearly (if necessary) in the legend. Explain internal scale and method of staining in photomicrographs, if applicable.

Illustration Preparation

Illustrations (including lettering, numbering and/or symbols) must be of professional quality and of sufficient size so that when they are reproduced for publication all details will be clearly discernible; rough sketches with freehand or typed lettering are not encouraged. All illustrations should be submitted embedded in the manuscript document in the appropriate place.

If photographs of persons are used, either the subjects must not be identifiable or their pictures must be accompanied by written permission to publish the photographs.

Cite each figure in the text (generally in parentheses) in consecutive order. If a figure has been published, acknowledge the original source and submit a written permission letter from the copyright holder to reproduce the material. Permission is required, regardless of authorship or publisher, except for documents in the public domain*.

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Manuscript Submission Summary

Manuscript components

In terms of completeness of submission, the "manuscript" includes the following components:

- Manuscript electronically via email of CD (The author should be sure to retain the original file in case of loss of the submission copies in transit.)
- Release form (signed by all authors, and by employer if study was a work for hire).
- Permission letter(s) of permission to use previously published material in all forms and media (if applicable).
- Consent form(s) to publish photographs in which subjects may be identifiable (if applicable).
- Cover letter from principal author (or author specified as correspondent) providing any special information regarding the submission which may be helpful in its

consideration for publication.

Submission Instructions

The manuscript should be emailed to the Central Office at icak@dci-kansascity.com. The Release Form should be completed and signed then fax to 913-384-5112 or mailed to:

The ICAK-U.S.A. Central Office
4919 Lamar Ave.
Mission, KS 66202

Applied Kinesiology
Status Statement

International College of Applied Kinesiology-U.S.A.

The International College of Applied Kinesiology–U.S.A. provides a clinical and academic arena for investigating, substantiating, and propagating A.K. findings and concepts pertinent to the relationships between structural, chemical, and mental factors in health and disease and the relationship between structural faults and the disruption of homeostasis exhibited in functional illness.

A.K. is an interdisciplinary approach to health care which draws together the core elements of the complementary therapies, creating a more unified approach to the diagnosis and treatment of functional illness. A.K. uses functional assessment measures such as posture and gait analysis, manual muscle testing as functional neurologic evaluation, range of motion, static palpation, and motion analysis. These assessments are used in conjunction with standard methods of diagnosis, such as clinical history, physical examination findings, laboratory tests, and instrumentation to develop a clinical impression of the unique physiologic condition of each patient, including an impression of the patient's functional physiologic status. When appropriate, this clinical impression is used as a guide to the application of conservative physiologic therapeutics.

The practice of applied kinesiology requires that it be used in conjunction with other standard diagnostic methods by professionals trained in clinical diagnosis. As such, the use of applied kinesiology or its component assessment procedures is appropriate only to individuals licensed to perform those procedures.

The origin of contemporary applied kinesiology is traced to 1964 when George J. Goodheart, Jr., D.C., first observed that in the absence of congenital or pathologic anomaly, postural distortion is often associated with muscles that fail to meet the demands of muscle tests designed to maximally isolate specific muscles. He observed that tender nodules were frequently palpable within the origin and/or insertion of the tested muscle. Digital manipulation of these areas of apparent muscle dysfunction improved both postural balance and the outcome of manual muscle tests. Goodheart and others have since observed that many conservative treatment methods improve neuromuscular function as perceived by manual muscle testing. These treatment methods have become the fundamental applied kinesiology approach to therapy. Included in the AK approach are specific joint manipulation or mobilization, various myofascial therapies, cranial techniques, meridian therapy, clinical nutrition, dietary management, and various reflex procedures. With expanding investigation, there has been continued amplification and modification of the treatment procedures. Although many treatment techniques incorporated into applied kinesiology were pre-existing, many new methods have been developed within the discipline itself.

Often the indication of dysfunction is the failure of a muscle to perform properly during the manual muscle test. This may be due to improper facilitation or neuromuscular inhibition. In theory, some of the proposed etiologies for the muscle dysfunction are as follows:

- Myofascial dysfunction (microavulsion and proprioceptive dysfunction)
- Peripheral nerve entrapment
- Spinal segmental facilitation and deafferentation
- Neurologic disorganization
- Viscerosomatic relationships (aberrant autonomic reflexes)
- Nutritional inadequacy
- Toxic chemical influences
- Dysfunction in the production and circulation of cerebrospinal fluid
- Adverse mechanical tension in the meningeal membranes
- Meridian system imbalance
- Lymphatic and vascular impairment

On the basis of response to therapy, it appears that in some of these conditions the primary neuromuscular dysfunction is due to deafferentation, the loss of normal sensory stimulation of neurons due to functional interruption of afferent receptors. It may occur under many circumstances but is best understood by the concept that with abnormal joint function (subluxation or fixation) the aberrant movement causes improper stimulation of the local joint and muscle receptors. This changes the transmission from these receptors through the peripheral nerves to the spinal cord, brainstem, cerebellum, cortex, and then to the effectors from their normally-expected stimulation. Symptoms of deafferentation arise from numerous levels such as motor, sensory, autonomic, and consciousness, or from anywhere throughout the neuraxis.

Applied kinesiology interactive assessment procedures represent a form of functional biomechanical and functional neurologic evaluation. The term "functional biomechanics" refers to the clinical assessment of posture, organized motion such as in gait, and ranges of motion. Muscle testing readily enters into the assessment of postural distortion, gait impairment, and altered range of motion. During a functional neurologic evaluation, muscle tests are used to monitor the physiologic response to a physical, chemical, or mental stimulus. The observed response is correlated with clinical history and physical exam findings and, as indicated, with laboratory tests and any other appropriate standard diagnostic methods. Applied kinesiology procedures are not intended to be used as a single method of diagnosis. Applied kinesiology examination should enhance standard diagnosis, not replace it.

In clinical practice the following stimuli are among those which have been observed to alter the outcome of a manual muscle test:

- Transient directional force applied to the spine, pelvis, cranium, and extremities.
- Stretching muscle, joint, ligament, and tendon

- The patient's digital contact over the skin of a suspect area of dysfunction termed therapy localization
- Repetitive contraction of muscle or motion of a joint
- Stimulation of the olfactory receptors by fumes of a chemical substance
- Gustatory stimulation, usually by nutritional material
- A phase of diaphragmatic respiration
- The patient's mental visualization of an emotional, motor, or sensory stressor activity
- Response to other sensory stimuli such as touch, nociceptor, hot, cold, visual, auditory, and vestibular afferentation

Manual muscle tests evaluate the ability of the nervous system to adapt the muscle to meet the changing pressure of the examiner's test. This requires that the examiner be trained in the anatomy, physiology, and neurology of muscle function. The action of the muscle being tested, as well as the role of synergistic muscles, must be understood. Manual muscle testing is both a science and an art. To achieve accurate results, muscle tests must be performed according to a precise testing protocol. The following factors must be carefully considered when testing muscles in clinical and research settings

- Proper positioning so the test muscle is the prime mover
- Adequate stabilization of regional anatomy
- Observation of the manner in which the patient or subject assumes and maintains the test position
- Observation of the manner in which the patient or subject performs the test
- Consistent timing, pressure, and position
- Avoidance of pre-conceived impressions regarding the test outcome
- Non-painful contacts -- non-painful execution of the test
- Contraindications due to age, debilitative disease, acute pain, and local pathology or inflammation

In applied kinesiology a close clinical association has been observed between specific muscle dysfunction and related organ or gland dysfunction. This viscerosomatic relationship is but one of the many sources of muscle weakness. Placed into perspective and properly correlated with other diagnostic input, it gives the physician an indication of the organs or glands to consider as possible sources of health problems. In standard diagnosis, body language such as paleness, fatigue, and lack of color in the capillaries and arterioles of the internal surface of the lower eyelid gives the physician an indication that anemia can be present. A diagnosis of anemia is only justified by laboratory analysis of the patient's blood. In a similar manner, the muscle-organ/gland association and other considerations in applied kinesiology give indication for further examination to confirm or rule out an association in the particular case being studied. It is the physician's total diagnostic work-up that determines the final diagnosis.

An applied kinesiology-based examination and therapy are of great value in the management of common functional health problems when used in conjunction with information obtained from a functional interpretation of the clinical history, physical and

laboratory examinations, and from instrumentation. Applied kinesiology helps the physician understand functional symptomatic complexes. In assessing a patient's status, it is important to understand any pathologic states or processes that may be present prior to instituting a form of therapy for what appears to be a functional health problem.

Applied kinesiology-based procedures are administered to achieve the following examination and therapeutic goals:

- Provide an interactive assessment of the functional health status of an individual which is not equipment intensive but does emphasize the importance of correlating findings with standard diagnostic procedures
- Restore postural balance, correct gait impairment, improve range of motion
- Restore normal afferentation to achieve proper neurologic control and/or organization of body function
- Achieve homeostasis of endocrine, immune, digestive, and other visceral function
- Intervene earlier in degenerative processes to prevent or delay the onset of frank pathologic processes

When properly performed, applied kinesiology can provide valuable insights into physiologic dysfunctions; however, many individuals have developed methods that use muscle testing (and related procedures) in a manner inconsistent with the approach advocated by the International College of Applied Kinesiology–U.S.A. Clearly the utilization of muscle testing and other AK procedures does not necessarily equate with the practice of applied kinesiology as defined by the ICAK–U.S.A.

There are both lay persons and professionals who use a form of manual muscle testing without the necessary expertise to perform specific and accurate tests. Some fail to coordinate the muscle testing findings with other standard diagnostic procedures. These may be sources of error that could lead to misinterpretation of the condition present, and thus to improper treatment or failure to treat the appropriate condition. For these reasons, the International College of Applied Kinesiology–U.S.A. defines the practice of applied kinesiology as limited to health care professionals licensed to diagnose.

Approved by the Executive Board of the International College of Applied Kinesiology–U.S.A., June 16, 1992. Updated May, 2001.

Table of Contents

International College of Applied Kinesiology® – U.S.A.

Experimental Observations of the Members of the ICAK

Volume I, 2018-2019

Proceedings of the Annual Meeting

Professional Applied Kinesiology™

Active Patient Involvement in Rehabilitation

David Leaf, D.C., DIBAK

Abstract

There has been little discussion about how to actively involve patients in their home care in musculoskeletal injuries. In chemical problems, patients are usually actively involved in determining the good, the bad, and the ugly. There has been little discussion about what is appropriate and the timing of procedures that a patient could do to improve their results and speed the recovery in musculoskeletal injuries aside from the standard medical RICE.

Key Indexing terms
Rehabilitation, Patient, Home Care

Introduction
In the late 1970s, the author purchased a series of physical therapy exercises on floppy disks. On these disks were line diagrams of exercises to be performed in different parts of the body. In 2018, the same exercises are the standards in physical therapy for treatment of most conditions. In questioning patients going to a physical therapist about their care, they are put into specific protocols depending upon the body part, but the exercises are not individualized for their particular problems and their specific needs. Everything is done by protocols, and the patient has to fit the protocol. When the first protocol has poor results, the second protocol is used. If that fails, their insurance has run out.

Discussion

In applied kinesiology, we have many tools from physical medicine to aid the patient. Part of our problem is determining which tools are indicated and when. Setting up a home routine for the patient to use these procedures that we can prescribe and modify individually for them, sets us apart from the standard physical therapy approach.

Many standard procedures are used in applied kinesiology they can easily be adapted for patients to do at home. The first problem with this is an adequate education for the patient to be able to use the techniques. The second one is when is it appropriate and when during the day is the best time for them to do it.

The first technique that was developed in applied kinesiology to treat inhibited muscles was the origin and insertion technique found by Dr. Goodheart in the mid-1960s.[1] In this procedure, the rotatory pressure was used near the origin and insertion of a muscle, and in many instances, this would cause an immediate increase in strength of the involved muscle. The problem is that the application of this once does not always solve the patient's problem. It is relatively easy to diagram out where this needs to be done for the patient to do at home.

Then the question becomes when to do it. For example, the patient has an unstable sacroiliac joint which is a result of a lifting injury which is caused by trauma to the gluteus maximus muscle. Isolation of the area involved is relatively simple due to the tenderness that can be found. The patient can be shown how to find this with their fingers. This is usually incredibly tender and sore but placing the patient in a strain counter strain position, shortening the origin and insertion of the muscle, will often cause a dramatic decrease in the discomfort when the area is massaged. The patient can be shown how to manipulate the area and shown the increase in strength that occurs with adequate treatment.

The only final problem is when is the best time to do this. If this is performed in the morning and the person actively uses the muscle afterward, it usually becomes traumatized again. If this treatment is done before or just as a person goes to bed at night, the muscle is inactive for many hours, and there is a faster and better response if it's done at this time.

Fascial involvement of the Travell type is indicated in chronic problems.[2] This is extremely common in the adductor muscles. Here we have a situation where the muscles are shortened and tightened. Treating the muscles causes a dramatic increase in the flexibility and motion of the leg. Again, doing this once in the office shows a dramatic improvement, but it tends to return. This is another technique that the patient can be taught how to do at home. First, it needs to be diagrammed so the patient can follow it. Then comes the question again of when to do this. Travell wrote of the importance of motion of the body part treated after the correction.[3] The best time to perform this for the patient is in the morning when they're going to be more active. Performing it at night and then going to bed and not using the body part gives poor results.

Another example of this is doing the pin and stretch technique. Patients can quickly be shown how to pin the muscle and then stretch it loosening cross-links between structures. Once again, this procedure is best done when the person is going to be active for example in the morning. The same can be held true for the strain counter strain procedure.[4] An excellent example of this is in the gastrocnemius. Again, the location of the trigger point area is easy to find and mark out on a chart for the patient. They can hold the corrective position for two minutes, and then slowly reduce the body part back to its normal position. Again, the question becomes when the best time of the day is to do this since you do not want the patient to use the muscle afterward actively.

There is little mention of exercise in the applied kinesiology literature. The author has found that using aerobic or anaerobic testing[5] is a useful criterion to determine the number of repetitions that a person should do to rehabilitate a muscle. It is common in the physical therapy world to have everyone do a certain number of repetitions. This is common in the athletic trainer field as well. Everyone seems to have their religious number. It might be six, 10, or all the way up to 17 repetitions. One of the common problems in physical therapy is to attempt to exercise a muscle that is not functioning correctly. They do not test the muscle to see if it can be exercised. It is common for this muscle to become weaker or at least not to be helped by the "treatment protocol."

For years, the author has used aerobic and anaerobic testing to find the number of repetitions a person can do that cannot be increased by other applied kinesiology techniques. For example, if the quadriceps muscle can contract and becomes inhibited on the fifth repetition, then exercises are set at sets of either three or four contractions but not at the number where the muscle becomes traumatized by overuse. Each muscle needing exercise to increase its tone is determined by your testing. The muscle can then be tested using the aerobic or anaerobic testing depending upon the activity of the person. This is an excellent way also to monitor the success of the exercise program. Even octogenarians can be trained and increase their strength slowly. If the muscle becomes inhibited on the third repetition and four weeks later it occurs on the fifth repetition, then you know that they have been exercising and slowly increasing their strength.

Conclusion

In treating musculoskeletal problems, it is an advantage to the patient to become actively involved in their treatment. Empowering them to aid in this also sets you apart from the physical therapy model.

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An Engineering Marvel: The Foundation for Standing – Walking – Running – Jumping

Dr. W. Berglund, D.C., N.D., P.Ac., DIBAK

Abstract

The foot represents a marvel in engineering. It has evolved with the ability to do a wide range of activities. Our feet are designed to handle the jarring impacts of running (over three and a half times one's own body weight), yet perform intricate patterns of movement like a ballerina performing a pirouette. The feet are ever vigilant in their sensory role maintaining both balance and posture. Foot mechanics play a direct role in the functional inhibition and facilitation of muscles in gait dynamics and in the proprioceptive feedback that maintains one's posture while standing. In July 1995 Janet's's Travell was introduced to forefoot varum peforation by Dr. Brian Rothbart. She felt like he had uncovered an important relationship between posture and the big toe, the third dimension of Morton's foot or what Dr. Rothbart referred to as "Primus Metatarsus Elevatus." So how do the feet play a role in posture and myofascial dysfunction? This paper will explore this paradigm in foot biomechanics.

Key Indexing Terms
Morton's Foot, Rothbarts Foot, Forefoot Varum, Metatarsus Primus Elevatus, Gait, Plantar Fasciitis, Morton's Neuroma, Stress Fractures, Bio-implosion

Introduction
In today's modern world the foot is subject to hard flat surfaces and is placed into a cushioned shoe. When wearing shoes we have a tendency to land on our heels first. This becomes a major source for injury. The shock of the impact travels up through our legs with the risk being damage our joints. In contrast barefoot runners make contact with the ground using the balls of their feet first and thereby the arch of the foot dissipates much of the force of the impact. However being barefoot simply is not practical and may lead to injury of the foot. One quarter of the bones in the human body are in the feet creating 33 joints connected by over 100 muscles, tendons and ligaments. The foot has three arches: the medial longitudinal arch, lateral longitudinal arch and the anterior transverse arch. These arches are formed by the tarsal and metatarsal bones. While there are many types of shoes and many types of orthotics, Janet Travell after meeting with Dr. Rothbart sought the use of something completely different.

Materials and methods
ProKinetic Insole, Solemate.(ProKinetic Insoles by Posture Dynamics, 325 Washington St. NE., #431, Olympia, WA 98501, 888- 790- 4100, International: 360- 459- 2153, fax: 360- 754- 5206, email info@posturedynamics.com) Posture Assessment. A foot weight-bearing

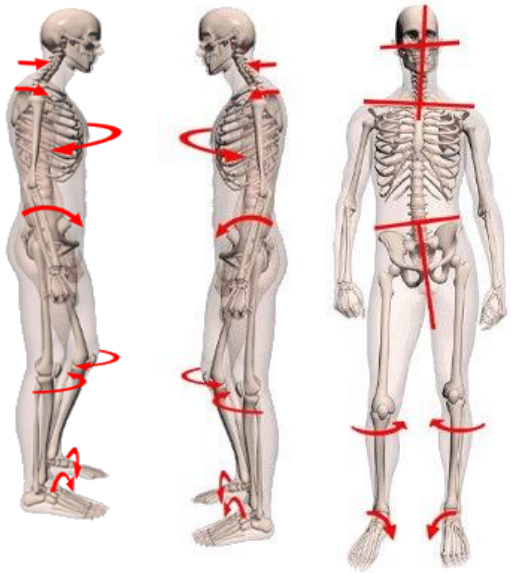
assessment with a 4 to 6 inch knee bend. Applied Kinesiology muscle testing in both nonweightbearing and weight-bearing. Gait testing in both nonweightbearing and weight-bearing. Follow-up testing with patients. Patient feedback after using the posture control inserts.

Results

Patient compliance is excellent. Prokinetic insoles can fit easily into any shoe. A version known as a solemate can be used with high heel shoes, sandals and flip-flops. Patients that have had difficulty walking for years can now walk without pain. Individuals with Morton's Neuroma have experienced a resolution. Runners experiencing stress fractures are no longer experiencing this debilitating injury. The human body was designed to move and indeed moving becomes more fluid and balanced.

Discussion

Posture analysis, TS-line palpation and gait evaluation have all long been the gold standard in Applied Kinesiology Clinical practice. After completing this examination where does the doctor go from there? When you have cracks in the ceiling and around your doors there's a problem with the foundation. Never underestimate the connection between the foot and posture. Doctors often overlook the importance of the foot that may be the cause all of the cracks above. The enhancement of foot mechanics can translate into award-winning postural improvements. Those postural improvements will convert to maximum musculoskeletal pain reduction, improved sensory function of mechanoreceptors, maximize the body's proprioception and restore proper myofascial fuction. Approximately 80% of the patients seen in clinical practice suffer from some sort of foot dysfunction. Standing and walking simply aggravates their symptoms. Addressing the cause of their symptoms will allow them to increase physical activity and productivity.

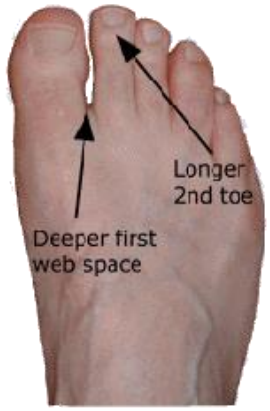


"Bio-implosion graphic 1

Far too often the medical profession overlooks the importance of the foot in connection with musculoskeletal problems. Doctors using Applied Kinesiology are familiar with the term pronation, but may not be aware that there are two kinds of pronation. There is the good pronation that is purposefully directed from the hips to unlock the foot in preparation for the heel to strike the ground allowing the foot to act like a cushion upon impact with the ground. Then there is the bad type of pronation or hyper-pronation that has its origin in the skeletal structure of the foot. It causes the longitudinal arch to collapse and the ankle to roll medial when the foot becomes weight-bearing. Hyper-pronation will cause internal rotation of the lower extremities where the left foot typically hyper-pronates more than the right. This asymmetrical internal rotation of the lower legs typically causes the left innominate bone to be pulled forward and down more than the right, creating a tilted pelvis and a functional leg length discrepancy. Foot dysfunction is transferred up through the body creating postural distortions. The thoracic cage tends to twist counterclockwise, the left shoulder is usually protracted more than the right and the right shoulder droops. In the skull the maxilla moves anteriorly creating a kind of overbite. This gravity induced collapse is known by the term "bio-implosion" and its impact on health can be significant. The term "bio-implosion" was coined by Dr. Brian Rothbart in July 1994 in an article that was published in "The American Journal of Pain Management," entitled "The Innovative Mechanical Approach to Treating Chronic Knee Pain: Bio-implosion Model." "Bio-implosion" is a postural distortion which begins in the feet and transfers up through the entire body.

"Bio implosion" is visualized as:
forward rotation of the hips and associated sway back (lordosis)
forward rotation and rounding of the shoulders (kyphosis)
head forward posture

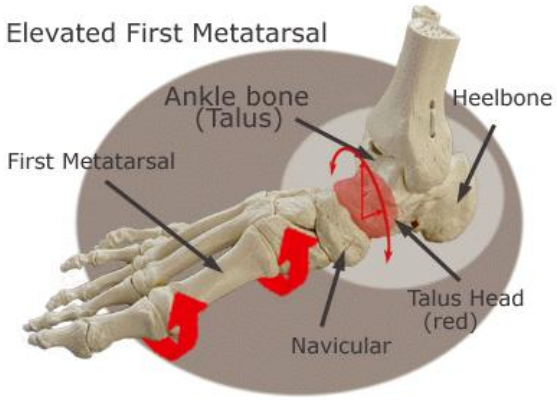
This postural distortion places the ankles, knees, hips, back and neck in a maligned position resulting in an uneven wear pattern within these joints much like the wear on tires on a car that needs a good alignment.



