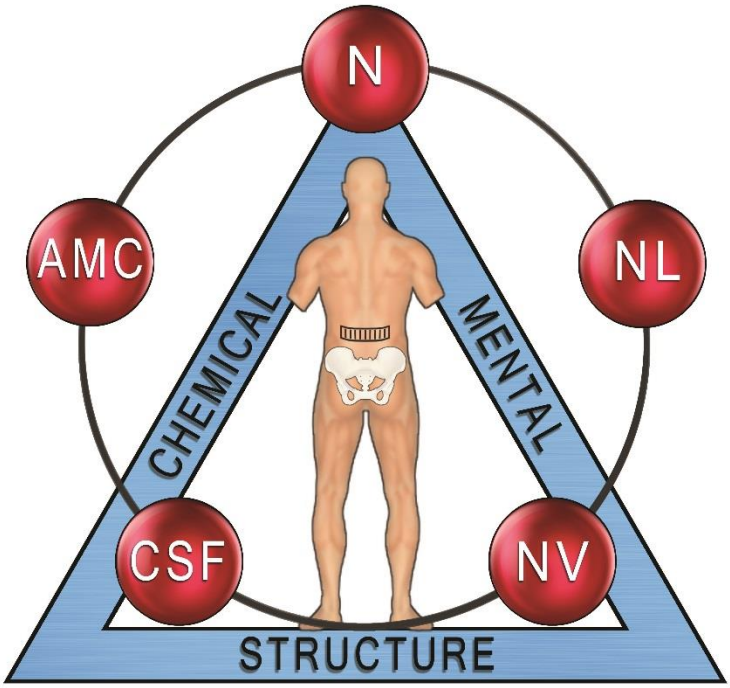


INTERNATIONAL COLLEGE OF APPLIED KINESIOLOGY U.S.A.

Experimental Observations of Members of the ICAK

Volume 1, 2019-2020

Seventieth Collection of the Proceedings of the Annual Meeting

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

Experimental Observations of the Members of the ICAK

Volume I, 2019-2020

Proceedings of the Annual Meeting

Professional Applied Kinesiology™

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

Experimental Observations of the Members of the ICAK

Volume I, 2019-2020

Proceedings of the Annual Meeting

Presented:

July 25-28, 2019
San Diego, Calif.

Publications Staff:

Angela Capra, Executive Director
Chalise Shaw-McClaran, Membership & Publications Manager

© 2019 All rights reserved. No part of this publication may be reproduced or transmitted in any form without permission from the publisher, ICAK-U.S.A.

Message from the Chairman

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

For over 55 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 San Diego, CA!

Introduction

This seventieth collection of papers from members of the International College of Applied Kinesiology®-U.S.A. contains 15 papers written by sixteen 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.

Reproductions—The entire contents of the *Proceedings of the ICAK-U.S.A* .is protected by copyright, and no part may be reproduced by any means without prior permission from the publisher. In particular, this policy applies to the reprinting of an original article in another publication and the use of any illustrations or text to create a new work.

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*.

Public Domain: Includes works with expired copyrights, US government work, or when author dedicates their work to public domain.*

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

Experimental Observations of Members of the ICAK

[redacted]

Volume 1, 2019-2020

Common Cranial Fault Found in Infants Delivered by Caesarean Section

Madison Grzeszkowiak, D.C.

Abstract

Infants born via Caesarean delivery (C-section) seeking care for Applied Kinesiology between the ages of 1 day old and 6 months will most likely present with a jammed Cruciate Suture (inter-maxillary). Other cranial faults are usually present in C-section infants but a jammed Cruciate Suture seems to be the most common.

Key Indexing Terms
Caesarean Birth, Cranial Faults

Introduction

As an infant passes through the vaginal canal, it is common for the sutures of the skull to slightly overlap to allow for passage through the limited space. Many practitioners who utilize craniosacral therapy believe this natural and normal process through the birth canal aids in stimulation and facilitation of proper cranial rhythm. Therefore, any type of traumatic delivery (C-sections, forceps, stalled labor, breech presentation etc) can potentially have an adverse affect on cranial rhythm. Interestingly, we have two "fail safe" ways to help induce cranial rhythm: crying and breastfeeding (sucking). C-section infants, especially those born without mother going through any labor at all, are at the highest risk of experiencing disruption to cranial rhythm and presenting with cranial faults. Cranial faults can result in numerous health issues, which can manifest right away as in colic, difficulty latching/nursing, etc, or later on in life. Applied Kinesiology has several challenges and corrections for different cranial faults. For this case series, the focus will be on suture faults. Most commonly corrected in the direction of positive challenge on the phase of respiration that abolishes the weakness (difficult to find phase of respiration for infants). The purpose of this case series is to encourage Applied Kinesiology practitioners to utilize these corrections for newborns; especially those born via C-section, with focus on releasing jammed Cruciate Sutures.