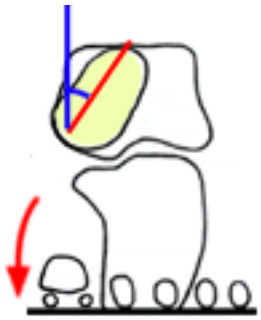
Morton's foot is a major source and instigator of musculoskeletal dysfunction and pain. It is easy to spot on the barefoot patient. So often the doctor sees the elongated second toe and sometimes the third. The problem lies in the elevated first metatarsal. This is what Dr. Rothbart called **Primus Metatursus Elvatus**. Dr. Morton referred to this as hypermobility. It is thought to be an elevated first metatarsal head.

The elevated first metatarsal is the cause of the prevalence of forefoot varum. Once the doctor can recognize the first elevated metatarsal, the ramifications of this concept will be understood. When the foot is placed in a neutral position the first metatarsal elevates. When the foot is released from this neutral position the first metatarsal and big toe must travel down to become weight-bearing. When this happens the arch appears to collapse and the ankle rolls in and the leg internally rotates.

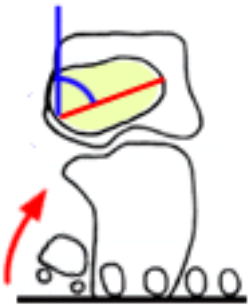
Invariably the cause of over-pronation is the elevated first metatarsal. Hyper-pronation, the flattening of the arches when the ankles roll in is far to often simply labeled "fallen arches." When the condition has a name, the solution follows. So when something has fallen, prop it up with an arch support, right? Arch supports may fix the problem, but only in a static position.



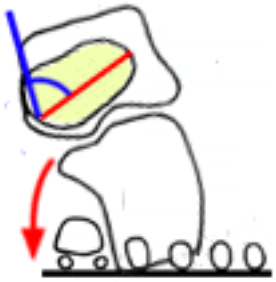
The elevated first metatarsal does not participate in weight-bearing at the right time during the gait cycle. In the diagram above one can see that the first metatarsal is connected through to the cuneiform, next the navicular, then to the head of the talus. Cadaver studies have confirmed that the head of the talus can vary has much as 20° from person-to-person. It is the angle of head of the talus that sets the position of the first metatarsal and big toe.



Normal anatomical position of the Talus.



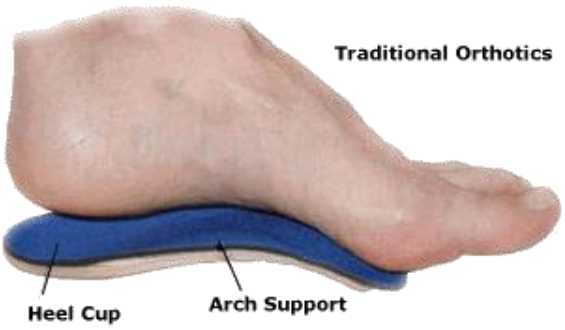
Talus orientation in the majority of people that pronate.



The first metatarsal eventually makes contact with the ground, however in the process it collapses the arch and tilts the heel and ankle in word, hyper-pronation

The brain and the body do not like hyper-pronation. This unnatural torquing of the lower extremities sends signals into the nervous system to compensate. Muscles in the lower extremity brace in an effort to supinate or roll the feet outward so to avoid the collapse of the arch. Lower extremity muscles such as the tibialis anterior are overworked in an attempt to prevent the arch of the foot from collapsing. The tension on the muscle affects the spindle cells and the Golgi tendons which in turn sends out aberrant proprioceptive signals initiating dysfunction between other synergist and antagonist muscles.

Posture and position rely heavily on proprioception. The body is always sensing position, velocity and tension. The feet play a vital role in movement and balance. A dysfunctional foot distorts the signals which effects both our gait and our posture increasing the risk of falls and injuries. The late loading of the first metacarpal during the gait cycle after the heel lifts deprives the nervous system of the necessary signals it needs to establish both appropriate balance and posture.



Stepping off the orthotic

The standard orthotic is simply an arch support and a heel cup. It works only when the foot is static. People do not just stand still. They walk, run, jump, twist and bend so their feet are naturally moving as well. Any time one's weight is on the ball of the foot the orthotic simply is not engaged, therefore it is functionally ineffective. An orthotic immobilizes the foot in general by bracing the foot in a static position. This lack of movement disrupts the biomechanics of the foot. Restricting motion begins to weaken the muscles and ligaments of the foot similar to a limb when placed in a cast for a period of time. Consequently, the structures of the foot weaken and atrophy. The foot becomes more dysfunctional. Often the victims can no longer walk barefooted.

Janet Travell had a unique solution.

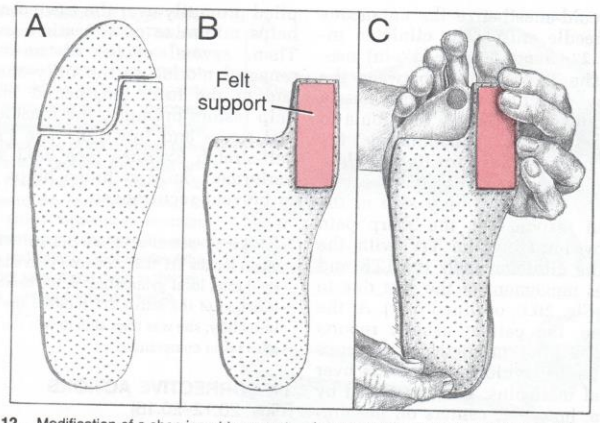


Figure 20.12. Modification of a shoe insert to correct for the Morton foot structure (short first, long second metatarsal bones) by padding under the first metatarsal head. *A*, removal of toe portion of the sole insert to extend support only under the first metatarsal head. The lateral side of the sole insert should not extend under the second metatarsal head, and the insert should reach to the end of the first metatarsal bone (crease of the big toe). *B*, addition of an adhesive felt support beneath head of the first metatarsal. *C*, proper fit of the insert against the sole of the foot; the pad is located beneath only the first metatarsal head. The *solid circle* marks the head of the second metatarsal bone in the midline of the foot, which must *not* be supported by the first metatarsal pad.

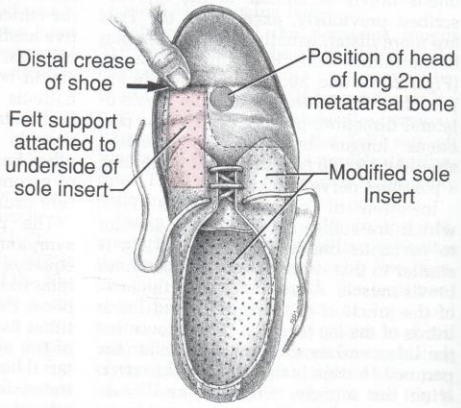


Figure 20.13. Proper placement of a modified sole insert inside the shoe to compensate for the Morton foot structure (short first, long second metatarsal bones). The end of the first metatarsal pad *reaches precisely* to the distal crease of the shoe, as identified by the *arrow and thumbnail*. The felt pad can be fixed to the underside of a foam sole insert cut as shown. The *solid circle* in the middle of the sole at the distal crease locates the head of the long second metatarsal bone. The felt pad transfers weight from the second to the first metatarsal head, placing the foot on a tripod base, instead of on a straight-line base through the second metatarsal.

PART 3

(¾ in) beyond the metatarsophalangeal joint (Fig. 20.12*C*). The lateral part of the cut insert should end just short of the lateral four metatarsal heads so that it adds no support beneath these bones when placed in the shoe.

The felt pad can be attached to the under side of the sole insert (Fig. 20.12*B*) through the use of either adhesive felt or an additional adhesive such as double-sticky carpet tape. The felt pad should cover the area under the head of the first metatar-

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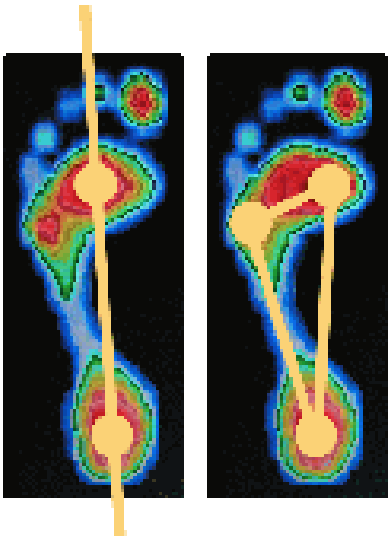
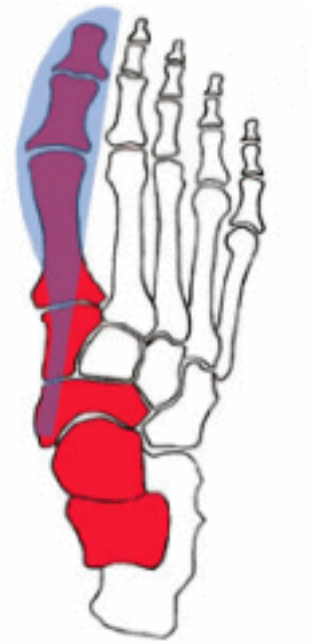


Unstable Stable

The first metatarsal is the strongest bone in the forefoot. Unfortunately and for several reasons most people do not bear their weight on the first metatarsal like the foot was designed. Their weight is carried on the second or third metatarsal. In an exaggerated way it is like you are walking on a pair of ice skates, some people may tilt out or supinate while others may tilt in or pronate. The foot and particularly the big toe and first metatarsal are major sources of sensory input providing the proprioception that facilitates balance and gait. The shim underneath the first metatarsal is an appropriate correction to restore proper foot function. The wedge resets foot biomechanics, sensory and motor proprioception, signaling the muscles to push back against the ground to balance the body and engage in gait dynamics. The contact of the first metatarsal with the ground is now correct, the big toe is doing its job. The small wedges are providing the proper mechanoreceptor input facilitating and inhibiting muscles, initiating optimal gait patterns and normal postural tone. The foot functions more like a tripod providing increased stability. The bodyweight is no longer being forced onto the second and third metatarsal heads, thus reducing the forces on those bones that may cause both Morton's Neuromas and stress fractures. Lower leg muscles that once braced against abnormal foot distortions are free to relax eliminating shin splints and bringing relief to tired calf muscles. The foot becomes stronger and healthier. Tight IT bands are a thing of the past. Even the cranial bones will shift into proper alignment.



The simple wedge works like a timing device. Your nervous system and your muscles do the rest.

Placing the correct size shim under the first metatarsal restores its biomechanics. Bringing balance to the body, like shimming a door creates balance. The shim works through the entire gait

cycle while the ball of the foot is on the ground till the final toe off. The patient is no longer walking on an ice skate but on a stable tripod.

Working through the full gait cycle

AK Doctors from experience know every patient will compensate differently to faulty foot mechanics. Their strength, their activity level, their age, previous injuries, past surgeries and their current level of pain will all play a role in how their muscles will try to compensate as they engage in activity. By inspecting the wear on the bottom of the patient's shoes doctors can determine how the patient is compensating for their faulty foot mechanics.

WEAR PATTERN #1

Some people are releasers. Their shoes will wear the most on the medial edge from the heel to the big toe. These patients release their leg muscles to compensate, meaning their knees naturally move inward, the ankles collapse, the hips rotate forward, the chest collapses and the shoulders and head lean forward. They walk with the toes pointing out. Their joints are badly misaligned. Classic symptoms include knee, hip and low back pain, plantar fasciitis, tight IT bands and indeed tired painful feet.

WEAR PATTERN #2

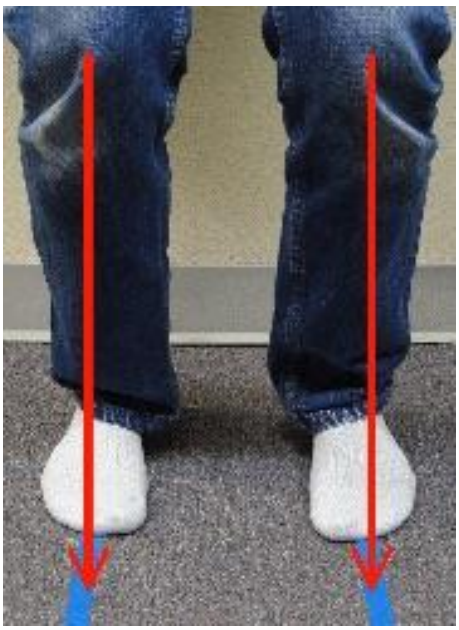
Some people are bracers. These patients are bracing against the collapse of the arch. They have a lateral heel strike which is normal for the majority of people. However if the heel strike is unusually hard with the wear pattern tracking forward to the little toes, the patient is compensating by staying on the outside of their foot. Approximately 60% of people follow this pattern. These people instead of rolling to the inside on the foot, they push off with their little toes. This pattern may cause them to be prone to neuromas and stress fractures. Their feet will point straightforward or slightly inward when they walk. The price they pay for better posture is tight sore overworked calf muscles, sore heals, tired feet and shin splints with frequent ankle injures.

WEAR PATTERN #3

In general most people aren't strong enough to successfully brace against the structural collapse of the foot, so these patients may start out with an outside heel strike and eventually give in to their ankle rolling inward has their heels lift off and their feet move forward in toe off. For these patients if the problem hasn't been corrected by the time they turn 40 they will be suffering from chronic joint and muscle pain.

At this point the Doctor should have sufficient knowledge of dysfunctional foot biomechanics and why placing a shim under the first metatarsal can be so beneficial. Doctors can start by doing a self evaluation. Begin by placing your bare feet on a hard surface approximately hip width apart. Make sure that your toes are pointing forward and that your feet are parallel to each other. Lean forward just enough to shift your weight on the balls of your feet. Next bend at the knees so your hips drop straight down approximately 4 to 6 inches while keeping your body in an upright position. Keep your heels on the floor and keep your knees straightforward over the middle of your feet. The middle of the patella

should align with your third toe. Now sensing your weight underneath your feet move your knees medially or laterally and stop when you feel weight bearing pressure at the base of your first metatarsal.



If your foot mechanics are working normally the center of your knee should line up over the middle of your foot when you feel your first metatarsal experiencing weight-bearing. It is crucial that the base of the first metatarsal be on the ground. Sense closely how far your knees move medially because that distance will determine the height of the shim to be placed under your first metatarsal head. If the center of your patella is over your second toe, big toe or even more medial than your big toe you will benefit greatly by using a shim. I suggest that you team up with one of your doctors friends and determine the correct height shim that best serves your foot mechanics via standard AK manual muscle testing.

Applied Kinesiology Procedures
How to use functional manual muscle testing to determine if a shim would be beneficial. There are both static and dynamic challenges.

Static challenges:
With the patient sitting test upper extremity muscles that are part of gait dynamics. I suggest latissimus dorsi and anterior deltoid. Note the results. If any of these muscles are functionally inhibited make appropriate correction. If the spindle cell challenge does not inhibit a facilitated muscle apply the appropriate therapy. Next have the patient stand in their shoes, test muscles, then barefooted on a hard surface and retest these muscles. If any one of these muscles becomes functionally inhibited the patient would then be tested for functional facilitation by placing different height shims under the first metatarsal head. A

rubber wedge can be purchased from Posture Dynamics for testing purposes. The doctor can also use the actual inserts starting with a 3.5 mm and working their way up to the 9 mm. When all the tested gait muscles remain facilitated while the patient is standing you have found the correct size shim.

Also with the patient standing you could test muscles related to posture remembering the "Bio implosion" pattern visualized as: forward rotation of the hips and associated sway back (lordosis), forward rotation and rounding of the shoulders (kyphosis) and head forward posture. Test muscles related to this postural distortion like the upper, middle and lower trapezius muscles, neck extensors and neck flexors. Note the inhibited muscles found on testing. Use a testing wedge or device that you have made placed under the first metatarsal head or the actual inserts, 3.5 mm, 6 mm and 9 mm. And retest any functionally inhibited muscle that was previously noted. If previously functionally inhibited muscles become facilitated consider the use of that size shim.

Dynamic gait testing can also be done. There are several ways that this can be accomplished. I will discuss two ways. First place the standing patient in the gait position. Shoulder flexors will be inhibited on the forward leg side and facilitated on the trailing leg side. Shoulder extensors will be inhibited on the trailing leg side and facilitated on the forward leg side. Also note that the sternocleidomastoid muscle should test inhibited on the trailing leg side while the upper trapezius muscle is inhibited on the forward leg side. Use manual muscle testing to make sure this pattern is on display. If the correct patterns are not showing retest them using the testing wedge, different shim heights or the actual inserts 3.5 mm, 6 mm and 9 mm under the first metatarsal head while the patient is in the gate position. When the correct gait patterns of muscle inhibition and facilitation are showing correctly you have found the right height shim or insert. Secondly, after testing various muscles and noting the functionally inhibited ones, you can have the patient walk with different size inserts in their shoes in the hallway of your office, then test for facilitation of all the inhibited muscles. Again the correct size will be the one that has facilitated all the previously inhibited muscles.
There are other advanced applied kinesiology techniques that can be used but they are not the topic of this paper and best left for a demonstration.

Conclusion
If the patient looks like this on posterior posture evaluation, the Doctor will need to address the patients foot or just be happy to treat the compensations patterns over and over.

The paradigm of the shim recognizes the crucial influence that the mechanoreceptors of forefoot have on the entire body. The precise placement of the correct height shim under the first metatarsal head will create a pivotal shift in one's clinical practice. The value of creating custom orthotics in order to solve a real or perceived void that exists underneath one's foot forcing it into a more desirable static position needs to be questioned. In fact it may destabilize the musculoskeletal system and in the process weaken the foot. With the addition of the shim, at long last, the first metatarsal and big toe perform the function they were designed to do. The first metatarsal is contacting the ground bearing more of the body weight. It is the strongest bone in the forefoot by design and for a reason. We doctors are now able to effectively control hyper-pronation through the complete gait cycle. With the first metatarsal and big toe working properly, the foot muscles correct either pronation or supination. With foot mechanics corrected proper gait and posture naturally follow suit. The body glides effortlessly through the inhibition and facilitation of gait dynamics. The use of the shim or big toe orthotic can be easily fitted in any type of shoe from flip-flops to sandals and even in women's high heels. The "Chi" in the meridians of the feet begins to flow smoothly like water over rocks in a stream generating more "Chi" throughout the body.

There are many conditions that can be benefited by restoring proper foot mechanics. So many that they may rival those in number helped by restoring proper function to the ileocecal valve. They include but are not limited to the following:

Poor posture
Headaches
TMJ dysfunction
Reduced lung capacity
Shallow breathing
Tight iliotibial band
Shin splints
Ankle pain
Foot pain
Morton's neuroma
Metatarsalgia
Mental fatigue
Shoulder pain
Neck pain
Low back pain
SI joint pain
Knee pain
Hip pain
Leg cramps
Falling arches
Hammer toes
Genu Valgum
Bunions
Achilles tendonitis
Plantar fasciitis
Chondromalacia patella
Anxiety

Anxiety one may say, how on earth can anxiety be connected to your feet? Dr. Leon Chaitow in his book, "Multidisciplinary Approaches to Breathing Pattern Disorders," published by Churchhill Livingstone describes how bad posture creates breathing pattern disorders and can be linked to a carbon dioxide deficiency. This carbon dioxide deficiency created by the postural distortion reduces the effective exchange of oxygen between our blood and tissues including the brain causing one to feel faint and anxious. I found this interesting considering the Applied Kinesiology demonstration involving rebreathing into a paper bag as a screen test for dysfunction of the citric acid cycle. Can the foot influence this metabolic process?

Dr. Rothbart concluded that the kinetic technology (wedge) did not act as a passive foot support like traditional arch supports, but rather an active one. Based on his initial static observations he tried to build the ground up under the first metatarsal head when held in the weight-bearing subtalar neutral position. He quickly discovered that concept was unworkable because it threw the patient off balance. As a result of his clinical observations he started to experiment with lesser height shims and discovered that the height of the wedge could be roughly 1/3 the amount of the elevation of the first metatarsal head from the floor when the foot was held in the subtalar neutral posture. The wedge is working actively to stimulate the mechanoreceptors of the forefoot in turn activating the muscles of the foot reducing hyperpronation. This is thought to be do to a change in gait cycle timing when the first metatarsal head and the big toe first senses ground contact.

Regardless of the therapeutic techniques the doctor is using whether it be, structural or myofascial manipulation, movement and exercise modifications, there is little doubt that a stable foot foundation will improve posture and body dynamics enhancing any therapeutics. Whether the doctor does a full postural analysis, tracks down the functionally inhibited muscles from the TS-line, most likely if the doctor looks, he will find his patient has an elevated first metatarsal, unstable feet and a compensating posture and gait. The first metatarsal shim works well for both pronators and supinators. It is effective for children, adults, athletes and seniors. The shim can be used in a variety of shoes types: athletic shoes, flip-flops, sandals and even high heels. 95% of your patients will notice a positive change in their symptoms over a 2 to 3 week period using this technology on a daily basis.

From a practical perspective, it is clear that hyper-pronation is reduced significantly by visual observation alone. It appears to be reduced on average by 70% based on a sample of over 5000 patients. Over 95% responded very favorably to the kinetic technology. Patients find the technology comfortable and easy to use. This being said patient compliance is high. Since this is a proprioceptive fix rather than simply a support prop, the corrective dimensions of the shim are very small making them very comfortable to wear. The kinetic technology can eliminate the common compensation patterns we see in clinical practice. A smooth gait is a major factor in longevity for anyone wishing to live to 100 years and beyond. Last of all, we do not want our patients to walk back into their symptoms. Walking does a body good.

Acknowledgments
Melady and Bjorn Svae

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Acknowledgments
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Applied Kinesiology; the Influence of the Gastrointestinal Tract Complicating a Patient's Outcomes: A Case Study

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Abstract

In an aging population of baby boomers, the gastroenterological (GI) influence on the patient's over all health as well as their treatment outcomes, weather in the allopathic or nonallopathic model, is a growing area of interest. This case study looks at an aging male's low back pain with neurological symptoms and the influence of Applied Kinesiology (AK) diagnosed hiatal hernia (HH), ileocecal valve (ICV) dysfunction, and deficiency of digestive enzymes to support the neurological fuel needed such as glucose delivery, essential fatty acid (EFA) absorption, oxygen delivery, as well as possibly affecting methyl donor delivery as well. A more multifactorial approach and his change in suggested prognosis of "he would have to live with it" to a more positive outcome. Using functional diagnostic and corrective procedures found in AK, chiropractic manipulative care, nutritional supportive care, and clinical neurological exercises, the patient was able to make a significant meaningful recovery. The conclusion drawn is the fact that patient care can not be a single system approach as well as supportive measures in the nonallopathic approach can make appreciable changes in the patient's outcomes and should be further investigated.

Key Indexing Terms
Applied Kinesiology, Proton Pump Inhibitors (PPI), Hiatal Hernia, Ileocecal valve, Visceral Pain, Small Intestinal Bacterial Overgrowth (SIBO), Visceral Manipulation, Hypochlorhydria

Introduction

The number of patients entering into a doctor's office with only one condition occurring at a time is not a realistic expectation; thus, to treat a patient's single condition, or in this case, single chief complaint without addressing co morbidity factors is in some cases could likely be considered neglect. A few conditions that influence the over all health of an individual will be discussed. Such conditions as seen in this case include HH, hypochlorhydria, pancreatic enzyme insufficiency, and ICV syndrome or dysfunction. When looking at the HH condition, there are four major types of HH.[27] In this case we are looking at Type 1 sliding HH which represents 95% of all diagnosed HHs.[27] The paper assumes supportive measures for non-surgical cases at this time, but it has been shown that the size or type of hiatal hernia has no correlation with the severity of symptoms.[6] The case explores other factors such as ICV dysfunction as well and the combination of HH and ICV syndromes

and their influence on changes in the GI tract such as hypochlorhydria, slow motility, pancreatic insufficiency, to name a few, which set up the GI tract for SIBO conditions or changes to the microbiota.[4,9, 14,21,27]

Also looked at is the influence of motor function changes seen with visceral pain which has been shown to change the motor cortex as well as cerebellar purkinje cell firing along with many other areas of the brain and central nervous system.[2,9,13,14,20] The importance of looking in the multifactorial direction is to not only improve outcomes but also attempt to reduce risk factors short and long term.

Currently in the allopathic model HH treatment, if symptomatic, including sliding HH, is surgical intervention along with medication such as proton pump inhibitors depending on research and author.[11,27] Complications as well as return of symptoms are frequently seen with this correction.[10,11,17,23,27] A few mentioned complications were return of symptoms, mesh migration with esophageal/gastric ulceration and perforation, and much less reported is death due to direct heart complications.[10,11,17,23,27] Half of the cases when done laparoscopically reported need for continued medication use such as PPI's.[11,27] A review of 207 studies has suggested long term effects of PPI's can have deleterious effects such as causing "endothelial dysfunction, hypomagnesemia, drug interactions, reduced absorption, of selected nutrients, increased gastric microbiota and SIBO, reduced immune response , tubular-interstitial inflammation, increased bone turnover, accumulation of amyloid in the brain".[5,12] If only concentrating on one complicating aspect of PPI use, one would see the correlation of long term use leads to loss of bone density putting an aging population at unnecessary risk.[1,5,7,8,12,16]

ICV dysfunction as well, has been linked to chronic inflammatory conditions such as SIBO.[15,19] Normal function of the ICV is to keep the contents of the cecum from retrograde movement into the ileum.[24] Loss of tone of the ICV has been shown to decrease pressure in the cecum with normal peristalsis allowing contents to regurgitate back into the ileum along with it bacterial contents as well.

AK has taught how to deal with HH and ICV syndromes non-invasively reducing the need for surgical intervention and medication.[26,28,29,30] Panagopoulos et al[18] and Tamer et al[22] have demonstrated that noninvasive manual visceral manipulation and osteopathic treatment was effective in improving outcomes and pain levels as well as function in patients with low back pain. Thus, the aim of this paper is to further support noninvasive means to improve patient outcomes.

Methods

The patient presented with low back pain as his chief complaint and reason for office visit. The pain was described as deep dull ache with periods of sharp pain. The patient pointed to the L5 area as well as right sacroiliac joint (SIJ). He reported further exacerbation as the day progressed. Relieved with heat, cold, rest, and pain medications. He stated in the consultation a history of arthritis including the low back. Degenerative disc disease was also included. The last time that he had attempted to deal with the pain was 2013 and at that point had received a total of 5 facet and sacroiliac joint injections but the patient was

not able to remember the levels of the lumbar spine he received injections and or the medication. MRI was brought in for review. The MRI reported previous disc fusion at L4/5. The L2/3 level demonstrated slight disc bulging and mild left posterior lateral disc protrusion with mild left sided foraminal narrowing. L3/4 disc increased moderate-sized right posterior lateral disc protrusion with moderate right-sided foraminal narrowing. Mild canal stenosis now seen at this level with bilateral facet arthritis. L4/5 left posterior lateral disc protrusion and small right posterior lateral disc protrusion with slight right-sided foraminal stenosis. L5/S1 demonstrated no canal stenosis or foraminal narrowing. He notes no lasting improvement and continues to feel pain and feels the condition is deteriorating as he had started having issues walking and loss of balance. At the time of the consultation he had decreased activities including recreational as well as starting to affect his farming. He noted issues with urination with dribbling prior to the injections. Remaining history included "low blood sugar", sleep apnea, nervousness, gout, high triglycerides, right ankle pain, headache, midback pain, shoulder pain, wrist pain and easily out of breath. The patient stated the "neurology" doctor he was seeing for the injections told him there was too much permeant nerve damage in his back, and nothing could be done, and he was released at that point. As time went on pain progression persisted.

His family history consisted of his father dealing with gout as well.

Past surgical history consisted of Vasectomy, angioplasty, cholecystectomy, rotator cuff surgery on the right, appendectomy, and lumbar spine surgery.

Current medications and nutrition were acetaminophen, allopurinol, niacin, pravastatin, omeprazole, and ropinirole.

There is use of alcohol weekly and caffeine. Former smoker.

Physical examination
Age: 67 yo
Height: 5'7"
Weight: 210 lbs
Blood pressure: 141/92 right arm in sitting position
Pulse: 64 BPM

The patient's low back range of motion (ROM) was decreased in all ROM including 45˚ in flexion, 15˚ in extension, 10˚ bilaterally in lateral flexion, and 20˚ in right rotation, and 30˚ in left rotation. ROM exacerbating pain were bilateral rotation, right lateral bending, and extension at the original chief complaint (CC) of L5 and right SIJ. The lumbar spine flexors were 3/5 on oxford muscle grading system with the remaining ROM 5/5. Bilateral psoas weakness of 4/5 was present, as well as rectus femoris on the right was 4/5 and left 5/5. Hip adductors were 5/5 bilaterally. The gluteus maximus was right 4/5 and left 5/5. Right hamstring as a group with no rotation of the femur was 4/5 on the right and 5/5 on the left. The extensor hallucis longus muscles were 5/5 bilaterally.

Gastrointestinal: The patient had tenderness over the cecum. There was no rebound tenderness present. Bowel sounds were normal to decreased. There was evidence of HH or disfunction of the cardiac sphincter with increased hypertonicity of the diaphragm including tenderness and decreased chest expansion, bilateral psoas 4/5 and tender, bilateral hamstrings 4/5 in supine, and challenge weakness of the stomach superiorly.[26,28,29,30] Patient demonstrated a positive Murphy's sign for the gall bladder even though the Gall bladder was not present. The patient displays a positive Ripple's point. History of cholecystectomy without lifestyle modification instructions, type of nutritional or supplemental support.

Palpation: Low back muscles were tender with edema and swelling. Muscles included in palpation were the paralumbar mm, iliopsoas mm, gluteus medias bilaterally. There was restriction in the L1, L2, SIJ on the left and SIJ on the right.

Orthopedic testing
Bechterew's Sitting test: Positive bilaterally in the area of CC
Kemp's Test: Positive bilaterally but left SI joint pressure elicits pain in the CC
Valsalva's Test: Negative
Braggard's Sign: Positive on the right in the entire leg into the L5 area.
Patrick's FABERE (lumbar) Test: negative bilaterally
Straight Leg Raising Test: Positive bilaterally at 30˚ on the right and 50˚ on the left but again, felt at the L5 area and right SIJ
Milgram's Test: Positive for aggravation of area of CC and not able to fully lift and hold.
Yeoman's Test: Positive bilaterally at the area of CC

Neurological Examination
Observation: The patient was able walk on the heels and toes but lacking coordination to fully do so without holding on to practitioner. Strength is there.
Gait: Shuffle, wide, and guarded. The right leg would not extend at the hip and only catch up to the left leg never going anterior to the coronal plane. He is not able to put the right leg in front of the body in smooth stride.

Cranial nerves I-XII were intact. Pupil were round, regular, equal, and reacted to light and accommodated appropriately. There was no evidence of papilledema. The patient was alert and fully oriented. Affect appeared appropriate to the situation. Higher intellectual functions were normal.

Pathological reflexes not present.

Romberg's test: negative, no cerebellar sway.
Dysdiadochokinesia Testing: Positive with the right hand when tested with rapid alternating movements.

Reflexes:

Bicep: +2 bilaterally

Brachioradialis: +2 bilaterally
Patellar: +2 bilaterally
Achilles: +1 bilaterally

Dermatomes

L4: Pinwheel testing on the left demonstrated decreased sensation when compared to the right
L5: Pinwheel testing on the left demonstrated decreased sensation when compared to the right
Light touch: Abnormal and decreased on the left L4 dermatome
Hot/Cold: intact
Point discrimination: within normal limits upper and lower extremity
Heel to shin (with tracing): intact and within normal limits

Treatment
On the first treatment no manipulation was performed. As the patient was diagnosed with permanent nerve damage from the low back but his neurological exam demonstrated otherwise with Normal DTR's for his age as well as having the strength to go up on the toes and heels along with remaining normal findings from the lumbar spine. Reduction of the HH and ICV was performed as taught in many AK texts.[26,28,29,30] The patient's gait was immediately improved from direct reduction of both issues. Multiple joints in the lower extremities underwent general manipulation for afferentation purposes such as the toes, foot and ankles bones. He immediately noted feeling better and able to stand taller. His gait had returned to more of a normal pattern with the ability to take a forward step with the right leg. The low back pain was decreased as well. At that point the patient was also given home care for dealing with symptoms of hypoglycemia such as increased protein and eating nearly every two hours small amounts to keep his glucose level.

The patient lost some of the pain relief after sitting in a car and driving 5 hours each way to Chicago and back over a weekend due to family emergency but was able to maintain the improved gait. On the subsequent visits the patients low back condition was directly dealt with findings of Respiratory ilium as described by Duffy[28] with hamstring 4/5 in the clear with exhalation and returned to 5/5 with exhale and therapy localization of the right SIJ. The patient also displayed a category I lesion right and category II posterior inferior ilium right.[26,28,29,30] The upper cervical spine demonstrated fixations influencing the psoas and gluteus maximus with occiput/C1 fixation and C1/2 fixation respectively. Fixation was also noted at the right SI joint on the sacrum with ipsilateral neck extensors testing 4/5 in the clear. Cranial fault of the temporal bulge also presents against challenge along with right scalene weakness. IVD challenge was positive at L2/3 was present with the challenge being apart at the spinous process of the two vertebrae and negated the weakness with inspiration. Fixation of the L5/S1 was also present with bilateral Teres mm testing 4/5 even though usually seen with just one-sided weakness.[26,28,29,30] His HH did not return on the second visit but subsequent visit it would return. The ICV was persistent for many visits.

Besides structural treatment, the patient was supported with nutritional supplementation and dietary changes with the goal of supporting normal physiology, decreasing inflammation increasing the likelihood of nourishing the central nervous system. The patient reported gall bladder removal which he was supported with diet modification and eating more healthy fats such as fish, avocado, nuts, coconut oil, and non-heated olive oil to name a few. He was also given cholacol from standard process which is a bile salt containing nutritional supplement that would help with emulsification and absorption of fats. The stomach and small intestine alarm points therapy localized in the clear and also would test weak with parasympathetic type stimulation (light rubbing of the point) of the points as well.[30] The points were negated with gustatory testing of the nutrients with the betaine HCL containing product negating the stomach alarm and broad spectrum pancreatic enzymes negating the small intestine alarm points.[26,28,29,30] Chapman reflex points were also treated and given as home care for the patient.[26,28,29,30] Along with nutrition supplementation, the patient was also given dietary changes which reduced his carbohydrate and refined carbohydrate intake as well as had the patient eat at more frequent intervals as described in Dr. Kharrazian's book on thyroid conditions where he discusses reactive hypoglycemia.[25] When testing the long head of the bicep the patient was 4/5 bilaterally. Stimulation of the pancreatic visceral referred pain (VRP) area using nociceptive type stimulation, such as pinching the area, negated the weakness as did the gustatory test with Proglyco SP which is a supplement geared toward hypoglycemic patients and contained Vitamin A (as mixed carotenoids), Vitamin C (as ascorbic acid), Vitamin D (as cholecalciferol), Vitamin E (as mixed tocopherols), Vitamin K (as phytonadione), Thiamin (as thiamin HCI), Riboflavin (as riboflavin 5'-phosphate), Niacin (as niacinamide), Vitamin B6 (as pyridoxal 5'-phosphate), Folate (as (6S)-5-methyltetrahydrofolic acid, glucosamine salt (Quatrefolic®)), Vitamin B12 (as methylcobalamin), Pantothenic Acid (as d-calcium pantothenate), Magnesium (as magnesium citrate), Zinc (as zinc picolinate), Copper (as copper gluconate), Manganese (as manganese gluconate), Chromium (as chromium picolinate), Adrenal (bovine), Choline (as choline bitartrate), Liver (bovine), Pancreas (bovine), Pituitary (bovine), Inositol Carnitine (as L-carnitine fumarate), CoQ10 (as ubiquinone), Vanadium (as vanadium amino acid chelate) .[25,26,28,29,30] The patient also reported a history of gout which he had taken the medication allopurinol in the past with some success. Thus, when the patient noted having return of gout symptoms similar to the past, he was tested again with gustatory reflex against the positive TL of the area of pain in the foot which was negated with the Apex product purozyme an enzyme based formula to break down purines containing enzymes as well as: Aloe Vera extract (leaf), Milk Thistle extract (seed), Red Clover extract (flower), Burdock (root), White Willow (bark), Alfalfa extract (leaf), Sarsaparilla extract (root),Dandelion (root), Yellow Dock (root),Cayenne Pepper (fruit). The patient reported relief of the area within three days of the administration of the product. The patient was then placed on a smaller maintenance dose of the product.

Results

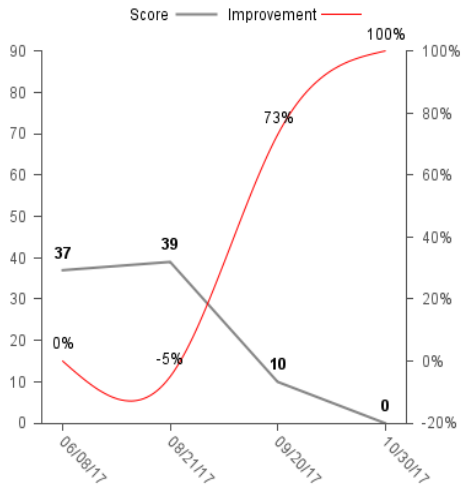
After a few minor set-backs due to travel and stress, the patient responded quite well. His gate returned to nearly normal and it was reported by his wife that he had not walked that well in as long as she could remember. He was able to take a full stride with the right leg and no longer having balance issues. The patient reported being able t return to his normal

activities of daily living as well. One of which included picking up pecans which he had previously had to give up due to low back pain and loss of balance. His light touch dermatomal abnormalities were WNL at the conclusion as well as near full ranges of motion with no pain in the lumbar spine. His gait had returned to normal as well. Reflexes remain the same. The second MRI results show very similar findings with minimal changes but do report the L4/5 disc protrusion was no longer seen on the left. The patients out outcomes as reported by questionnaire with the Pain disability questionnaire and the Lumbar Bournemouth were as follows:

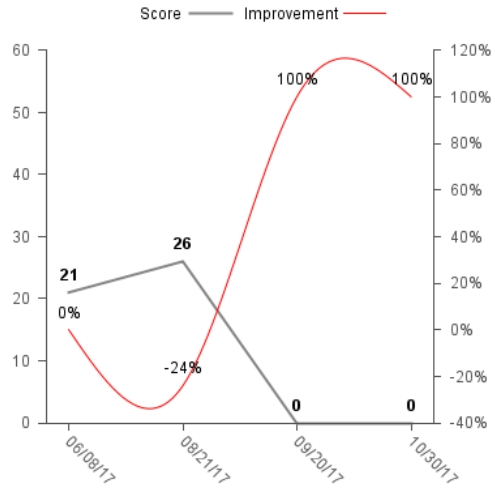
Pain Disability Questionnaire

Functional Status Component: 0/90 (0% ratio)
Psychosocial Status Component: 0/60 (0% ratio)
Total PDQ Score: 0/150 (0% ratio)
Patient's progress since the initial assessment is illustrated by the following graphs:

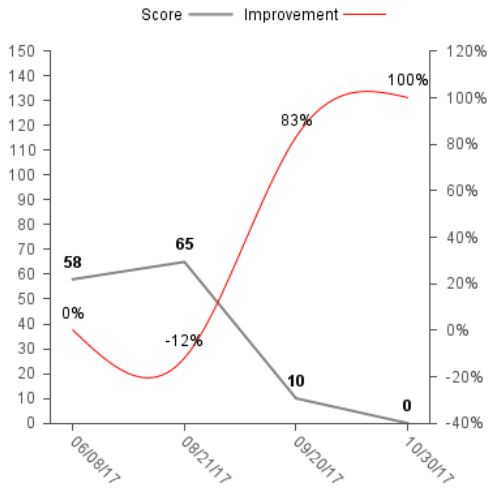
Functional Status Component



Psychosocial Status Component



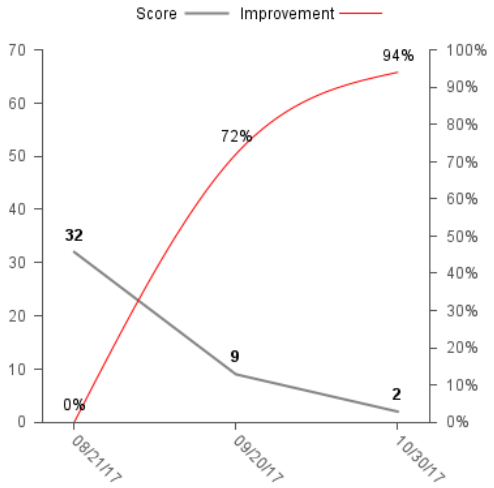
Total PDQ Score



The Bournemouth Questionnaire

Total Score: 2, Percentage: 3%

Patient's progress since the initial assessment is illustrated by the following graph:



Discussion

The patient was happy with care and continues to do well. There were occasional small flare ups with old eating habits and return of the ICV or HH. Overall, the concept is simple and maybe it is the possibility of too many medical specialties and the loss of how the body interacts with itself and the profound changes that can occur when properly supported and given a chance. In this case the patient made a profound recovery and can continue with a more meaningful life and better quality.

Limitations of the case include compliance and patient reporting of changes. Overall though, the case was straight forward and the patients immediate change in his gait on the first reduction of the HH was evidence enough for further investigation and support of internal physiology and fuel delivery. The patient continues to do better and better with minimal to no set-backs. After this approach and treatment as well as the patient responded, a clinical neurological exam was also administered for investigation for central rehabilitation exercises for further improvement now that it was established his fuel delivery had been improved. As previously stated in his treatment, he would be exhausted from simple tasks including riding in the car; thus, no extended neurological exam was performed in the beginning as to avoid overwhelming the patient. Even though outside of the scope of this article, the neurological testing needed to be mentioned due to fuel delivery concept and the fact the patient continues to do much better doing tasks that would have previously exhausted him. I strongly believe this would not be the case had he only been receiving chiropractic manipulative therapy, physical therapeutic modalities, and functional supportive nutritional changes.

Conclusion

In conclusion, the author's belief that outcomes can significantly be facilitated in more cases than not with investigation into such comorbidity factors that can interfere with fuel delivery such as dysglycemia, HH, ICV dysfunction, hypochlorhydria, and pancreatic enzyme deficiency just to name a few. Further evaluation and testing would be beneficial to support improved outcome-based treatment.

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Balancing Hormone Axes

Dale Schusterman, D.C., DIBAK, DABCN

Abstract

This paper will show how to reset functional imbalances in the major hormonal axes: hypothalamus—pituitary—adrenal, hypothalamus—pituitary—thyroid, and hypothalamus—pituitary—gonadal.

Key Indexing Terms
Hypothalamus, Pituitary, Adrenal, Thyroid, Gonadal

Discussion

AK practitioners have been working with hormone patterns since the early days of our specialty when the links were made between muscles and organs. There are specific physical indicators that accompany thyroid, adrenal and gonadal dysregulation, and most AK doctors address at least the functional aspect of endocrine disruption, if not more in depth balancing with nutritional and lifestyle recommendations, including any indicated medical referral.

There are numerous ways to evaluate hormonal imbalances.

- Biochemical—labs (blood, saliva, urine)
- Signs and symptoms—Rogoff's sign, brittle nails, Achilles tendon reflex, etc.
- Muscle organ correspondences—sartorius-gracilis, teres minor-thyroid, etc.
- Muscle testing with hormone test vials

Each of these methods has its value and they need to be correlated with each other to arrive at a diagnostic conclusion.