Discussion

This study included 10 infants born via C-section between the ages of 1 day and 6 months old. Nine of which presented with a positive challenge to the Cruciate Suture (all nine tested positive for separation of a jammed Cruciate Suture). The one infant who did not was receiving additional cranial/manual therapy prior to her first visit to our office. Seven

patients were tested via a surrogate muscle tester (mother or father) whom had been tested and cleared of neurological disorganization prior to the infant's treatment. Three were treated after palpation only (no muscle testing involved). All nine patients were tested/palpated for proper function of the Cruciate Suture. All patients tested clear of jammed Cruciate Sutures after providing appropriate AK cranial corrections for this suture. Eight patients showed for other cranial faults in addition to the jammed Cruciate. Only two of the patients re-tested positive for a jammed Cruciate Suture on follow-up visits (these were the two eldest patients at 5 and 6 months of age). Four patients were not seen again after the initial visit due to parents finding relief in the symptoms which brought them to the office in the first place. In an interesting comparison of 20 or more babies born vaginally checked for a jammed Cruciate Suture, only 1 tested positive. This one infant was fourth baby born to the mom in under 10 years and was born after less than 40 minutes of labor, potentially not giving the infant enough time in the vaginal canal to properly stimulate craniosacral rhythm.

Conclusion

This case series shows the necessity of checking for a jammed Cruciate Suture in infants born via C-sections. At this time, it is unknown as to why this specific cranial fault is so apparent in C-section babies. Further testing is needed to find other common cranial faults for C-section babies. It would also be ideal to have a larger testing group, as this was a fairly small case series.

References

1. http://www.country-doc.com/osteopathic_cranial_treatment_for_infants_and_children.html

2. Netter, Frank H. (2011) *Atlas of Human Anatomy 5th Edition.* Philadelphia, PA: Saunders Elsevier.

3. Walther, David S. (2000) *Applied Kinesiology Synopsis 2nd Edition.* Mission, Kansas: Triad of Health Publishing.

© 2019 All rights reserved.

Correction of Early Extension in the Golf Swing

Todd L. Overdorf, D.C., D.I.B.A.K., D.C.B.C.N., D.A.A.I.M

Abstract

This paper will describe the importance of Applied Kinesiology (AK) in the assessment and correction of the Gluteus Maximus (GM) and hamstring muscles that create faults in the golf swing and more specifically, correcting the problem of "Early Extension."

Key Indexing Terms
Golf, Early Extension, Posterior Chain, Applied Kinesiology

Introduction

The golf swing is a complex movement of the whole body to generate power to a golf ball to propel it great distances with accuracy. This movement relies on the coordinated sequence of muscle activation to produce a fluid and, more importantly, a reproducible movement.

The posterior chain of the human body begins at the flexor hallicus longus and ends at the occipitalis muscle on the skull, the largest of these muscles being the gluteus maximus and hamstrings. Efficient standing posture requires us to have our weight centered just anterior to our calcaneus to keep balanced between anterior and posterior sides of our body. This allows for optimal weight distribution and minimal use of energy. Many people have a resting standing posture primarily weighted further forward of optimal which is signaling a weakness in the posterior chain somewhere. When seen in the portion of the population that must stand for long periods of time, this can lead to fatigue.

Neurological and functional weaknesses of the posterior chain, and specifically for this paper, the gluteus maximus and hamstrings, are often seen in the general population and need to be corrected with AK technique and very commonly appropriate rehab procedures need to take place afterward. Correction of these two muscle pattern imbalances can have a significantly large positive effect on golf swing biomechanics and remedy early extension.

Early extension is a term applied to the golf swing which refers to some point in the swing of losing the body's set up angles by thrusting the hips forward. This action causes an immediate loss of spine angle with a subsequent loss of power in the swing. Not only will this reduce swing speed which results in a loss of distance, but the golfer is then forced to manipulate the clubface with the hands to square it through impact. This then increases the likelihood mis-hits of any kind which can produce hooks, slices, and even the dreaded shank. This is a common problem that affects more than two thirds of amateur golfers that nearly all touring professionals avoid.

Applied kinesiology gives us the tools necessary to address and correct this issue easily and efficiently.