The following technique is simple to do and is one of those procedures that 'makes sense' when you think about it. In this paper we are going to work with hormone test vials to evaluate the muscle testing response to placing them on the body under a magnet. We often talk about the HPA axis, but then only treat the cortisol or adrenal aspect of the axis. Typically, we use a singular hormone-testing vial in order to evaluate the muscle response. For instance, some people will demonstrate muscle inhibition to a vial of cortisol that has been placed on the body under a magnet. Sometimes, the cortisol vial may facilitate a specific muscle inhibition pattern. In other circumstances, the cortisol under the magnet may cause over-facilitation of a muscle so that autogenic inhibition is blocked (pinching the spindle cells of the muscle does not produce the expected inhibition). It is quite common to find people with high cortisol, who are under a lot of stress, demonstrating over facilitation of the sartorius muscles with the addition of the cortisol vial.

Each of these situations has different implications for treatment and should be familiar to AK doctors. For instance, doing Injury Recall Technique (IRT) with the cortisol under the

magnet and the patient touching the Chapman's Reflexes (CR) to the sartorius can be very beneficial.

Hormone Axes

A hormone axis or feedback loop consists of the hypothalamus, pituitary and end organ hormones. The HPA axis would include CRH (corticotropin-releasing hormone), ACTH and cortisol. This targets the entire signaling pathway of the hypothalamus, pituitary, and adrenal cortex. NE (norepinephrine) may also be added to this axis. When these 3 or 4 vials are all placed under a magnet on the body, it provides a more complete evaluation of the adrenal system. Many times you will find that cortisol by itself will not inhibit a strong muscle, but the 3 HPA axis vials will reveal an underlying imbalance. Even if you have performed some therapy (IRT, CR) to restore balance to a response to cortisol, you will usually find that the entire axis needs to be addressed. You get a more comprehensive diagnostic challenge and a much better treatment when you work with the entire hormone axis.

Here are the major hormone axes. They include the hypothalamus, pituitary and end organ hormones:

HPA Axis	CRH—ACTH—Cortisol
HPT Axis	TRH—TSH—T3—T4
HPG-Ovary Axis	GnRH—FSH—LSH—E1, E2, E3, Progesterone
HPG-Testes Axis	GnRH—FSH—LSH—Testosterone

You can certainly make other combinations using insulin and glucagon, thymus hormones etc. but these are the main patterns. You can get the hormone test kits through epigenetics-international.com. It is also possible to have the multiple hormones placed into one vial so that you have one vial for each hormone axis. This makes working with them much easier.

Treatment

There are many creative ways that you can work with these hormone combinations. The first thing to do is test each individual axis to look for inhibition or over-facilitation of an indicator muscle. Many people weaken, in the clear, to the HPA hormones.

Once you find a hormone axis that causes muscle inhibition you need to find out whether the body requires parasympathetic or sympathetic support. The easiest way to do this is to have the patient look at the ceiling or at your finger placed 10 inches in front of them and challenge the inhibited muscle. If the muscle facilitates from distance vision, the body needs more sympathetic support. If the muscle facilitates from close vision, the body needs parasympathetic support. (Walter Schmitt, Jr., D.C.).

When distance vision facilitates, indicating a need for sympathetic support, the best treatment is IRT (Walter Schmitt, Jr., D.C.). Find a Chapman's Reflex, or vertebra that neutralizes the inhibition from the hormones and gently pull downward on each talus.

When close vision facilitates, indicating a need for parasympathetic support, the best treatment is to work on a set point, or one of the beginning and ending acupuncture points on the face. Find the facial acupuncture point that neutralizes the hormones and have the patient touch the bilateral acupuncture points while you gently tap the chin to activate the P-DTR (proprioceptive deep tendon reflex). You could tap any deep tendon reflex to reset this pattern. Jose Palomar, MD first discussed the therapeutic use of deep tendon reflexes in AK. Richard Belli, DC showed the use of P-DTR when parasympathetic support is needed.

It is my experience that P-DTR (close vision facilitates) is most often needed to reset these hormone axes. Most of these patterns are long standing and need parasympathetic support. Acute hormone issues often show the need for IRT (far vision facilitates), but fix what you find in each case.

Often correcting a hormone axis that caused inhibition in a muscle indicator will show up again as over-facilitated, so you need to repeatedly check each axis in the clear and after pinching the muscle spindle of your indicator muscle. Once you reset a hormone axis, recheck the other axes as they are often layered and a new one shows up. Sometimes you need to add two of these hormone axes together, such as the ovary and adrenal systems. The HPA axis with thymus hormones is often a good combination when a person has stress induced immune issues. Be creative and check the axes against toxins, allergens, cytokines, and chronic spinal, or joint problems. Once you find a weakness, find out if the body wants IRT to a Chapman's Reflex (far vision facilitates), or P-DTR to a head acupuncture point (close vision facilitates).

Emotional issues and past traumas are especially important to evaluate and treat in this manner. The HPA axis often tests positive with trauma recall, but often there are several hormone cascades that need to be addressed.

Dr. Walter Schmitt discusses several important hormone indicators in his 'Links between the Nervous System and Body Chemistry'. He found that putting the body in a supine C position with the head and feet to the right with the ribs to the left would increase steroid activity. The opposite supine C position with the head and feet to the left and the ribs to the right increases thyroid activity. A change in a muscle test response could be used to investigate the need for more steroid, or less thyroid function with the head and feet to the right, and more thyroid or less adrenal function for the opposite posture.

Placing a supine patient with head and feet to right along with the HPA axis hormones will often show a response even if you have corrected the adrenal axis in the neutral position. Similarly, placing a supine patient with head and feet to the left along with the HPT hormones will often show need for correction. Sometimes correcting the HPA axis will need to be followed by the HPT axis or vice versa. It is also important to recheck each axis for over-facilitation after a correction, as there may be another piece to address. Correct with IRT to a CR, or P-DTR to a face acupoint.

Summary

1. Test a strong muscle with each set of axis hormones under a magnet and note for inhibition, or over-facilitation. Or look for an axis that facilitates a weak muscle.
2. Check with near or far vision to see what therapy is needed.
3. If far vision changes the muscle test, do IRT with contact to a Chapman's Reflex
4. If near vision changes the muscle test, do P-DTR with contact to one of the bilateral head acupuncture points.
5. Test for new hormone axis imbalances or axis combinations and treat accordingly. Make sure to evaluate right and left supine C positions for steroid or thyroid activity.

Conclusion

The simple concepts of this paper have the potential to help our patients achieve better health. By extending our view of functional hormone imbalances to include the entire axis or line of hormonal command, we can achieve a more comprehensive diagnosis and correction. Hormones are secreted according to need via a process of feed back loops of control, so working with the hormone axes in this way can have a wide variety of applications.

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EMF Stress and Hormone Mediated Neurological Effects

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Abstract

This paper will show how electromagnetic field (EMF) pollution acts as a chronic stressor to the nervous and immune systems. A specific combination of hormones test vials can be used to expose and treat EMF induced imbalances. EMF stress should be evaluated in all patients, especially those who have chronic conditions.

Introduction

The human nervous system can entrain almost any frequency that it encounters, and most functions in the body are frequency dependent. Cells communicate via specific frequencies. Brain wave frequencies have been well studied and can be modulated by training them up or down to facilitate behavioral and functional changes. Gut bacteria and mitochondria have been shown to react to specific wavelengths. Light and sound frequencies are important therapeutic tools. Electrical current and electromagnetic fields (EMFs) can be therapeutic if applied with specific frequency and intensity, such as TENS, tACS, tDCS, and pulsed EMF.

Aside from the therapeutic use of specific wave frequency and form, we are all exposed to chaotic fields such as those that come from microwave towers, cell towers, routers, cell phones, dirty electricity from house wires, etc. At least 85% of homes are wired incorrectly, causing electromagnetic loops of discordant energy to pervade the home environment. Wi-Fi from a home router is like having a mini cell tower in your home.

As doctors we work hard to balance our patients and support proper lifestyle habits to promote their recovery and longevity. But, if we send them right back to a discordant electromagnetic environment, then we are missing one of the most ubiquitous and chronic stressors to the body. There is a lot of information available about the perils of modern EMF pollution and all doctors should become familiar with this body of knowledge, if only because they too live and work in toxic buildings. There is evidence that EMF pollution may be one factor (of many) affecting everything from autism, cancer, dementia and other neurological diseases. A few books, studies and sources are listed at the end of this paper.

Dr. Mercola has an interesting EMF interview on his website (mercola.com) with Dietrich Klinghart, a holistic MD. Dr. Klinghart, states that he will not take on a new patient with a chronic illness, unless they are willing to remediate the electromagnetic imbalances in their home. He finds this is important for the outcome of these cases. This is something we might consider with our difficult patients.

Dirty Electricity

Samuel Milham, MD is an epidemiologist who investigated clusters of childhood leukemia that occurred in isolated neighborhoods, or schools. He found that high frequency noise, or dirty electricity, piggybacks onto the 60 Hz alternating current that comes in on the electrical wires. Milham found that this was the major contributing factor to the different cancers that clustered in these neighborhoods and schools. Most homes and buildings have this high frequency chaotic noise. Dirty electricity can be tested with a Stetzerizer Microsurge Meter (Sources for meters at the bottom).

We can show the effects of dirty electricity with manual muscle testing. Have a patient therapy localize (TL) to the lower sternum and challenge a facilitated muscle. If it inhibits, correct what you find to bring the muscle into facilitation. Then take an extension cord, or other electrical wire that is plugged into an outlet and drape it over the supine patient's feet. Retesting the lower sternum TL will almost always demonstrate indicator muscle inhibition. At this point you can look for some nutritional supplement to balance this weakness. Although almost everyone weakens to this electrical stressor, each person has his or her own specific nutritional requirements to protect them.

It is interesting that when you remediate the dirty electricity in the office, the extension cord on the body no longer causes weakness to the lower sternal TL. This author has to remove the Stetzerizer filters from the wall outlets in order to test the effect of the dirty electricity on a patient. There is obviously a certain degree of proximity to the wire required to show the weakness at the lower sternum, but when you consider the collective EMF chaos that modern homes and buildings provide, the nutritional support that you find can be an important protection (or therapy) for the patient.

Body Voltage

Dirty electricity is just one kind of EMF problem. Another is the amount of voltage that the body receives at night. Sleep is our most important restorative, especially for the brain. It is important that the amount of voltage running through the body at night is minimal, ideally under 20 millivolts. You can purchase a body voltage meter and test how much voltage is running through your body as you sit on your bed. Often it will be several thousand millivolts. By selectively turning off the circuit breakers to the outlets of the bedroom you can find the combination that reduces the body voltage to a safe level (20 mV). This author had a body voltage of 5300 mV prior to turning off 4 circuit breakers after which the level went to 10. These 4 circuit breakers are turned off each night during sleep. This type of remediation can be very important to patients with chronic problems.

House Wiring

Most homes are wired incorrectly. Electricians are concerned with getting the lights on, the appliances working, and on to the next job. They are not always cognizant of the electromagnetic interference that comes from incorrect wiring. It is important that neutrals and grounds are on separate bars in the panels. An electrician who is guided by an EMF consultant who is knowledgeable in these electromagnetic issues can address this.

Wi-Fi

Having a Wi-Fi wireless router is certainly convenient, but the consequence of living with a cell tower in your home is not a good health plan. A wired Internet connection is best, but at least turn off the router at night. Also, turn off the wireless in your phones and computers as they also emit frequencies. Wi-Fi is now ubiquitous, so even if you turn off your Wi-Fi, there may still be signals from neighbors. Therefore, the following technique can be very valuable for helping our patients recover from the neurological and immunological damage caused by this form of EMF radiation.

Multi-hormonal Neurological EMF Balancing
There is a combination of hormones that mediate the stress of EMF toxicity. This concept is an extension of a previous paper by this author, *Balancing Hormone Axes (2018).* EMF stress appears to be modulated by the hormones of the HPA, HPG (ovary and testes) axes, and melatonin.

CRH—ACTH—Cortisol
GnRH—FSH—LSH—Estrogen, Testosterone
Melatonin

Only one estrogen is necessary for testing, but you could also add E1, E2, E3, and progesterone. If you place a cell phone on a patient they may or may not show muscle inhibition depending upon how sensitive they are. If you place all these hormone vials on a patient, under a magnet, placing a cell phone with Wi-Fi activated near the body will almost always cause muscle inhibition. A cell phone without Wi-Fi activated generally doesn't cause muscle inhibition. It is easier to do this testing if you get a vial will all 9 hormones in the one vial.

Once you have demonstrated the connection between the Wi-Fi of the cell phone and the hormone combination (muscle inhibition) you can begin to make the corrections. Remove the cell phone from the body, but leave the hormones under the magnet. Now bring a test kit of the different parts of the brain/nervous system under the magnet and isolate a brain vial that causes muscle inhibition. In other words, one brain part along with the above combination of hormones will inhibit a normally facilitated muscle. It is best to test the supraspinatus muscle due to its connection to CNS function. Lifeworkpotential.com sells several test kits of different brain tissues, which are needed for this procedure.

Once you find a brain tissue vial + hormones that inhibits a normally facilitated supraspinatus, you can correct it as shown in this author's paper, *Balancing Hormonal Axes.* Test the inhibited muscle with near and far visual focus to see which one facilitates the muscle. If far vision (looking at the ceiling) facilitates the muscle, then do IRT to whichever Chapman's Reflex TL also facilitates the muscle. If a near visual focus facilitates the muscle, then tap any deep tendon reflex with a TL to one of the beginning or ending acupuncture points on the face. This is called proprioceptive deep tendon reflex (P-DTR), which is taught by Jose Palomar, MD. Experience shows that these patterns of the nervous system and the hormones need P-DTR to a facial acupuncture point almost all the time.

Usually, multiple areas of the brain show the need for this correction. Find one at a time and then do the P-DTR to a facial acupuncture point. Often 4-8 or more different areas of the brain, including cranial nerves, will sequentially show the need for correction. When no more areas of the brain show the need for the correction, remove the hormone vials and then retest the supraspinatus. Often it will test inhibited. C1 frequently needs adjusting, but fix whatever you find, including nutrition, to correct the supraspinatus weakness. Sometimes patients are tired after these treatments, which shows how much stress the body has been under.

Once you are done you can place the Wi-Fi activated cell phone back on the body along with the 9 hormones and there will be no inhibition of the supraspinatus. This demonstrates that the hormone-neurological correction correlates to the effects of electromagnetic stress. Placing the extension cord over the feet with the lower sternal TL will also test negative after this treatment procedure.

Since our patients live in chaotic electromagnetic environments at home and at work, this procedure may need to be repeated every few visits, although there are usually less areas of the brain to balance on subsequent visits.

Summary of Procedures

1. Place an extension cord that is plugged into an outlet over the feet of a supine patient and test with a TL to the lower sternum. Look for nutritional support to facilitate the muscle.

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1. Place the 9 hormone vial(s) under a magnet and a Wi-Fi activated cell phone on the body. If muscle inhibition occurs, remove the phone and find a brain vial that inhibits the supraspinatus muscle. If near visual focus facilitates the inhibition, do P-DTR to a facial acupuncture point (bilateral). If far visual focus facilitates the weakness, do IRT to a Chapman's Reflex (less common).
2. Repeat by looking for another area of the brain that needs resetting and continue until no more areas show up.
3. Test the supraspinatus, and if inhibited, 'fix what you find.'
4. Hormone vials plus phone will no longer show muscle inhibition.

Conclusion

This paper just touches the surface of the EMF problems that we face. People wear Fitbits, Apple watches, carry cell phones in their pockets and live in a sea of Wi-Fi, discordant electromagnetic fields, and dirty electricity. Due to the economic concerns of those who make electronics and EMF grids, good research is often lacking or denigrated. As physicians we need to be aware of the EMF problem and how it affects our patients so that we can help them live in a safe, health-promoting environment.

EMF fields entrain our nervous systems like a tractor beam holds onto a wayward ship in a Star Trek movie. Mitochondria, the microbiota, enzyme activity, and many other body

functions can be altered by electromagnetic fields. When we work on patients we are usually not aware of the entrainment of the body by these fields. A major part of restoring and protecting health in modern day society, where there is a chip in everything, is to help our patients literally get off the grid. Or maybe we should say, get the grid off our patients.

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Enhancing Vagus Nerve Function With Photobiomodulation

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Abstract

The vagus nerve, aka cranial nerve X, provides parasympathetic supply to a wide variety of internal organs. It has a more powerful impact on metabolism than any other single nerve, whether sympathetic or parasympathetic. As a result, poor vagus nerve function can result in a wide variety of organic viscero-somatic dysfunction. This paper explores the use of photobiomodulation therapy to enhance vagus nerve function as well as specific methods to determine need. The resulting improvement in parasympathetic and neuromuscular indicators is the most dramatic yet observed by this author.

Key Indexing Terms
Vagus Nerve, Cranial nerve X, Photobiomodulation Therapy, PBMT, Low Level Laser Therapy, (LLLT), Applied Kinesiology, AK, Parasympathetic, Autonomic Nervous System, Auricular Therapy

Introduction
One of the hallmarks of Applied Kinesiology is what is commonly referred to as the "Triad of Health". This is usually depicted as a triangle with one side relating to structure, one to mental/emotions/electromagnetic and one to chemistry. At a time when many Chiropractic colleges seem to be moving toward an emphasis on musculo-skeletal and rehabilitation/physical therapy rather than the more holistic origins of Chiropractic, this author appreciates the holism of Applied Kinesiology more than ever.

This paper will be an exploration of the neurological, chemical and electromagnetic aspects of the Triad as well as their powerful effect on the structural side. The particular focus will be on vagus nerve function and a gentle way of enhancing its function using photobiomodulation therapy (PBMT).

Discussion

Photobiomodulation therapy refers to the use of light to effect positive change in body function. The forms referred to in this paper will be low level laser therapy (LLLT) and LED therapy. PBMT is used extensively in the healing arts to enhance healing, reduce inflammation and improve circulation.[1] There have been numerous studies demonstrating that PBMT will specifically enhance healing of cranial nerves and well as improve function of damaged cranial nerves.[2,4] Other studies studies have shown that specific wavelengths of light seem to act as a "photonutrient", enhancing ATP production as it is absorbed by Cytocorome c oxidase, the terminal enzyme of the electron transport chain in the mitochondria.[1]

At the 2017 ICAK-USA meeting there was a presentation by Dr. Kurt Vreeland in which he reminded me of the auricular vagus point and introduced another access point for the vagus.[3] This area is in the anterior neck, just medial to the sternocleidomastoid muscle and the carotid artery.. Electrical stimulation with the "Gamma Core"device was suggested along with some a caution not to use it on the right side to avoid affecting the heart rhythm.

The study of modern auricular therapy can be traced to Dr. Paul Nogier of France in the 1950's. The points developed by Dr. Nogier tend be related to neurological areas rather than meridian pathways. There is a broad area around the external auditory meatus which is innervated by the auricular branch of the vagus nerve. Several studies have documented changes in vagal function via electrical stimulation of this area.[5]

The area in green in the picture above represents innervation by the auricular branch of the vagus. The area I find most effective is about 3 mm posterior to the external auditory meatus.

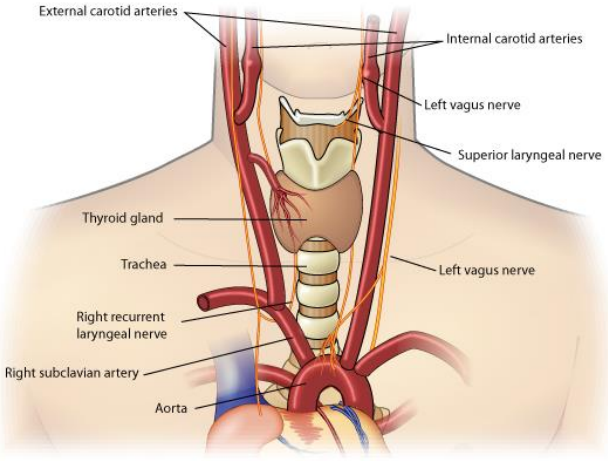
Dr. Vreeland's presentation re-energized my interest in auriculotherapy and spurred an investigation using applied kinesiology assessment protocols and PBMT on these areas of vagal input.

What I found was that the auricular branch of the vagus nerve or the vagus area medial to the sternocleidomastoid (SCM)/carotid artery would only rarely create an inhibition of a facillitated muscle on therapy localization (TL) even when there were indications of poor vagus function. I found that, as is often the case, a muscle related to an organ supplied by the vagus which was inhibited would give a positive response to TL somewhat more often but still not as often as I would have expected. What I eventually found was that an

inhibited muscle related to a vagus supplied organ, eg. rectus femoris, would become facilitated on manual muscle testing when the above vagus treatment areas had PBMT exposure for a minimum of 2 seconds. In other words, I would find a weak rectus femoris, tensor fascia lata, pectoralis major sternal etc, shine the laser on the auricular vagus point and see the weak muscle go strong a high percentage of the time, much higher than with TL. I found that rubbing the auricular vagus area would give a similar facilitation of an inhibited muscle. It seems that direct stimulation either mechanical or with light therapy is needed to give the most reliable indication of a need for vagus enhancement.

Since PBMT has the effect of improving vagus nerve health rather than stimulation, concerns about the negative effects from electrical stimulation medial to the SCM near the carotid artery are minimized. I have now used this treatment on dozens of patients with consistently beneficial effects.

The devices I have used are class 3A (cold laser or LED) with a wavelength in the 625 - 635 nanometer range and 5 milliwatts of power. I don't recommend using a class 4 (hot) laser for this treatment. My experience with a class 4 laser (for other applications) yielded minimal if any increased benefits compared to class 3A, with a definite increase in possible patient risk. "More power" is not always better. For the auricular branch of the vagus nerve, I prefer to use a laser pen with adjustable field size and on/off button.[6] For the cervical branch my preferred instrument is the GRT lite, an LED device with about a 2" field to cover more area of the nerve. I like to use both devices at once to treat both the auricular and cervical areas simultaneously which saves time. The laser pen described above can be used to treat both areas simultaneously (with 2 lasers) or separately. If the (much less expensive) laser pen is used to treat the cervical branch, I suggest setting the field to the widest setting and moving the laser up and down the cervical vagus area, staying superior to the larynx to avoid the thyroid.



I have found PBMT for the vagus to have broad beneficial effect on a clinical basis. I recommend testing all areas that might show dysfunction before applying this technique. Post-treatment I have seen the following improvements:

1. Facilitation of 90+% of inhibited muscles associated with organs supplied by the vagus nerve
2. Facilitation of previously inhibited muscles not associated with vagus supplied organs (at least to my knowledge) such as opponens pollicis and opponens digiti quinti
3. Often I find that the muscles become facilitated to the point that, at first, I suspected hypertonicity and made sure that they would inhibit with NMS stimulation
4. Ileocecal valve indications clear
5. Temporal bulge cranial fault indications clear
6. Some sutural fault indications clear such as sagittal and lambdoidal
7. Diaphragm inhibition indications clear
8. Reduced time in achieving resolution of GI problems like irritable bowel and small intestine bacterial overgrowth

A very interesting piece of information from Dr. Vreeland's presentation was that the primary vagal neurotransmitter, acetylcholine, reduces the release of inflammatory cytokines but not anti-inflammatory cytokines. He quoted a study demonstrating that electrical stimulation of the vagus nerve during endotoxemia in rats reduced production of TNF and prevented shock.[3] I haven't been able to accurately assess the effect of PBMT on inflammation so far but I look forward to seeing what the future holds in this area.

Good results can be obtained by 30 seconds treatment of each point. Some patients seem to benefit from as much as 120 seconds but I find, in general, the optimal treatment time is 60 seconds for each area. Because we are, theoretically, helping the vagus nerve to regenerate and become healthier by "feeding" it with PBMT, this treatment is a process of several weeks. Treating 2-4 times/week seems optimal and, if the patient seems to have important vagus related issues, I recommend no less than one treatment/week until the patient no longer tests positive for vagus PBMT. At that point it will be useful to test the need for vagus PBMT every 2-4 weeks for a few months.

To recap the procedure:

1. Find one or more inhibited muscles related to organs supplied by the vagus nerve
    a. It's a good idea to check all muscles you are interested in *before* treatment
    b. It's good to check for temporal bulge, ICV, diaphragm and other problems before PBMT
        i. Don't fix them yet as they may clear with vagus PBMT
2. Shine a PBMT device 3 mm posterior to the external auditory meatus or medial to the carotid artery and superior to the larynx for 2 seconds minimum
    a. Retest a previously inhibited muscle from [1] above while continuing PBMT
        i. Muscle becomes facilitated = need for vagus PBMT
3. Shine PBMT device on each of four areas
    a. 3 mm posterior to the external auditory meatus left and right

   b. Over an approximately 2.5" area medial to the carotid artery superior to the larynx left and right
4. Treat each area for 30 to 120 seconds. 60 seconds seems optimal for most patients.
   a. I like to use 2 devices so I can treat the auricular and cervical areas on the left simultaneously and then treat both areas on the right simultaneously to save time. Using 2 of the laser pens[6] set on wide work fine
5. Recheck positive findings from [1] and [2] above
   Correct any remaining positive findings as per usual AK protocols or see if they will facilitate with longer vagal PBMT

Conclusion

There is a lot of interest in improving vagal nerve function for good reason. It has more effect on organ function than any other single nerve. There are also intriguing indications of its importance in regulating inflammation and neurotransmitter balance. Viscero-somatic connections make enhancing vagus nerve function a powerful approach to a variety of chronic structural problems as well.

I have found the PBMT approach to vagus function enhancement to be a very powerful tool for treating a wide variety of problems with instant (well, within 60 seconds) results as far as facilitating numerous inhibited areas simultaneously. The fact that I find areas clearing that, to my knowledge, have no direct connection with the vagus nerve suggests that the influence of the vagus may extend far beyond current (or at least my) understanding.

Class 3A PBMT allows a very non-invasive, safe way of enhancing vagal function with impressive results. I hope you find this technique as useful as I have. Please feel free to contact me with any feedback or questions you may have.
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Lectin Sensitivity and Intestinal Permeability, An Applied Kinesiology Approach

Michael Lebowitz, D.C. & Noah Lebowitz D.C.

Abstract

Lectins are a plants protective mechanism to ensure survival of their offspring. Without the proper microbiome, they can cause havoc on ones immune system and cause autoimmune disorders, leaky gut, neurological issues, etc. Using Applied Kinesiology we check if one has a sensitivity to lectins, which can cause dramtic improvements in ones health.

Key Indexing Terms
Lectin, Intestinal Permeability, Autoimmune Disease, Applied Kinesiology

Introduction
In 2017 I read 2 books on Lectins: 1) Cure Your Autoimmune and Inflammatory Disease by Gregory Barton PhD and 2) Plant Paradox by Steven Gundry MD. Being a naturalist it made sense to me that plants would manufacture lectins as protective chemicals to protect itself and its offspring from insects and over the years through natural selection, the lectin content of foods could increase. Lectins typically exist in the seed of the plant, increasing the odds that the plant will survive to undergo successful reproduction. Root hairs are often also high in lectins (though not the main root). In certain plants they are also high in the skin of the fruit. In GMO plants sometimes lectins from one plant are incorporated into another plant to help it resist certain insects yet rendering the new "hybrid" unhealthy for consumption. Certain plants do not have lectins or have only very small amounts. Sometimes a plant does not need them. Take for example a macadamia nut, where the protective shell is hard enough that the plant doesn't need lectins to protect it from prey.

Many lectins are toxic to the nervous system, immune system, etc. Some, like the lectins in raw kidney beans, can lead to death. Hypercoagulation, and endocrine disruption are other possible side effects of eating lectins.

Lectins
Lectins are carbohydrate-binding proteins found in your foods. Though they probably exist in all foods to some extent, they are highest in beans, grains, grain and bean fed animal products, nuts, seeds, and nightshades. Fruits that are picked before they are ripe (those grown in other countries and then shipped to the USA) have a much higher lectin content vs. those that are allowed to fully ripen. There is some debate on which foods are allowed vs not allowed on a "lectin free" diet, but a fairly comprehensive list can found in Appendix A.

Lectins are resistant to breakdown by the body's digestive enzymes and to most methods of cooking. Eating them in excess or even in small amounts in susceptible people can contribute to a myriad of health problems (especially in patients with dysbiosis and/or food sensitivities). One of the body's biggest defense mechanisms against lectins is natural mucous production. This is a reason your nose runs (increased mucous production) after eating spicy foods.

They are a major contributor to increased intestinal permeability ("leaky gut").[1] As a result of leaky gut they can enter the bloodstream, react with antibodies and lead to various autoimmune "diseases" depending on your weakened areas, genetics, etc. One study showed specifically how they interact with enterocytes and lymphocytes, leading to antigenic stimulation and cause the expression of rheumatoid arthritis.[2] They can also make your body more prone to dysbiosis. New research has even shown lectins to travel from the gut to the brain via the Vagus Nerve to Substantia Nigra, which can cause damage leading to Parkinson's disease.[3] Lectins can also interrupt normal neuronal communication in the gut and brain, causing inflammatory reactions.[4] Lectins can also act with molecular mimicry. One example of this is WGA (Wheat Germ Agglutinin), which can bind to insulin receptors, but does not get released as insulin does when the need is no longer present.[5]

According to Dr. Gundry, humans have a lectin-binding sugar lining our blood and enterocytes in the gut, Neu5Ac. WGA and other lectins bind to these molecules and cause atherosclerosis as well as autoimmune disease.[6] Dr. Arpad Pustazi found that in Genetically Modified (GM) potatoes in which lectins from a snowdrop bulb were added to act as an insecticide it led to rats experiencing stunted growth, deformed intestines, a decreased immune system and smaller brains.[7]

Lectins can over stimulate the lymphatic system and suppress both T cell production and B cells. They also act to stimulate mast cells and increase histamine release.[7] This is one way that lectins can lead to dysbiosis. Within 24 hours of exposure to lectins "bad" bacteria increased dramatically and it took 48 hours for the levels to return to near pre-exposure levels.[8]

Methods and Procedures

Reading about how lectins could be involved as a contributing factor in many diseases especially autoimmune ones, we were intrigued and wanted to use applied kinesiology to see if we could confirm the hypothesis. We were able to purchase a lectin energetic vial kit from a leading manufacturer. To our disappointment the vials in the kit rarely tested positively on our chronic patients. We were aware that some of the most toxic lectins were found in beans, especially red kidney beans. Knowing that lectins contribute to increased intestinal permeability, we took some raw red kidney beans as well as some other raw beans, and put them aside and then pressure-cooked a small amount of beans from the same batch. According to Dr. Gundry, pressure-cooking can easily destroy bean lectins (although not other lectins such as in grains). Using the tensor fascia latae (TFL) as an indicator muscle, due to its relationship to the large intestine, we tested raw kidney beans as well as the other beans on a strong TFL. On the vast majority of our chronic patients the pressure-

cooked beans did not weaken the TFL while the raw beans did. There could be a number of reasons for that but lectins could be an obvious reason.

The Technique

1) Screen the patient on the "master lectin" vial, composed of a mix of high lectin foods. It may weaken or cause hypertonicity of a strong indicator muscle
2) If the test is negative but you suspect lectins- test on a strong TFL or over the B&E point for the large intestine (LI-21) or over a symptomatic area of your patient.
3) If positive, assume there is a lectin issue especially if the reaction is blocked by a lectin binding agent.
4) Put the patient on a lectin restriction diet for 3-4 weeks and see if symptoms improve
5) Put them on a lectin binding agent during this time to help remove lectins that are already bound to gut tissue
6) On subsequent visits once the lectin vial no longer tests positive have the patient slowly reintroduce lectin-containing foods. It is possible that as soon as they reintroduce them, the lectin vial will again test positive in which case more permanent avoidance is ideal. If it doesn't cause recurrence of the test finding they may be able to eat them with a low to moderate intake.

Discussion

We started to have these patients avoid major lectins in their diets. The results were dramatic in a number of cases. Knowing that mucilaginous substances as well as a few other herbs could bind lectins, we wanted to test them out as a possible remedy. A mixture of these not only blocked the raw bean finding on muscle testing, but also if the patient took this as a supplement it allowed the patient to reintroduce these foods in moderation without a recurrence of their symptoms while beforehand, they could not.

From a laboratory-testing standpoint Adiponectin and TNF-α have been shown as potential markers for lectin sensitivity. Eight hundred patients with a personal or family history of autoimmune disease tested and all 800 showed elevated levels of Adiponectin and 760/800 showed elevated TNF-α levels. All the people followed a lectin free diet and within 6 months 100% had their TNF-α levels return to normal (Adiponectin remained elevated in 790/800 individuals). Based off this study Adiponectin can be used as a marker for lectin sensitivity in individuals and TNF-α is a way to measure exposure levels in those with autoimmune disease and/or elevated Adiponectin levels.[9]

Conclusion

In addition to giving mucilaginous substances to bind lectins, we still have the patient follow a low lectin diet for optimal results. Lectins are high in beans that aren't pressure-cooked, grains (some researchers feel you cannot destroy grain lectins), animal products in animals fed beans or grains (most non grass fed animals are fed corn and soy both high in lectins), nightshades, seeds, and nuts. Squash, cucumber etc. have fairly high lectin content in their seeds. Depending on genetics and ethnicity each individual might have a different

tolerance for certain lectins. For example, someone of Latin American ancestry may have a higher tolerance of corn lectins as it has been in their diet for more generations.

Adequate HCl and a healthy micro biome will to varying degrees help lectin tolerance. Many cultures instinctively developed food prep methods to decrease lectin content in their food. Fermentation of soy decreases its lectin content (most forms of soy eaten in Asia are fermented), refining of wheat removes one of two harmful lectins (Wheat Germ Agglutinin) and white rice removes some of the lectins found in whole brown rice. It is interesting in places like Italy when they eat tomatoes they often remove the seeds and skin, which are the two highest lectin concentrations in the plant. Traditional sourdough bread has a lower lectin content than modern bread since the microbes used to cause fermentation will digest much of the gluten from wheat.

Lectins have become important enough in patient outcome that we screen for them routinely in patients and we have seen resolution in symptoms as diverse as chronic sinus issues, Asperger's syndrome, season allergies, chronic lumbar disc issues, arthritis, etc.

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Appendix A:

Low Lectin Foods (allowed)

OILS
- Coconut, Olive, Macadamia, MCT, Avocado, Perilla, Walnut, Red palm, cod liver.

Sweeteners
- Stevia (SweetLeaf), Just Like Sugar (chicory root), Inulin, Yacón, Monk fruit, Luo han

Nuts & Seeds (½ cup/day)
- Macadamia, Walnuts, Pistachios, Pecans ,Blanched Almond, Coconut, Coconut milk/cream (unsweetened), Chestnuts, some do better with no nuts
- **Olives**

Beans
- ALL beans (peanut and soy are not allowed). Beans must be pressure cooked!

Vinegars
- All (without added sugar)

Herbs & Seasonings
- All (except chili pepper flakes & paprika)

Flours
- Coconut, Blanched Almond,, Chestnut, Cassava, Green banana, Sweet potato, Tiger nut, Grape seed, Arrowroot

Foodles
- Shirataki, Miracle Noodles, Miracle Rice

Fish
- (any wild caught, 4oz ./day) Whitefish, Freshwater bass, Alaskan halibut, Alaskan salmon, Hawaiian fish, Sardines, Anchovies

Fruits
- Avocado, Blueberry, Raspberry, Blackberry, Strawberry, Cherries, Crispy pear (Anjou, Bosc, Comice), Pomegranate, Kiwi, Apple, Citrus (no juice), Peach, Nectarine, Plum, Apricot, Figs, Dates

Vegetables
- ***Cruciferous*** – Broccoli, Brussels sprouts, Cauliflower, Bok Choy, Napa cabbage, Chinese cabbage, Swiss Chard, Arugula, Watercress, Collards, Kohlrabi, Kale, Green/Red cabbage, Radicchio
- ***Other*** - Celery, Onions, Leeks, Chives, Scallions Chicory, Carrots (raw), Carrot greens, Artichokes, Beets (raw), Radish, Daikon radish, Jerusalem artichokes/sunchokes, Hearts of palm, cilantro, Okra, Asparagus, Garlic, Mushrooms
- ***Leafy Greens*** – Romaine, Red & Green leaf lettuce, Mesclun, Spinach, Endive, Dandelion greens, Butter lettuce, Fennel, Escarole, Mustard greens, Mizuna, Parsley, Basil, Mint, Purslane, Perilla, Algae, Seaweed, Sea Veggie

Resistant Starches
- ***(In Moderation)*** – Green plantains, Green bananas, Baobab fruit, Cassava (Tapioca), Sweet potatoes or yams, Rutabaga, Parsnips, Yucca, Celery root, Glucomannan – konjac root, Persimmon, Jicama, Taro root, Tiger nuts, Green mango, Millet, Sorghum, Green papaya, carob

Pasture-Raised Poultry (not free-range – 4oz./day)
- Chicken, Turkey, Ostrich, Pasture-raised or omega-3 eggs (up to 4 daily), Duck, Goose, Pheasant, Grouse, Dove, Quail

Meat (grass-fed & finished – 4oz./day)
- Bison, Wild game, Venison, Boar, Elk, Pork (humanly raised), Lamb, Beef, Prosciutto

High Lectin Foods (not allowed)

Refined, Starchy Foods

- Pasta, Rice, Potatoes, Potato chips, Milk, Bread, Tortillas, Pastry, Flour, Crackers, Cookies, Cereal, Sugar Agave, Sweet One/Sunnett, Splenda, NutraSweet, Sweet 'n Low, Diet drinks, Maltodextrin

Vegetables

- Peas, Peas Protein, Sugar snap peas, Legumes, Green beans, Chickpeas (including in hummus), Soy, Tofu, Edamame, Soy protein, Textured vegetable protein (TVP)

Nuts & Seeds

- Pumpkin, Sunflower, Chia, Peanuts, Cashews, sesame, other nuts not in yes category

Fruits/Vegetables

- Cucumber, Zucchini, Pumpkins, Squashes, melons, Eggplant, Tomatoes, Bell peppers, Chili peppers, Goji berries

Milk Products

Kefir Grains, Sprouted Grains, Pseudo-Grains, & Grasses

- Wheat, Einkorn wheat, Kamut, Oats, Quinoa, Rye, Bulgur, White Rice, Brown Rice, Wild Rice, Barely, Buckwheat, Kashi, Spelt, Corn, Corn products, Cornstarch, Corn syrup, Popcorn, Wheatgrass, Barely grass

Oils

- Soy, Grape Seed, Corn, Peanut, Cottonseed, Safflower, Sunflower, Partially hydrogenated vegetable oil, Canola

CAFFEINE

- Coco, Chocolate, Cola, Guarana, Coffee, Black Tea, Green Tea, White Tea, Oolong, Acai Berries, Yerba Mate

Leg Pain and Foot Drop After Pregnancy - A Case History

Robert Ozello, D.C., DIBAK

Abstract

A case history of left leg pain and left foot drop after a difficult labor and cesarean section is presented.

Key Indexing Terms

Leg Pain, Foot Drop, Pregnancy, Applied Kinesiology, Proprioceptor, Anatomy Trains, Cervical Dysfunction, Intubation

Introduction

The patient underwent a 52-hour labor followed by a Cesarean-section (C-Section). She was told by her orthopedist and neurologist that there was nothing they could do to help, and that chiropractic care was useless.

Materials and Methods

Applied Kinesiology Manual Muscle Testing, Anatomy Trains Procedures

Discussion

A 34-year-old female presented with left leg pain with weakness and fatigue and left foot drop. She recently gave birth after a 52-hour unsuccessful labor followed by a C-section. The pregnancy was uneventful. When she woke up after the C-section she had the leg and foot symptoms. Walking was quite painful and difficult, and she was very worried about taking care of her new born baby.

An original MRI revealed a hematoma in the anterior compartment of the calf. Another MRI several weeks later revealed little evidence of the hematoma, but her symptoms persisted.

Initially most of the treatment was centered on the cervical region. She had a bilateral anterior C5-C6 with imbalances of the SCM, levator scapula, neck extensors and upper trapezius. This was most likely caused by the intubation during the surgery. When these were corrected her symptoms improved 75%.

Further corrections where made to the rectus abdominals, oblique abdominals, psoas, gastrocnemius/soleus, tibialis anterior, popliteus, gluteus maximus and peroneus longus.

All muscles were corrected using proprioceptor work and strain counter strain techniques.

Results
The patient's symptoms were completely alleviated after 11 visits over seven weeks.

Conclusion

This author has noticed that following surgery and intubation there is almost always cervical dysfunction caused by the intubation. This can cause problems both nearby and referred from the cervical spine. The astute clinician must carefully examine and treat the cervical spine.

By taking a strong structural approach for a very difficult and upsetting case for the patient there was an excellent outcome.

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Neck Pain and Fatigue - A Case History

Robert Ozello, D.C., DIBAK

Abstract

A case history of chronic and persistent neck pain and fatigue is presented.

Key Indexing Terms
Neck Pain, Fatigue, Applied Kinesiology, Ligament Stretch reaction, Megaloblastic Hypochromic Anemia

Introduction
It is important to carefully evaluate the patient at each step of care and use all available diagnostic tools to get the best possible result.

Materials and Methods
Applied Kinesiology Manual Muscle Testing, Biotics B12 Folate Plus

Discussion

A 53-year-old female presented with severe neck pain with weakness and fatigue. She had been suffering for several years with no relief from a chiropractor and two physical therapists. In fact, when the chiropractor adjusted her she felt worse.

She had a history of breast cancer and had a mastectomy. She had been on tamoxifen for two years and will continue for another eight years. She also had a bleeding duodenal ulcer that was now asymptomatic. She did not recall any car accidents or physical trauma.

Applied kinesiology examination revealed a ligament stretch reaction. This would explain her feeling worse after an adjustment. She also had a diaphragm dysfunction which would contribute to her fatigue. Further examination revealed multiple muscle imbalances. These were treated with proprioceptor technique and strain and counterstain technique. After these imbalances were corrected the ligament stretch reaction was no longer present. I then corrected multiple subluxations and fixations with good results. Her pain and fatigue diminished considerably.

She then brought in recent blood work. It was unremarkable except for a megaloblastic hypochromic anemia. The results were well beyond the pathological reference range. The medical doctor who ordered the test told her that she was fine, and everything was normal! I explained the anemia to her and put her on B-12 Folate Plus from Biotics one tablet three times a day.

Results
The patient had a rapid and complete improvement with no return of symptoms.

Conclusion

This case shows the importance of evaluating and treating the patient with a careful and thoughtful treatment program. By using as many tools as possible the patient had a very good result.

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Postpartum Depression: Possible Causation, Investigation, and Resolution: A Case Study

Corey A. Osborne D.C., D.C.B.C.N., D.C.C.N., B.C.I.M.

Abstract

This paper is a case review involving a mother of 2 (3 pregnancies) with history of postpartum depression (PPD) as well as anxiety after each pregnancy including her miscarriage, and an attempt to prevent a fourth bout of depression starting treatment in her third trimester. The patient's history includes episodes lasting an average of 13 months or longer depending on the pregnancy. The treatment was in a private office setting with multiple visits over a period with eventual resolution of the condition. The treatment consisted of multiple natural techniques including: chiropractic manipulation with applied kinesiology investigative techniques and procedures, acupuncture, and clinical nutrition. The objectives of this paper are to investigate the resolution of the patient's postpartum depression after treatment of identified nutritional deficiencies, functional glandular deficiencies possibly brought on by chronic glycemic dysregulation due to pancreatic viral infection and small intestinal bacterial overgrowth (SIBO) as well as iron deficiency. Chronic infection being the main concern for causing immune dysregulation as well as cellular dysregulation reflecting on preterm TH2 dominance and eventual turn to TH1 dominance postpartum the reason for the patient only having anxiety and depression persistently after pregnancy.[8,10] The patient was anxiety and depression free at the end of the case with a conclusion of the possibility of chronic infection of the pancreas as well as SIBO leading to a depressed state of the TH1 and TH2 immune systems allowing the infection to persist over years and management/resolution of SIBO infection leading to expression of the TH1 immune system at the pancreatic level.[3,4,6,9,12,14,16,18,20]

Key Indexing Terms
TH1/TH2 Balance, Small Intestinal Bacterial Overgrowth (SIBO), Applied Kinesiology, Postpartum depression, anxiety, Reactive Hypoglycemia, Glycemic Dysregulation

Introduction

Women that have given birth have an 8-19% chance of experiencing PPD as shown by the Centers for Disease Control and Prevention (CDC) when looking at self-reporting mothers.[5] Studies outside of the CDC report that the numbers may be lower closer to 6.38% in one study or as high as 12.6% in another.[7,11] Commonality in all reports is the difficulty in diagnosing as well as making physicians aware of the condition to be able to treat and support patients.[13] The condition is marked by a multitude of symptoms and or conditions including depressed mood, inability to gain pleasure, insomnia, ongoing fatigue, anxiety, guilt, feelings of worthlessness, and can even include thoughts of suicide or

death.[5,7,11,15,20,22] At the present time the literature is lacking in PPD recognition, screening, treatment, and prevention. Some of the risk factors that have been reported for risk factors leading to PPD are unemployment, high risk pregnancy, lack of or difficulty with breast feeding, lack of social support, preterm or low birthweight, previous postpartum, mental condition diagnosed prior to pregnancy, glycemic dysregulation, gestational diabetes and other diagnosis.[3,5,11,20] The impact can be far reaching as the PPD can affect the mother and child in the long term. Marital problems, disconnect with the child, changes in behavioral development/disturbances, higher crying rates, and decreased intelligence are only a handful of known far reaching effects of PPD.[5, 22]

Method

The patient in this case presented at the beginning of her third trimester of her pregnancy in hopes to deter postpartum Depression (PPD) which she had experienced in all her previous pregnancies. Two of the three pregnancies produced children and the third was a miscarriage in which she still experienced PPD for no less than 3 months. Her previous bouts of PPD lasted no less than 13 months. She notes that she has been put on antidepressants for each occurrence with Sertraline at 150-200 mg which is a selective serotonin reuptake inhibitor (SSRI) with minimal change in the condition each time. She was also seeking pain relief care and or correction for low back and neck pain at the same time. History included a motor vehicle accident at the age of 18. The damage was enough for the patient to undergo reconstructive surgery for her face. No other fractures or dislocations existed at the time. No chiropractic care was administered or sought out at that time. She had also previously been diagnosed by another physician with hypoglycemia and at this point still not controlling the condition with diet or supplementation and would wait to eat until after having symptoms related to hypoglycemia.[24] She had previously taken nutritional products (could not recall) to help control her blood sugar from the previous doctor but had not taken in a long time. Her neck and low back condition were treated by the same physician that had previously diagnosed the hypoglycemia. Her family history included anxiety exhibited by many other family members including her mother, Aunt, and maternal grandmother. Depression was noted with her mother, maternal grandmother, uncle, and brother. She was not on any medication at the time of the initial exam, only prenatal multivitamins. Her past medical history included constipation and fatigue as well as the symptoms listed above.

On the initial intake the patient was very pleasant and not experiencing any anxiety and/or depression. She measured 5’5’’ and 160 lbs. BMI 26.62, BP120/70, pulse 85 BPM, age 37 years old, no impairment of functional, ambulation was normal, gait was widened, posture demonstrated rounded shoulders. Cardiovascular was within normal limits (WNL) with auscultation, respiratory was WNL with auscultation, genitourinary the pt denied dysuria, frequency, urgency, nocturia, hematuria, polyuria, pneumaturia, or foul-smelling urine. The Neurological testing cranial nerves (CN) WNL, and deep tendon reflexes +2 upper and lower extremities. She denies syncope, tremors, vertigo, numbness, loss of feeling, paresthesia, loss of strength, loss of coordination or trouble maintaining balance. She was alert, fully oriented, affect appeared appropriate to the situation, and higher intellectual functions were normal. Her structural findings were consistent with expected

findings of chronic whiplash and postural imbalances associated with the description of her accident as well as taught AK texts and literature.[25,27,30,31]

First in her treatment was addressing her structurally and neurologically with the very first treatment consisting of Injury Recall Technique IRT utilizing Bennette reflex points for all facial injuries found and reported.[26,31] The patient noted immediate changes in her neck and shoulders from the treatment noting minimal to no pain and a looseness that has not been felt in years. Her low back and remaining spine and postural imbalances were addressed as well with no difficulty and well tolerated.

Labs were drawn, and the patient had multiple deficiencies including the functional hypoglycemia (glucose 81 mg/dL, HbA1c 5.4% as well as clinical symptomatology). She also demonstrated a lab low ferritin of 11 ng/mL, calcium 8.6 mg/dL, albumin lab low at 3.3 g/dL and total protein functionally low at 5.5 g/dL. Her iron binding capacity 585 ug/dL which is elevated outside of the lab rang as well as the TIBC being elevated at 514 ug/dL. The patient's serum iron was 71 ug/dL with a saturation of 12%. The T3 uptake was also low at 19%. The vitamin D was functionally low at 33.5 ng/mL. The patient was also maintaining a slight functionally elevated white Blood cell count functionally as well at 8.5 x 10E3/uL. RDW functional elevation at 14%. A shift in the neutrophil % elevated at 76% and depressed % of lymphocytes at 17%. Glutamic acid decarboxylase 65 (GAD 65) auto antibody test was neg. This test was run to rule out autoimmune reactions to the enzyme which has been shown to cause significant anxiety depending on the severity due to glutamate excitotoxicity.[28,29]

The patient was considered to have a preliminary diagnosis of SIBO causing early malabsorption issues. She had no yet become anemic and her RBC was within normal limits, but studies have shown that women with low ferritin in the postpartum timeframe are high risk for PPD and that treatment with iron supplementation and decrease the risk.[1,19,21] One Study was found stating no correlation in iron/ferritin levels and PPD but the need for iron and neurotransmitter production has been fully established.[2,29] Such examples include the production of 5-HTP from tryptophan and DOPA production from tyrosine both require the presence of iron to make serotonin and dopamine respectively.[29] Loss of efficient neurotransmitter production can be crucial in any case of depression. Besides loss of iron, SIBO can create a proinflammatory state in patients that can cause a multitude of symptoms and conditions including food intolerance, bloating, gas, abdominal pain, nausea, weight gain, weight loss, glucose dysregulation, suppressed immune response, adaptive adrenal scenarios, anemias to name a few. The patient had history of hypoglycemia that turns out to be a functional reactive hypoglycemia (RHG) which she was not controlling and or support via nutrition.[24,28] At this point, the patient was given information and guidance on both conditions. She agreed to start controlling the RHG with the instruction given but felt that the SIBO program was too overwhelming. It was agreed, if she felt she would not keep up on calorie intake what she needed due to food limitation, she should not do the SIBO program but instead to reduce her simple carbohydrate intake, increase protein, and increase essential fatty acids (EFA). She was supported with Hemevite an iron containing supplement in the form of ferrous fumarate. She was also supported with calcium lactate, zypan a betaine HCL product for the deficiencies as well

as the likelihood her digestive system was overwhelmed as seen with cases of SIBO. Nutrition was tested against positive TL of Chapman's reflex points for the Stomach with an indicator muscle and the weakness negated using gustatory reflex with zypan.[25,27,30,31] Aerobic muscle testing was performed with the patient not able to do more than three consecutive muscle tests in a row without fatiguability.[25,27,30] Hemevite negated any weakness previously expressed. She also displayed bilateral long head of the bicep to be weak in the clear and negated with supplementation containing full spectrum essential and non-essential amino acids as well as nociceptive stimulation of the pancreatic visceral referred pain area.[31] Vagal stimulation was also suggested for home care due to the likelihood of SIBO with over excitation of the sympathetic nervous system.[29] The patient was also supported with phosphatidyl serine for pituitary support for her complaint of difficulty getting to sleep as well as an adaptogenic herbal formula containing Vit C, Panax Ginsing, Ashwagandha, Holy Basil, Rhodiola, Eleuthero, and pantethine for cortisol modulation . Pituitary points therapy localized weakening an indicator muscle and negated with the phosphatidyl serine product as well as the adaptogenic formula.[25,27]

The patient's care was preventative and attempting to get her to WNL on irregular labs. She was 33 weeks gestation when starting care and the patient noted that she still planned to take the SSRI medication after delivery. The patient was doing very well as she was happy and compliant with eating better and controlling blood glucose levels as well as holding her structural corrections.

Her baby was born at the full gestational period. Within two weeks the patient presented with symptoms of PPD. She noted that she had bottomed out and her symptoms were bad enough she started the medication sertraline as previously stated. She was feeling brain fog, couldn't eat as decisions are too difficult to make. She noted not being able to figure out how to send birthday invitations out for one of her other children's birthday party and had to ask her husband for help. She reported not being able to wait to stop breastfeeding and wants someone else to take care of the baby because she did not feel capable and or comfortable doing so. She reported feeling helpless and hopeless and desperate. GV 16 and 20 were TL'd and positive and negated by Vit D as well as two products that support the immune system at the TH1 and TH2 levels (X Viromen and X-FLM). The TH1 support contained Vitamin A (as mixed carotenoids), Vitamin C (as ascorbic acid), Zinc, Astragalus Extract (root), Echinacea purpurea, extract (root), licorice Extract (root), Thymus (porcine), Spleen (porcine), Parotid (bovine) and the second TH2 support contained Pine Bark Extract, Green Tea Extract, Grape Seed Extract, Resveratrol, and Pycnogenol.

Dr. Datis Kharrazian teaches the immune system, in some cases of autoimmunity or chronic conditions, can be suppressed enough that both aspects of the immune system will need to be supported at both TH1 and TH2.[24] On that visit, the patient also received acupuncture as taught by Dr. John Sunderladge receiving ST36, KI7, LI4, SJ5 bilaterally and right LU7 with electric stim at 4 nano amps and 5 htz for 15-20 min with the positive leads on KI7 and ST36 and the negative leads on the TW5 (SJ5) and LI4. The patient reported back the next day relief and feeling better immediately which never happened in prior postpartum situation situations; thus, she was excited that she was getting relief.

Within two visits she noted 75% improved and very happy. Her family reported a large change like not seen before as well.

On the third visit, the acupuncture was done for 50-60 min for the first time at that duration at which she reported the next day feeling a return of the PPD. At that time, she tested for positive therapy localization GV16 and 20 as well as the pancreatic VRP and acupuncture alarm point. The points were negated by body testing a homeopathic for broad spectrum viral support including Epstein Barr, influenza, cytomegalo virus, adenoviren, hepatitis B, norovirus, as well as herpes simplex 1 and 2. The finding was again strengthened by X Viromen the immune TH1 support previously listed. The literature reports gallstones and alcoholism as being the most common causes of inflammation of the pancreas, but 10% are likely caused by infectious organisms such as viruses, bacteria, and parasites.[16] Her psychiatrist also changed her medication at that time to Zoloft (50mg) and Abilify (2 mg). We continued with acupuncture as it had a very supportive affect and the pt would get relief for several days and then symptoms would return. The testing for the infection continued to improve with therapy localization improving each visit. Her family continued to talk about how better she has been through the entire process compared to previous pregnancies. The patient responded very well for several weeks and then acquired illness resembling the flu which flared all symptoms of the condition. The patient would not do lab testing for confirmation on flu or not. She was also continuing to follow the reactive hypoglycemia eating program quite well at this point and had been all along as reported by her. She continued to test positive for virus for a few visits. The long head of the bicep was testing strong (5/5) at this point for several visits as well in the clear leading to the conclusion her glucose metabolism was stabilizing.

The patient recovered very well again after the flu like symptoms past and very stable again feeling great and reporting 70% better on average. There were occasional dips in her mood and anxiety. Hypothalamus and pituitary were checked at this point and double TL with circulation sex alarm point and found to be positive. Labs were drawn checking LH, FSH, Estrogen total, estradiol, testosterone, and progesterone. The patient was lab low across the board with total estrogen being the only normal lab value at the low end of normal and the remaining were all low outside of lab range. She was retested using the positive pituitary and hypothalamus points manually and two nutritional supplements negated the TL weakness. The two nutritional supplements were geared towards neural antioxidant support and pituitary and gonadal support (Neuro PTX and Opticrine). The Neuro PTX contained Vit E, N-acetyl L-cysteine, alpha linoleic acid, N-acetyl L Carnitine, creatine monohydrate, milk thistle, genistein 10, and CoQ10. The Opticrine contained panax ginsing, tribbulis terrestris, maca and zinc. The patient remained doing well for the month with occasional “bad days” but again the whole process being much better than any previous as reported by her and her family. After retesting in a month from the start of the nutrition, the patient's labs returned to normal values for all hormones tested from above. She continued to note doing well. All the previous testing had transpired over three months from the delivery of her child which was of normal birthweight, vaginal delivery, and no complications.

The patient was doing well enough, she decided to attempt the SIBO eating modification protocol from our office. We chose to use the Apex energetics protocol due to previous success over other protocols such as the Gut and Psychology Syndrome eating program (GAP's), the Fermentable Oligo-, Di-, Mono-saccharides and Polyols restricting program (FODMOP), carbohydrate specific diet, etc. She had been doing the lesser version of the Apex protocol for the time being due to the overwhelming aspects of dealing with pregnancy and calorie upkeep as reported earlier in this paper. She was on the program for approximately three weeks and then had significant relapse with PPD. She reported the feeling of hopelessness, despair, stress, inability to function and take care of the children at this time. Her Doctor changed her medication again this time to Wellbutrin and Ritalin at which she was unable to remember dosages. She complained of the medication making her feel dead and not able to cry as she just lost her father in law. She feels that she is not able to grieve.

Upon examination again with this flare after implementing of three weeks of the SIBO program, the patient tested SIBO free with the Small intestinal (SI) alarm point that remained unchanged with fructooligosacharides found in products formulated for gut repair. Whereas previously after initial blood work she tested weak with the starches at the SI alarm point along with hiatal hernia and ileocecal findings as described in AK teachings.[25,31] She continued to also test negative at the thymus even with double TL of the thymus against the remaining alarm points. Rosner et al.[17] were able to demonstrate the reliability and validity of therapy localization in their study which is highly utilized by AK. Upon remembering a past AK related lecture, in which the instructor was not able to be recalled, deep therapy localization was then used against the thymus with double TL against the remaining alarm points as Rosner et al.[17] theorized the "essence of TL is that input from low-threshold mechanoreceptors in the skin can modulate ongoing activity in the muscles." The author upon remembering the previous lecture and theorizing further that a fatigued sensory input may need stronger stimulation continued with this new positive finding. The pancreas returned as the only positive. X Viromen and previous stated viral homeopathic were no longer testing as affective for supplementation. The homeopathic restored the indicator muscle much better than the immune supportive nutrition. Olive leaf was then tested against the positive findings along with other antivirals with olive leaf by far the strongest supporter of the finding. Illicium verum also tested very well. The patient was then put on a dose of 2 capsules three times per day. With the flare of symptoms stemming from the effective SIBO program, the patient now tested for return of the long head of the bicep 4/5 returned as well as positive TL of the adrenal alarm points. Her sartorius were 4/5 bilaterally as well. These findings were also negated with olive leaf.[25,27,30,31]

Results

After three weeks of the continued olive leaf, adrenal support, continued blood sugar modification, viral homeopathic, as well as the initial nutrition, the patient was still taking, the patient reported feeling like new. She was no longer having episodes of any depression or anxiety. All pancreas and adrenal findings were negative even with the deeper TL. She also no longer tested positive for reactive hypoglycemia as in the beginning with nociceptive stimulation of the pancreatic VRP.[31] Her SIBO continued to test negative and

no symptoms of blood sugar irregularity or SIBO persisted. It has been over 6 months since the findings and treatment and the patient continues to report 100% recovery and no return of any PPD symptoms. She has a wonderful relationship with her newborn and her family role is solid and confident.

Discussion

The beginning of the case lasted around the three-month mark with the flare from doing the SIBO program at the 7th month mark from birth with a period of 3-4 months of the patient feeling pretty good as noted with her reporting 70% better. The family continued throughout treatment to insist the patient did extremely better than any of her other pregnancies. This case was complex and likely could have been handled better. The patient's non-compliance throughout due to her condition made the treatment likely last longer than expected. The eradication or suppression of SIBO early on would have possibly helped identify what looks to be a chronic infection of the pancreas earlier. With pregnancy, the dominance of the TH2 immune system towards the end of the pregnancy and switching to more of a TH1 dominance postpartum initially prompted thoughts of this case being an autoimmune case; thus the decision to run the GAD 65 auto antibody early on.[7,10,29] The hormone testing supported the glycemic dysregulation theory as the pituitary hormones were depressed which is seen with glycemic control issues especially seen more so in hypoglycemia and reactive hypoglycemia.[24,29] Early in the treatment, she continued to test for both TH1 and TH2 support suggesting the entire immune system was suppressed which would suggest chronic infection. The TH1 dominance after the giving birth would then allow the body to address the viral pancreas situation thus creating an exaggerated symptomatology of the reactive hypoglycemia. Viruses have been shown to be able to become chronic in the pancreas such as the coxsackievirus and other enteroviruses eventually changing the host gene expression and thus altering the function of the gland.[8,9,12,14] It has also been shown infected islet cells of the pancreas will be phagocytized by dendritic cells which can eventually elicit an immune response to the pancreas itself and has possibly been linked to Type I diabetes.[12,18,24] This infection of and destruction of the islet/β cells causes dumping of insulin that likely signals the phagocytosis of the cells.[12,14,18] This increased release of insulin could result in the reactive hypoglycemia type symptoms in an otherwise healthy patient prior to loss of self-tolerance.[4] The inflammation resulting from all of the conditions listed in the case including infection and reactive hypoglycemia possibly caused by infection has been increasingly recognized as a contributor to neuropsychiatric conditions including depression and anxiety.[3,5,6,20] In this case the depression and anxiety may merely an expression of chronic infections driving a change in glycemic control and inflammation.

Conclusion

As the patient responded better throughout the care, although subjective from her and her family as she was not seen in previous cases of postpartum depression, the hypothesis of glycemic dysregulation (in the absence of autoimmunity) due to chronic infection and suppressed immune system only expressed in a condition allowing TH1 dominance is possible. This case is far from conclusive but does beg the question of blood sugar and

chronic inflammation influencing mood and neurotransmitter production in PPD patients that need much further investigation. There are many factors that were not able to be ruled out that may have helped the case such as Gene testing including methylenetetrahydrofolate reductase (MTHFR) enzyme as well as Catechol-O-methyltransferase (COMT) enzyme. Knowing if the patient had these gene variations could have possibly helped decrease symptoms of the patient. Compliance was likely the largest issue as it did not allow for the proper feedback for trial of care but that is the nature of the condition

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Temporary Placenta Reflex Point

Madison Grzeszkowiak, D.C.

Abstract

Between 11-14 weeks' gestation a pregnant mother will present with a temporary placenta reflex point over-lying the known acupuncture point of CV-2. This temporary point can be used as a diagnostic and therapeutic (via cross therapy localization) tool for Applied Kinesiology practitioners utilizing manual muscle testing.

Key Indexing Terms

Pregnancy, Placenta, Acupuncture, Cross Therapy-Localization

Introduction

The placenta is an organ that develops in a woman's uterus during pregnancy to provide oxygen and nutrients to, and removal of waste from, a growing fetus. Somewhere between 3-4 months the placenta is completely matured and "takes over" hormonal production from the corpus luteum. It is normal for women to experience a decrease in morning sickness (nausea, vomiting, fatigue etc) once the placenta is fully functional.

In Applied Kinesiology (AK) it is common for the practitioner to use several different organ reflex points including, but not limited to, neurolymphatic, neurovascular, and alarm points. Alarm points are acupuncture points that lie on the front or side of the body and the majority of which fall on the Conception Vessel (CV) channel. AK practitioners can often utilize alarm points for diagnostic and therapeutic purposes via cross therapy localization (TL).

Discussion

Twenty-one pregnant participants (six of whom became patients during or after their second trimester) were muscle tested for a temporary placenta reflex point. Fifteen from the first few weeks of pregnancy and six from their second or third trimesters depending on when they became patients. All pregnant mothers who came in after their first semester had placenta points that TL-ed. Every patient by week 14 gestation was testing for the same point CV-2 with the exception of two patients. For some, the point began to test as early as 11 weeks. Cross TL of the point to supplements, neurolymphatic points, neurovascular points or emotions were then found and corrected resulting in the point no longer TL-ing.

There seemed to be a correlation with the mothers who suffered from more severe morning sickness and pregnancy difficulties having the placental point produce a weak muscle test more frequently than the mothers with seemly less difficult pregnancies. The two mothers that never TL-ed for a placenta point do not disprove the formation of the point but perhaps simply had placentas that were well functioning (both of these mothers had very unremarkable pregnancies via symptoms and blood work).

Conclusion

This study shows that between 11-14 weeks' gestation, when the placenta is fully functional as an organ, the acupuncture point CV-2 can be used as a temporary placenta reflex point. This placenta reflex point can be used as a diagnostic and therapeutic tool for AK practitioners. Further testing would be needed to find a spinal association point and/or muscle correlation.

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The Articularis Genus Muscle

David Leaf, D.C., DIBAK

Abstract

There has been little discussion about how to actively involve patients in their home care in musculoskeletal injuries. In chemical problems, patients are usually actively involved in determining the good, the bad, and the ugly. There has been little discussion about what is appropriate and the timing of procedures that a patient could do to improve their results and speed the recovery in musculoskeletal injuries aside from the standard medical RICE.

The small muscle lies under or has been described as part of the vastus intermedius. It is attached to the joint capsule of the knee and can be responsible for inhibition of the muscle when the knee is flexed at varying degrees.

Key Indexing Terms
Articularis Genus, Knee, Weakness, Quadriceps

Introduction

In both chronic knee instability and pelvic imbalances, this small muscle, found under the quadriceps, can be at least partially responsible for these problems.

Discussion

The muscle arises from the lower anterior surface of the femur and inserts into the articular capsule of the knee joint. Contraction of the muscle causes retraction of the suprapatellar bursa and it also elevates the articular capsule of the knee joint during extension.[1]

It is formed from the deep lower fibers of the vastus intermedius.[1]

Clinically, when it becomes shortened it abnormally pulls on the joint capsule and can create inhibition of the vastus portion of the quadriceps as well as the rectus femoris.

Testing for this is done by varying the angle of the flexion of the knee while testing the vastus muscle. If testing at angles beyond 90° are encountered, palpation over the lower portion of the quadriceps will many times find a thickened portion that is easily palpated. This is approximately 3 to 4 inches, 7 – 12 cm., in length.

Treatment for this involves cross-frictional massage and subsequent retesting at increased flexion angles. The patient should be encouraged to do this in the morning with the knee bent for at least 2 weeks. If they sit for long periods of time, it should be repeated during the day.

Clinical symptoms that the patient may report are weakness or inability to get out of low chairs, cars or off of the floor.

Conclusion

This small overlooked muscle can be the cause of periodic weakness that patient's report. It is easily found and treated.

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The Snoring Factors

Tyran Gregory Mincey D.C., DIBAK

Abstract

The objective is to share information about factors that relate to snoring and potential corrections that can be applied by a clinician who understands applied kinesiology principles and techniques. it is well known that snoring causes social, emotional, and health issues in the population and increases risk factors for future disease processes if not addressed. The purpose of this paper is to present solutions from an applied kinesiology viewpoint that may stop or decrease the incidence of some types of snoring when applied.

Key Indexing Terms
Snoring, Chiropractic, Applied Kinesiology, Hypoglossal Nerve, Hyoglossus, Diaphragm, Pelvic Diaphragm, Tentorium Cerebelli, Submandibular Diaphragm, Insulin, Growth Hormone, Herbs, Manual Muscle Test, MMT, Nutrition, Physiological Phenomena, Functional Medicine, Obstructive Sleep Apnea, Post Pyrandial, Proprioceptors, Muscle Inhibition

Introduction
Snoring has enormous implications for the health of both men and women. It is one of the main factors behind sleep deprivation. Snoring is estimated to cost $29.4 Billion annually and is present in 12.4% of the US population. Its presence increases the risk of certain illness and diseases. Current solutions for snoring include Positive Air Pressue(PAP), psuedoephedra, and weight loss (American Association of Sleep Medicine).
In functional health we have found a nexus involving several areas, including the 3 well known diaphragms; the pelvic, abdominal, cranial, and now a newly coined submandibular diaphragm.

Each of these diaphragms are composed of muscles and/or connective tissue structures which act as a foundation. All are muscular in nature with the exception of the cranial tentorium cerebelli. The submandibular diaphragm acts as an anatomical foundation for many structures above it - most importantly the tongue. We know that muscles are now considered part of the endocrine system and have a profound hormonal impact on the entire organism and at this time it is poorly understood and being elucidated (Roatta S). Recently we have also discovered that insulin has an impact on muscle function (Shin C1, Kim J, Kim J, Lee S, Shim J, In K, Kang K, Yoo S, Cho N, Kimm K, Joo S). Insulin's impact on muscle function has been observed in past years in various spheres anecdotally. Such things as poor muscle performance after sugar ingestion, and the famed insulin dump post extreme exercise or excess sugar consumption are simple examples.

Jargon relating to Snoring.
Submandibular Diaphragm is a neologism – it describes and is inclusive of muscles and connective tissue that lie inferior to the tongue and form a foundation. Psuedoephedra a drug used for symptomatic relief of snoring, The pharyngeal arches are an embryologic

term that refers to the developmental arches present in the developing embryo. These develop into muscles of the mastication, and many structures in the head and neck and relate to a developmental and neurologic nexus to all structures which arise from it. Sleep apnea, OSA- is obstructive sleep apnea. Proprioceptors are nerve endings that relay sensory input. "Meridian therapy" is the stimulation of acupuncture points that alter function and energy in energetic pathways called "meridians." "Nutritional support" would be those supplements given to assist structural corrections. "Diet modification" means changes made to patients' diets. "Grounding" refers to any method of getting a patient in contact with natural earth. It is believes to de-stress the body and assist by decreasing stress level and hence improving muscle testing outcome,

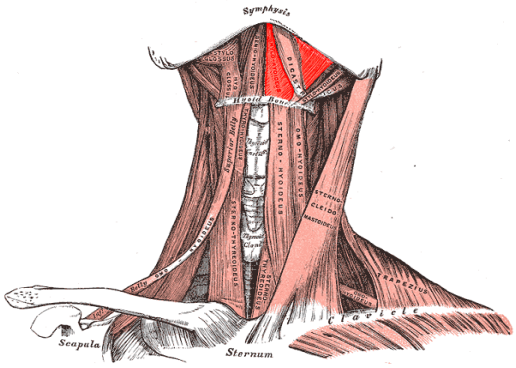


Illustration 1: Gray, Henry. "Anatomy of the Human Body 1918 - Mylohyoid muscle -Public Domain

Mylohyoid is a muscle that originates or near the molars of the mandible and inserts on the hyoid. "TS Line" Stands for Tempero-Sphenoidal line, a mostly diagnostic palpatory line located bilaterally on the skull near the temporal and sphenoidal areas. The clinician palpates this line for nodules that correspond with muscle and possible organ imbaslances.

Snoring Factors

There are many factors that may be related to the causation of snoring. This paper focuses on a few of those that when addressed have proven to be workable solutions to improving this condition in a clinical setting. Other factors will be explored in future papers.

Use of the tongue is constant. It is arguably one of the most used body parts next in line to the heart, diaphragm and lungs.

The tongue is dependent on its foundations – the submandibular diaphragm, and the hyoid. It also is central in a tug of war over the "neutral position" between its 4 extrinsic muscles and to lesser degree its intrinsic muscles. When a person sleeps, the autonomic tone of the muscles determines the tongues position and is based on several factors including normal proprioceptive feedback. These factors will determine the resting position or "neutrality." The position of neutrality ensures a patent airway and no snoring. In the next paragraphs we will review a few of the more common reasons why this autonomic tone and hence position of neutrality are compromised.

Factor 1 -Insulin

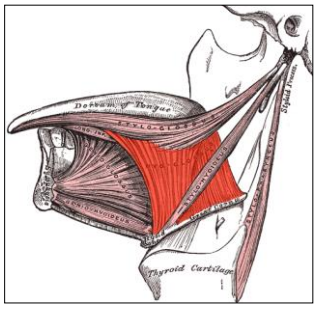
We know that insulin plays an important role in many biological processes. It is the communicating factor that allows the body to access the very thing that keeps it going – glucose. Without proper utilization of glucose either stored or provided by the diet the muscles are left to metabolize and store glucose and they have a limited capacity to do so. As age increases so to does the incidence of snoring and insulin resistance. There is a purported correlation between snoring, and the reported squealae - diabetes. The correlation does not acknowledge that insulin causes snoring, but quite the opposite – that

snoring causes diabetes. This insulin overabundance may impact smaller groups of muscles. There is evidence in mammals that an increase in sympathetic tone increases insulin and may decrease blood flow in skeletal muscle thereby making them weaker and more susceptible to injury. This of course opens the door for another factor which is adrenal dysfunction. The bottom line here is that at this time elevated insulin levels which are epidemic may cause muscle dysfunction which can compromise structure (Doehner W[1,2,] Turhan G[3], Leyva F[4], Rauchhaus M[3], Sandek A[3], Jankowska EA[5], von Haehling S[6], Anker SD[6]).

Factor 2- Diaphragm dysfunction
The submandibular diaphragm (a neoglism) is made of the mylohyoid and serves as a foundation of many structures above. It also serves to balance the hyoid and all muscles that contact it in the stomatognathic system. Simple dysfunction of this diaphragm can be the cause many problems including snoring, TMJ dysfunction, spinal subbluxation, cranial faults, and remote imbalances.

Factor 3 - myodysfunction
Next we will focus on the extrinsic muscles that directly impact the tongue. These muscles are constantly engaged to one degree or another in a perpetual tug of war with regard to positioning of the tongue. If there is a balance of function in these muscles as a cohesive unit it is likely the airway will be better maintained. They are listed as follows;

1. As muscles that are depressors and protrusive and,
2. as muscles that reduce airway dimension, elevate, and or retract.



Text 1: Illustration 1: Gray, Henry. "Anatomy of the Human Body 1918 - Genioglossus and extrinic muscles of othe tongue -Public Domain

1. Extinsic muscles that depress and protrude include;
a. Genioglossus – this is the only muscle that protrudes the tongue and moves it forward. Its origin is on the the genial tuberosity of the mandible.
b. Hyoglossus – the hyoglossus arises on the hyoid bone and performs two motions- retraction of the protruded tongue and depression.
c. Chondroglossus – is considered a part of the hyoglossus. It arises from the lesser cornu of the hyoid and is medial to the hyoglossus. It then blends with the intrinsic muscles of the tongue.

2. Muscles that reduce airway dimension, elevate or retract the tongue.
a. Styloglossus - originates on the styloid process of the temporal bone. It draws the sides of the tongue up to create a trough for swallowing.
b. Palatoglossus – Originates from the palatine aponeurosis. It depresses the soft palate, moves the palatoglossal fold in the direction of the midline, and elevates the back of the tongue during swallowing.

The intrinsic muscles will be discussed in future papers and these include;
Superior longitudinal muscle: It curls the tongue upward and also shortens

Inferior longitudinal muscle: It curls the tongue downward and shortens
Transverse muscle: It narrows and protrudes the tongue.
Vertical muscle: It flattens and broadens the tongue.

TMJ Dysfunction – first pharyngeal arch structures.
Injury or aberrant function of the tongue causes inhibition of several muscles. We see this pattern when a person bites their tongue. It manifests in two ways;
1.) they stop chewing – due to an inhibition of several muscles of mastication and,
2.) they tend to lose their appetite or no longer want to eat which is a somatovisceral and autonomic phenomena.

Other more popular explanations for causes of snoring include obstruction in the nasal passageways, sleep deprivation, consumption of relaxants such as alcohol or other drugs that relax throat muscles, and sleeping on one's back, which may result in the tongue dropping to the back of the mouth.

Discussion

There are no references or techniques in the applied kinesiology armamentarium that directly address the treatment of the underlying causes of the symptom of snoring. Yet many tools are in the toolbox. Those adept a Applied Kinesiology may employ myriad techniques to the resolution on this imbalance.

Insulin excess can be detected using the waist to hip ratio, addressed and supported with several herbs, vitamins and minerals as well as intense diet and lifestyle management. These may also be interpreted using a simple finger stick insulin level tests. In a fair percentage of patients a latissumus dosri inhibition may be present but may only show when perturbed via high carbohydrate or sugar challenges. The muscle test alone cannot be used as the weakness may not be revealed unless the patient is grounded or a unipolar magnet is employed as taught by Dr. Michael Lebowitz.

This must be managed and the one action that must be taken is that resistance to insulin has to be addressed. We know that insulin is likely to create a subclinical inhibition of the depressor and protrusion muscles. This is turn causes a decrease in the airway diameter and potentially resultant sleep apnea. The lack of inhibition of the muscles that close the airway by their antagonists, along with obesity, will cause the airway to be reduced and hence obstruction, snoring, apnea or worse – both. This of course will be magnified in a muscle that is already poorly functioning. The extrinsic muscles of the tongue although rugged are subject to some of the same propriocetive injuries as other skeletal muscles.

The next factor, submandiular diaphragmatic dysfunction is addressed by corrective techniques and includes the use of “blocking and tackling” techniques such as origin and insertion, muscle spindle cell and GTO manipulation. This is a very important area to properly address and stabilize because it is the foundation. The methods of detection in a muscle that is not directly testable are palpation and therapy localization. Various degrees of tenderness will be located in the muscle belly and at the origins and insertions.

Each of the muscles listed above must have any detectable proprioceptive dysfunction addressed – this alone may improve snoring.

Frank pathology is rare in snoring but it is very important and it is implicated in many dysfunctions and disorders most notably diabetes and worsening of sleep and then disorders associated with sleep deprivation. This list is long.

Conclusion

Snoring can be addressed effectively from an applied kinesiology perspective. Muscles are central to maintaining a proper airway. Clinicians can address the muscles, skeletal, nutrition and neurological aspects of snoring. PAP machines and weight loss programs are purported to be effective in making improvements but they do not address the cause. The devices should be used concurrently with applied kinesiology methods to help people achieve new levels of health.

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When Testing for Nothing Can Be Everything

Dr. W. Berglund, D.C., N.D., P.Ac., DIBAK

Abstract

INTRODUCTION: To highlight the concept of medical fasting in the treatment of chronic diseases and provide the latest research on the benefits of medical fasting in the treatment of disease.

OBJECTIVE: To examine the research from around the world pertaining to medical fasting.

METHODS: Reviewing documentary films, books and examining fasting research done in Germany and Russia. Personal experience with fasting.

RESULTS: Simply searching the term medical fasting produced limited results. Medical fasting research done in Russia and Germany has not been translated into English. Information was in relation to fasting before during and after blood tests in hospital setting.

CONCLUSIONS: The results of the research examined concludes fasting is beneficial for chronic diseases such as cardiovascular disease, hypertension, arthritis, allergies, asthma, type II diabetes, obesity, cancer, organ dysfunction, mental illness, autoimmune disease, inflammation and more.

Key Indexing Terms

Sylvie Gilman, Thierry de Lestrade, Goryashinsk Spring Sanatorium, Dr. Natalia Bataeva, Dr. Nikolay, ICHF-Akademie, Buchinger Therapeutic Fasting, Dr. Andreas Michalsen-Charite Hospital, Berlin, Professor Valter Longo-Fasting-Chemotherapy, Medical Fasting

Introduction

Chronic diseases are becoming epidemic along with the number of patented prescription drugs appearing on TV. Doctors of Applied Kinesiology pride themselves on being able to find the cause creating a myriad of symptoms stemming from musculoskeletal, metabolic, mental and emotional origins. In Applied Kinesiology the doctor is always testing for something. In "Quintessential Applications" doctors are taught what to test for first. Is there another test kit we need? This new test kit would contain a therapeutic alternative, one that has existed for centuries. This new "Test Vial" is gaining attention among researchers and physicians. The new vial is a vial of nothing, fasting. The treatment is simple, no supplements for the patient to buy or the doctor to dose. No fancy meals to shop for or prepare. There is overwhelming clinical data pertaining to fasting in the treatment of cancer, diabetes, rheumatoid arthritis, the diseases of the industrialized world. Until recently life expectancy in the United States had been increasing, however illnesses such

as diabetes, obesity, heart disease, hypertension, autoimmunity and cancer are on the rise. So is the consumption of a plethora of prescription medications (as seen on TV) with their all too prevalent toxic side effects. Fasting has been praised by religion for centuries but almost completely ignored by the scientific community and scientific method.

Discussion

It all started with a chance event at a Soviet sanitarium. Dr. Yuri Nikolayev decided to break with tradition by accommodating a bed ridden mentally ill patient that was refusing to eat. On the fifth day of not eating the patient's negativity began to fade. On the 10th day the patient started to walk. On the 15th day he drank a glass of apple juice that was placed on his nightstand and went for a walk. He went on to make a complete recovery and was released from the sanitarium. Quite interesting for a patient that was unable to talk and completely non-responsive to traditional medical interventions, as with the majority of patients institutionalized there. Dr. Nikolayev recalls the strong opposition by the medical world with regard to fasting. Doctors do not understand the essence of fasting he stated. They have been taught that fasting is something bad and for them to think of fasting as being able to cure a disease is incomprehensible. With his first success Dr. Nikolayev undertook to put fasting to the scientific method. He soon discovered that fasting affects not only mental illness, but the entire personality of the person. Dr. Valery Gurvich worked with Dr. Nikolayev for eighteen years. Together they found that fasting has a stimulant and a non-stimulant effect. The stimulant effect takes affect in the first week of fasting, and the antidepressant effect in the first week of starting to eat food again. They observed that fasting had calming sedating effects which can be observed after the crisis of acidosis. They carefully recorded their results and over the years compiled an abundance of research. Dr. Nikolayev had a seventy percent success rate with over 8000 patients. Years after their treatment forty percent still maintained improvement. Dr. Nikolayev noticed not only had their mental symptoms improved, but so had their physical symptoms including hypertension, asthma and eczema.

DR. YURI NIKOLAYEV-THE FIVE STAGES OF FASTING

1. Food deprivation-first two days-patients are given a solution of magnesium sulfate for its laxative effects. In this phase the patient is at risk of being disturbed by any reference of food. Sleep may be disturbed. Patients may feel irritable and have an exacerbation of their symptoms. Blood pressure remains stable while heart rhythm may intensify and be irregular. Throughout the fast water is consumed.

2. Acidosis phase-between the third and fifth days of fasting, food stops causing any stimulation to the patient. The occasional headache and feelings of dizziness may occur. One may feel nausea and a generalized sense of weakness. Blood sugar will drop. The nausea may be due to increased blood acidity while the body is beginning to adapt into using its own fat as fuel.

3. Compensation and balance-during the fourth to seventh day the body regains homeostasis with the patient possibly feeling a bit euphoric. In this stage patients who were

catatonic experience a decrease in that state and their negative feelings begin to disappear. For those patients with auditory hallucinations their inner voices tend to lose intensity.

4. Breaking the fast-food is slowly introduced. First it is given in the form of diluted juices, then whole juices and graded fruit mixed with yogurt. Next cooked vegetables and boiled cereals are introduced.

5. Normal Alimentation-four to six days after breaking the fast is when the appetite of the patient may be significantly increased. This is when the patient may request more food. He may be provided more fruits, bread had plenty of vegetables. The patient may start consuming meat after the seventh day of breaking the fast.

Dr. Nikolayev felt that fasting gives the entire nervous system along with the brain a rest. The body is cleaned of poisons and the tissues and glands are renovated. Certainly the digestive system has a rest. The body does not need to expend energy on digestion and elimination.

Two military doctors(the doctors that follow orders)were given Dr. Nikolaev's clinical data. Dr. Alexey Kokosov had no experience with fasting so he wanted to verify that fasting had therapeutic effects and to explain why it had these therapeutic effects. Dr. Alexey Kokosov and Dr. Valery Maximov took on the task to try to verify and understand why fasting demonstrated widespread therapeutic value. They studied the secretions of the stomach, liver, pancreas and intestines. They examined the bacterial profile, the level of immunity and the exchange of minerals and vitamins. They created a list of indications and counter indications for fasting. Indications for fasting included cardiovascular disorders, gastrointestinal disorders, endocrine disorders, bone and joint disorders, and skin disorders. Contraindications to fasting cancers, tuberculosis, diabetes type I, chronic hepatitis, thrombosis phlebitis and anorexia.

Their challenge was to explain the mechanisms of fasting? Maybe it causes stress on the body which may activate a recovery mechanisms, an auto-regulating processes that may be inactive because of our current lifestyle of continuous eating. Faced with starvation the body sends out an alert. This triggers the production of adrenaline and noradrenaline. During fasting the blood panels of cholesterol, triglycerides and insulin improve. The energy expenditure of the body decreases. The heart slows down, blood pressure decreases and the gastrointestinal system goes into a state of rest. Fasting stimulates the body's own innate healing powers.

Treating 10,000 asthmatic patients through fasting in forty years of practice, Dr. Sergeij Osinin has not experienced a single fatality. Fasting causes a change in the cells of the lung mucosa. Mast cells indicate the presence of histamine which causes a hyper-secretion leading to bronchial spasms. After twelve days of fasting there are no signs of histamines, the cells are full of lipids, states Dr. Sergeij Osinin, Pneumologist (a specialist in diseases of the air passages). In these patients substances which cause edema and inflammation disappeared. Bronchial asthma is a chronic disease and according to conventional medicine it cannot be cured it can only be contained. Without this knowledge so many patients are

condemned to a lifetime of inhalers and steroid type medicines. People can escape this fate. The long-term effects with the study of 1000 patients after seven years, improvement persisted with fifty percent of the patients. Ten to fifteen percent were completely cured. The Academy of Science published these results which have never been translated. The lab results show that fasting works in many therapeutic ways.

Dr. Otto Buchinger was aa Army medical doctor and he had suffered with rheumatic fever and was limited to a wheelchair in 1918. He recovered with two rounds of fasting. His recovery prompted him to research the effects of fasting and to develop patient treatment protocols. The Buchinger Method has become popular in Germany and treatments last between one and three weeks.

A german banker who had an enlarged liver due to the way he did business in Russia, lots of drinking, shrank to normal size after his fasting session.

A woman suffered from severe rheumatism checked into fasting. She had been taking all the medications her doctor had prescribed and was still suffering and becoming exhausted The fasting program has done the opposite instead of wearing her out, it has begun to purify her giving her more energy.

A patient that suffers from psoriatic arthritis comes twice a year for fasting.
Fasting has indeed helped those with rheumatoid arthritis. The patients will need less anti-inflammatory medication.

Dr Francoise Wilhelmi de Toledo, director Buchinger Clinic, fasting should lead the healthcare market has the choice of treatment. Instead there is an extraordinary lucrative market for the treatment of disease especially chronic diseases with drugs. When a diabetic becomes chronic that becomes a great opening to sell medication for several decades.

Taking on the chemical monopoly in the healthcare industry, Germany offers fasting at a dozen public hospitals. Fasting is excellent for people suffering from metabolic syndrome, cardiovascular disease and rheumatism. The treatments are reimbursed by the Social Security system. Dr. Francoise Wilhelmi de Toledo has not been privy to the Russian research but he is noticing hormonal changes in the body from his research.

Dr. Andreas Michalsen, Head of Service, Charite Hospital, Berlin(this is the largest public hospital in Europe) states with fasting we have found the existence of epinephrine, leptin, norepinephrine, dopamine and serotonin. These are hormones that have a strong regulatory influence on metabolism and also influence mood. The level of serotonin is increased. Patients have a reduction in pain. They experience an up-regulation of the sensitivity of insulin receptors, overcoming insulin resistance. Patients that fasted are more apt to adopt a healthy life level style after their fast which is conducive to maintaining good health. Dr. Andreas Michalsen says if he had been studying a new drug and got these results I would be getting calls every day for proposals and financial aid money for research. When it comes to fasting people just say oh that is interesting. There is no monetary incentive for research. Therefore, it is very easy for critics and skeptics to say there is not enough studies

to prove it works. Increasingly people with chronic conditions are not being helped by current mainstream medicine a.k.a. pharmacology. This means we need other alternatives. There are three major studies on rheumatism, rheumatoid arthritis, diabetes and hypertension which show that fasting has excellent results and it all began with the cures Dr. Nikolaev was achieving with mentally ill patients.

The best things in life are free.

The critics of fasting keep saying that fasting is dangerous. What are the limits of fasting? Is fasting dangerous? Is the overconsumption of genetically modified corn, wheat and soybeans mixed with just the right proportion of salt, high fructose corn syrup and vegetable oils that is driving the obesity epidemic dangerous? Is the body better adapted for feast or famine?

Let's explore the biological and physiological aspects of fasting. The male Emperor Penguin is hands down the Emperor of fasting. The vigilant male penguin will go without food for as long as four months while the egg he sits on is incubating. Pr. Yvon le Maho, CNRS Strasbourg, Member of the Academie des Sciences knows the Emperor Penguin is a professional faster. Fasting can be dangerous if the body feasts on itself. In the Penguin fats provided ninety six percent of the energy while protein only four percent during the fast. The fasting process can be divided into three phases. In the first twenty-four hours the body uses up its glucose reserves. For a brief period it may use its protein reserves. Then it switches to using lipids for energy. Many other animals have the same mechanism. Fasting rats are similar to the Penguins. The basic fasting principle which allows an organism to withstand prolonged periods of starvation is a common mechanism in nature. This observation opens up some unique perspectives to fasting with huge implications. If this mechanism is common in nature it means that it has existed since the time animals first appeared on the planet. Humans have this mechanism. So fasting instead of being something that is dangerous is simply an adaptation which has existed since the beginning of life and within the limits that have been identified is simply not dangerous. The ability to fast comes from a coping mechanism that has existed since the dawn of life. Research has determined that a man weighing seventy kilograms has fifteen kilograms of fat storage enough to allow a healthy individual to fast for forty days. This number stood out to me. It is significant because Jesus fasted for forty days. His experience while fasting is also of great significance. Certainly fasting was part of some ancient knowledge. From the perspective of evolution it is likely that survival involved periods of fasting, contrary the situation that we have today with the overabundance of food and overabundance of eating. It is not surprising that the body is more adept at starvation then it is at overconsumption. History has seen times of extreme gluttony and the diseases that resulted. It is obvious that the body faces difficulties when is does not fast and eats constantly. Our genetic heritage is far less adapted to overeating than it is to starvation. The human body is better equipped to deal with starvation than indulging in constant mindless snacking. In today's modern world food is everywhere or should I say fake food is everywhere, laced with excitotoxins stimilating us to eat more and more.

Does fasting activate certain reflexes rooted in the body? The benefits of fasting could be written in our genetic code. The answer lies in a research project done by an Italian scientist working in a University of Southern California laboratory. His results could not have been predicted by mainstream scientific thought or even what we call common sense. He was trying to find what no one was looking for in the field of gerontology, the study of aging and delaying chronic diseases that come with age. Researchers have long known that limiting food supply allows an animal to live a longer healthier life and it is known as calorie restriction. Now think about the extreme case. Give fasting mice high doses of very toxic chemotherapy, crazy right? Mice with cancer were separated into two groups. Pr. Valter D. Longo, Biogerontologist, University of Southern California (USC) designed this experiment and the results were counterintuitive. The experiment involved injecting mice with four to five times as much chemotherapy agents that would be toxic to a person. One group would be fed normally the other would be given only water. At the end of the experiment all of the fasting mice were alive and all the fed mice were dead. The experiment was immediately repeated with the same results. It is hard to imagine how you can become stronger when you are fasting. Is it not?

This is big, big, big news.

Dr. Tanya Dorff, Oncologist, Norris Cancer Hospital, states that current cancer treatment are very destructive. They seem to attack everything so it is important to protect the body while maximizing the chemotherapy agent. Cancer therapy recommends eating before chemotherapy, however research may show that fasting is better. Far better because it reduces the side effects. Dr. David Quinn, Director of Therapeutic Trials Programs, Norris Cancer Hospital allowed a County Judge from Los Angeles, Nora Quinn, to fast before chemotherapy. She had read an article in the Los Angeles Times about Dr. Longo's research. She decided to fast before her chemotherapy. She fasted for five days before the first treatment and did very well. Her oncologist talked her out of fasting for the next round of chemo and she suffered miserably. Feeling so bad she decided to fast for the last two chemotherapy sessions and did much better again. Nora says there is no question in her mind that she did much better by fasting. She did not develop what she calls "Chemo Brain," like some of her friends that had gone through chemotherapy before her.

How does fasting affect the chemotherapy itself? The researchers at USC discovered that fasting causes a change in gene expression. By taking a cell sample from muscle, heart, and liver tissue it was discovered that after two days of fasting the gene expression of these normal tissues switched into a protection mode. This happened very quickly and seems to be coming from some sort of ancient trigger, or genetic memory. Fasting protects healthy cells. Does it protect cancer cells? The sample of cancer cells did not exhibit this ancient genetic protection. In fact just the opposite happened. The cancer cells became much more vulnerable. Cancer cells do not like low glucose environments. For cancer cells fasting is a nightmare.

Applied Kinesiology Procedures

Take a comprehensive case history with emphasis on cardiovascular issues, respiratory issues including asthma, digestive issues, diabetes, metabolic syndrome, insulin resistance, chronic inflammation and optimal weight for their height.
Order appropriate laboratory diagnostics, including a CBC with a five cell differential, sedimentation rate, C-reactive protein, hemoglobin A1c, liver and kidney function tests, etc, see appendix.

Test the Applied Kinesiology digestive organ related muscles for functional inhibition and facilitation. Note the results.

Add the use of a TL to the appropriate neurolymphatic reflex to screen for 51%ers.
Stomach related muscle-pectoralis major clavicular division, anterior neurolymphatic reflex at the sixth intercostal space from the mammillary line to the sternum on the left.
Small Intestines related muscle-quadriceps, anterior neurolymphatic reflex along the costalchondral junction of the eighth through eleventh ribs
Pancreas related muscle-latissimus dorsi, anterior neurolymphatic reflex at the seventh intercostal space on the left.

Liver muscle-pectoralis major sternal division, anterior neurolymphatic reflex at the fifth intercostal space from the mammillary line to the sternum on the right.
Gallbladder muscle-popliteus, anterior neurolymphatic reflex at the sixth intercostal space from the mid-mammillary line to the sternum on the right.
Large intestine muscle-tensor fascia lata, anterior neurolymphatic reflex anterior lateral thigh bilaterally.

Lung muscles-deltoid, anterior neurolymphatic reflex at the third intercostal space in near sternum; anterior serratus, anterior neurolymphatic reflex third, fourth and fifth intercostal space is near sternum; coracobrachialis, anterior neurolymphatic reflex third, fourth and fifth intercostal space near sternum. The use of these muscles are indicated for testing with patients experiencing respiratory symptoms such as asthma. (Recall earlier in the paper: treating 10,000 asthmatic patients through fasting in forty years of practice, Dr. Sergeij Osinin has not experienced a single fatality, and significant inprovements in respiratory symptoms. Fasting causes a change in the cells of one's lung mucosa). Consider this highly significant!

Note all functionally inhibited muscles, with or without 51% challenge.
Note any muscles which do not inhibit properly noting their hyperactivity.
Measure the range of motion of one or more joints such as hip abduction.

Challenge the noted functional inhibited muscles with the patient ingesting their favorite food, note results. Also challenge the functional facilitated muscle for inhibition with food, note results.

Challenges the noted muscles using water, note results.
Challenges the noted muscles with rebreathing in a paper bag (this is a citric acid cycle challenge which would be the main energy cycle used during fasting), note results.

Challenge the noted muscles with deep breathing while performing aerobic activity for approximately 20 seconds (this is a citric acid cycle challenge which would be the main energy cycle used during fasting), note results.

Challenges the noted muscles using a fat source such as coconut oil held in the mouth if the patient is not allergic to oil, note results.

Challenges the noted muscles with MCT oil held in the mouth (MCT is converted to ketones in the liver), note results.

If the food challenge does not facilitate the functionally inhibited muscles or even inhibits the previously facilitated muscles consider fasting.

If rebreathing into a paper bag facilitated inhibited muscle consider fasting.
If aerobic activity facilitated inhibited muscles consider fasting.

If one of the challenging items increased the measured joint range of motion consider fasting.

If a fat facilitated inhibited muscle consider fasting.
If MCT oil facilitated inhibited muscle consider fasting.
If water facilitated inhibited muscle consider fasting.

The patient may be monitored and checked every day. As long as food challenges negative and the patient has plenty of fat to burn the fast may continue. (Special thanks to Dr. Michael Lebowitz)

Before recommending fasting to any patient the doctor should become familiar with the process himself. Dietary guidelines should be set to gradually cut down on the amount of food consumed each day rather than entering a fast cold turkey. When gradually reducing the consumption of food, one can juggle the combination of protein, fat and carbohydrate stimulating the body to burn fat, which can help in the transition of fasting since the body will be burning fat during the fast. The inflammation markers from the laboratory assessment are important to note. Increased inflammation markers are a reason to consider fasting. When one consumes food inflammation increases in the body because the process of digestion stimulates inflammation. For those that have never fasted I suggest starting with a 12 hour fast after two or three days of reducing one's normal consumption of food. Next one can consider a 24 hour fast. In fact the body needs at least 24 hours to deplete it's stored glycogen. Ketone strips should be used determine when the body begins to burn fat. It usually takes at least 24 hours before ketones will appear in the urine. It will take about two or three days for one's hunger to disappear unless a person has already trained their bodies to burn fat. Fasting will give the digestive tract a chance to rest and heal. In fact, an MIT study showed that fasting for just 24 hours boosts the creation of stem cells. The researchers found that stem cells from the fasting mice doubled their regenerative capacity. In the book "Periodic Fasting," studies done by "George F. Cahill Jr." showed an eight fold

increase in growth hormone production over an eight day fast. For many decades, scientists have known that low calorie intake is linked with enhanced longevity in humans. Fasting can be done solely with water or with a soup broth preferably consuming no more than 250 calories per day with zero sugar and very limited carbohydrates. So check your schedule and set a date on your calendar to experience fasting. Once you become an expert on fasting from your own experience you will be able to guide your patients into the same experience.

Conclusion

Sadly much of the medical research done on fasting over the last forty years has not been translated into English. There is still a place that the government pays and encourages fasting. Three cheers for the Goryaschinsk Sanatorium! This Siberian Republic should make us reconsider our healthcare model which often sees disease has a marketing opportunity. It should make us think twice about the mirage of growth without limits when even evolution itself has programmed us to cope with deprivation. Adding a "Test Kit of Nothing," shows promise for the Doctor of Applied Kinesiology. Fasting has never been taken seriously by the medical profession. The survival of the fasting mice that were given five times the chemotherapy dosage that would be given to the typical cancer patient, in contrast to the deaths of the mice that didn't fast is certainly eye-wide-opening. This could have great implications for normal people living in our current toxic world. The results of Professor Valter D. Longo's experiment which has been replicated should warrant the attention of holistic medical practitioners. In the spirit of our founder Dr. George Goodheart, it is the Doctor of Applied Kinesiology that should be leading the way just like George. Consider the fact fasting has beenGoodheart programmed into our physiology, since the beginning of our early evolutionary development. Our ancient ancestors certainly experienced cycles of feast and famine. Now we have food twenty four-seven. Food is everywhere. We have a food industry that employs a crackerjack team of marketers, chemists, behavioral biologists, food technologist, psychologist, neuroscientist, nutritionist, and functional MRIs to blend genetically modified corn, wheat and soybeans with just the right combination of salt, high fructose corn syrup and rancid vegetable oils in order to light up the "bliss center of the brain."getting their customers hooked. Then we have diets. When it comes to diets there certainly seems to be no lack. There is the Standard American Diet (USDA Food Pyramid), the Paleo Diet, the Mediterranean Diet, the Atkins Diet, the Ketogenic Diet. Next "The Plant Paradox" suggested by Dr. Gundry in which plants defend themselves with chemicals called lectins against the wanton devouring by Vegans or Vegetarians. The list is long and beyond this paper to name them all. Each of these diets trumpets the virtues of eating this way or that way and their followers tell us why we cannot be healthy unless we eat that way. Yet one man's food is another man's poison. We have lost our way in the food forest because of all the trees blinding us from the "Sacred Secret" of the ages not eating or fasting.

Fasting also has a spiritual or religious basis. Fasting is a practice found throughout the Scriptures. A fast in the Bible is usually a voluntary, total abstinence from food for a set time for the purpose of devoting oneself to seeking God. Fasting denies our flesh what it wants so that we can focus more clearly on strengthening our spirits. Research has shown a healthy male can fast for forty days. The exact period of time that Jesus fasted. Fasting

gives our digestive track a vacation and we all know what a wonderful thing a vacation can do for our health and well-being. Our digestive tracts can go on vacation even when we are extremely busy.

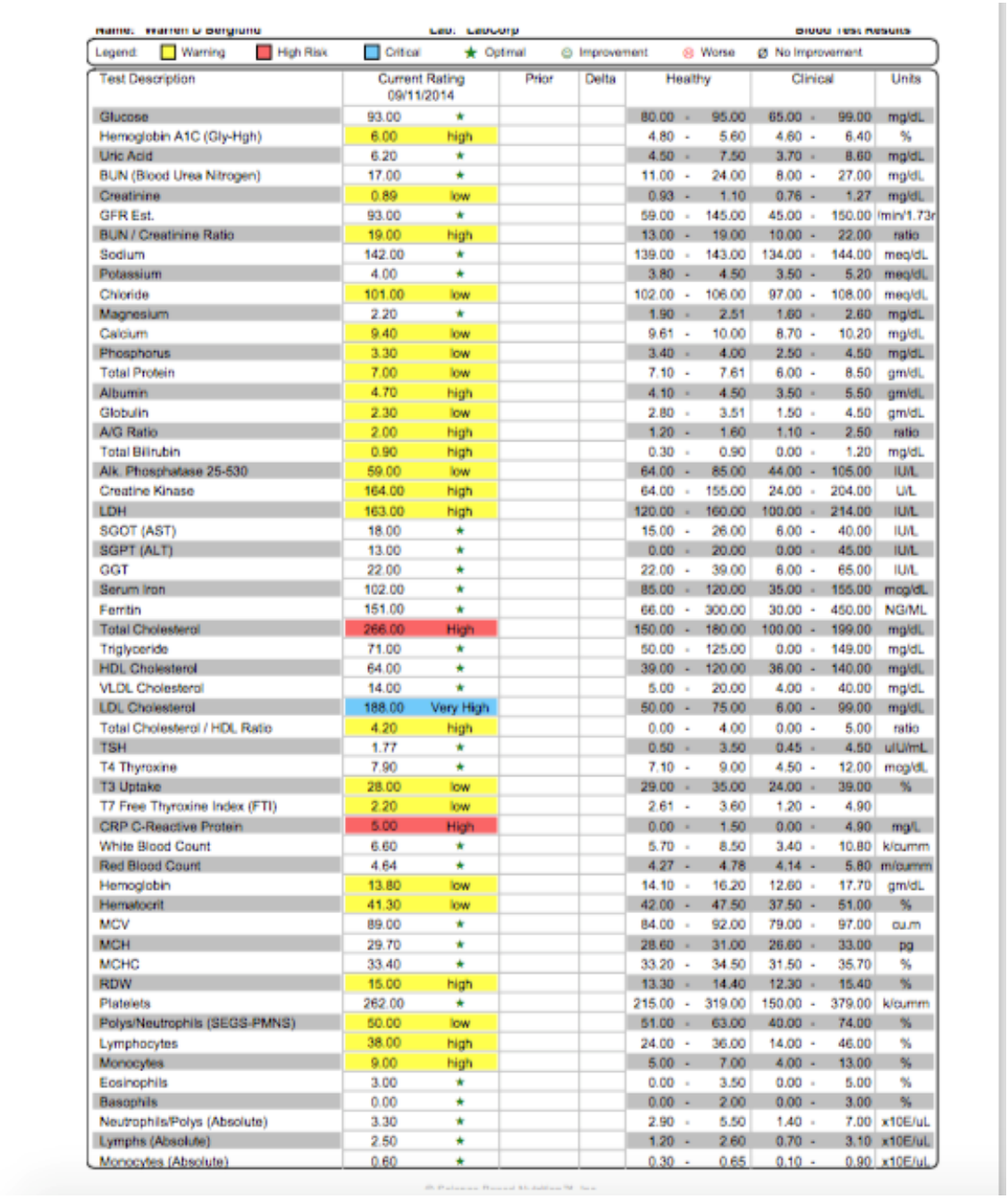
Fasting is an art. I suggest doing fasting research then start your first fast on a Friday, if you have a normal work week to experience the fast while not having the demands of work. If you have not fasted before it is the first few days that are rough. By Monday morning you may not feel the need to eat and you can extend it beyond the weekend. Each person will have to experiment with the fasting concept, but as a suggestion once a month over a weekend would have wonderful benefits no matter what kind of healthy diet you do eat. Fasting definitely takes mind over matter and some discipline. With practice maybe we can join the 30 plus day club.

On a personal note: Having high blood pressure after a spinal cord injury, I tried many supplements and a couple of prescription medications with little results. After fasting both my diastolic and systolic pressure dropped 20 points. I had fasted more often in my 20s and 30s after reading about calorie restriction and longevity. I'm bringing it back as a regular practice.

You may have heard of Upton Sinclair. A very famous American author writing over one hundred books including "The Jungle." Did you know he wrote a book on fasting?

The best things in life are free.

Appendix



Name: Warren D Berglund Lab: LabCorp Blood Test Results

Legend: Warning | High Risk | Critical | ★ Optimal | ☺ Improvement | ☹ Worse | ∅ No Improvement

Test Description	Current Rating 09/11/2014		Prior	Delta	Healthy	Clinical	Units
Glucose	93.00	★			80.00 - 95.00	65.00 - 99.00	mg/dL
Hemoglobin A1C (Gly-Hgh)	6.00	high			4.80 - 5.60	4.60 - 6.40	%
Uric Acid	6.20	★			4.50 - 7.50	3.70 - 8.60	mg/dL
BUN (Blood Urea Nitrogen)	17.00	★			11.00 - 24.00	8.00 - 27.00	mg/dL
Creatinine	0.89	low			0.93 - 1.10	0.76 - 1.27	mg/dL
GFR Est.	93.00	★			59.00 - 145.00	45.00 - 150.00	/min/1.73r
BUN / Creatinine Ratio	19.00	high			13.00 - 19.00	10.00 - 22.00	ratio
Sodium	142.00	★			139.00 - 143.00	134.00 - 144.00	meq/dL
Potassium	4.00	★			3.80 - 4.50	3.50 - 5.20	meq/dL
Chloride	101.00	low			102.00 - 106.00	97.00 - 108.00	meq/dL
Magnesium	2.20	★			1.90 - 2.51	1.60 - 2.60	mg/dL
Calcium	9.40	low			9.61 - 10.00	8.70 - 10.20	mg/dL
Phosphorus	3.30	low			3.40 - 4.00	2.50 - 4.50	mg/dL
Total Protein	7.00	low			7.10 - 7.61	6.00 - 8.50	gm/dL
Albumin	4.70	high			4.10 - 4.50	3.50 - 5.50	gm/dL
Globulin	2.30	low			2.80 - 3.51	1.50 - 4.50	gm/dL
A/G Ratio	2.00	high			1.20 - 1.60	1.10 - 2.50	ratio
Total Bilirubin	0.90	high			0.30 - 0.90	0.00 - 1.20	mg/dL
Alk. Phosphatase 25-530	59.00	low			64.00 - 85.00	44.00 - 105.00	IU/L
Creatine Kinase	164.00	high			64.00 - 155.00	24.00 - 204.00	U/L
LDH	163.00	high			120.00 - 160.00	100.00 - 214.00	IU/L
SGOT (AST)	18.00	★			15.00 - 26.00	6.00 - 40.00	IU/L
SGPT (ALT)	13.00	★			0.00 - 20.00	0.00 - 45.00	IU/L
GGT	22.00	★			22.00 - 39.00	6.00 - 65.00	IU/L
Serum Iron	102.00	★			85.00 - 120.00	35.00 - 155.00	mcg/dL
Ferritin	151.00	★			66.00 - 300.00	30.00 - 450.00	NG/ML
Total Cholesterol	266.00	High			150.00 - 180.00	100.00 - 199.00	mg/dL
Triglyceride	71.00	★			50.00 - 125.00	0.00 - 149.00	mg/dL
HDL Cholesterol	64.00	★			39.00 - 120.00	36.00 - 140.00	mg/dL
VLDL Cholesterol	14.00	★			5.00 - 20.00	4.00 - 40.00	mg/dL
LDL Cholesterol	188.00	Very High			50.00 - 75.00	6.00 - 99.00	mg/dL
Total Cholesterol / HDL Ratio	4.20	high			0.00 - 4.00	0.00 - 5.00	ratio
TSH	1.77	★			0.50 - 3.50	0.45 - 4.50	uIU/mL
T4 Thyroxine	7.90	★			7.10 - 9.00	4.50 - 12.00	mcg/dL
T3 Uptake	28.00	low			29.00 - 35.00	24.00 - 39.00	%
T7 Free Thyroxine Index (FTI)	2.20	low			2.61 - 3.60	1.20 - 4.90	
CRP C-Reactive Protein	5.00	High			0.00 - 1.50	0.00 - 4.90	mg/L
White Blood Count	6.60	★			5.70 - 8.50	3.40 - 10.80	k/cumm
Red Blood Count	4.64	★			4.27 - 4.78	4.14 - 5.80	m/cumm
Hemoglobin	13.80	low			14.10 - 16.20	12.60 - 17.70	gm/dL
Hematocrit	41.30	low			42.00 - 47.50	37.50 - 51.00	%
MCV	89.00	★			84.00 - 92.00	79.00 - 97.00	cu.m
MCH	29.70	★			28.60 - 31.00	26.60 - 33.00	pg
MCHC	33.40	★			33.20 - 34.50	31.50 - 35.70	%
RDW	15.00	high			13.30 - 14.40	12.30 - 15.40	%
Platelets	262.00	★			215.00 - 319.00	150.00 - 379.00	k/cumm
Polys/Neutrophils (SEGS-PMNS)	50.00	low			51.00 - 63.00	40.00 - 74.00	%
Lymphocytes	38.00	high			24.00 - 36.00	14.00 - 46.00	%
Monocytes	9.00	high			5.00 - 7.00	4.00 - 13.00	%
Eosinophils	3.00	★			0.00 - 3.50	0.00 - 5.00	%
Basophils	0.00	★			0.00 - 2.00	0.00 - 3.00	%
Neutrophils/Polys (Absolute)	3.30	★			2.90 - 5.50	1.40 - 7.00	x10E/uL
Lymphs (Absolute)	2.50	★			1.20 - 2.60	0.70 - 3.10	x10E/uL
Monocytes (Absolute)	0.60	★			0.30 - 0.65	0.10 - 0.90	x10E/uL

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