Discussion

Ben Hogan stated in his book "Five Lessons" that at address, the golfer should "feel a sense of heaviness in your buttocks" and "your weight should be a little bit more on the heels than on the balls of your feet, so that, if you wanted to you would be able to lift your toes inside your shoes."[1] What is Mr. Hogan saying here? He is telling us the importance of the posterior chain. In studying the golf swing, an active posterior chain gives the golfer the ability to rotate around an axis (the spine). All too often, an instructor may point to the fact that a golfer is not rotating their hips enough and taking the club back too far inside with their arms in the backswing and/or sliding their hips excessively in the downswing. Either of these issues will likely result in the golfer having to stand up in the downswing to make room for their arms. However until the golfer addresses the physical restrictions that are causing these movement patterns, no amount of coaching will eradicate the swing flaws.

Many right-handed amateurs want to create a right to left ball flight (opposite for left-handed players), commonly known as a draw, to produce more distance off the tee. The problem being, if early extension is happening due to weakness in the posterior chain, it is almost impossible to create this type of ball flight. Their hips thrust toward the ball during the downswing forcing the club to take an out-to-in, slicing path. The body has blocked the path it would need to take in order to hit a draw.

Spine Angle

Spine Angle (forward bend at the hips) is the angle which the spine makes compared to vertical. On average, at address, PGA tour players have 30-40 degrees of forward flexion of their spine down towards the ball. They then maintain that angle and many actually decrease it by 2 degrees at impact.[2] Good posture and correct spine angle are important because it allows the player to swing down at the ball with an acceptable angle of attack. Early extension creates a subsequent loss of spine angle with a result of decreased club head speed through impact.

Photos Courtesy of Titlest Performance Institute

Hip motion and sequencing on the PGA tour Extreme biomechanical forces on the spine have been long associated with the modern golf swing.[3] Research has been done to investigate the forces applied to the lumbar spine throughout the modern golf wing. Using a 5-iron, forces of compression, shear, lateral-bending, and rotational loads on L3-4 lumbar spine of four professional golfers were calculated. Compressive load was found to be approximately 7,500 N which represent forces equivalent to about 8 times body weight.[4] In comparison, running produces compressive forces equal to approximately 3 times body weight.[5] Football linemen apply compressive forces of approximately 8,600 N when making contact with a heavy blocking sled.[6] It is also worth noting that studies of cadavers have elucidated that disc prolapse occurs with compressive loads of around 5,500 N.[7]

Knowing that club head speed is paramount and knowing that the legs and hips control club head speed, the tour player is going to focus on turning his hips as fast as possible.[8] A common theme among them is they are trying to create as much delay as possible (known as separation) in their upper body from rotating along with their hips. This creates what is called “lag”. The more lag in the swing, the more ball compression that happens at impact. More ball compression means it will travel farther. The problem here is they are turning

their hips at such a high rate of speed, they must slow them down so that the upper body can catch up. To do this, they extend their right knee which not only slows the forward hip rotation; it actually will cause the hips to rotate backwards while the upper body is simultaneously moving forward. For a right hand golfer, the lumbar spine is continuing to rotate counter-clockwise and the pelvis is rotating clockwise. This torque on the lumbar spine is a large reason why so many PGA tour players are dealing with lower back symptoms. When studying swings in slow motion, you can see how violent of a motion this is.

Assessment and Treatment

The major muscles of the posterior chain are:

- Flexor hallicus Longus
- Posterior tibialis
- Gastrocnemius
- Soleus
- Medial and Lateral Hamstrings
- Gluteus Maximus
- Latisimus Dorsi
- Trapezius
- Rhomboids
- Splenius cervicis and capitus

In AK, we are very aware that a weakness in any of these can create a ripple effect resulting in posterior chain dysfunction and eventual early extension in the golf swing. Neurological weaknesses of the GM and hamstrings should be addressed via classical AK techniques accordingly utilizing the myriad of options available.

One of the most common faults seen in practice is that of a bilateral GM. In AK, this is commonly known to be related to a fixation pattern of the upper cervical spine.[9] A fixation is simply an area of the spine that is lacking movement. Because muscles move bones, it is imperative to address the muscles that attach to the upper cervical spine and more specifically the levator scapulae, neck flexors and extensors. Imbalances of these cervical spine stabilizers can create posterior chain dysfunction.

Weakness of the hamstrings can be a result of many imbalances. For example, all muscles must have an anchor and as such the GM helps to anchor the hamstring via its effect on the ischium. If the GM is not engaging efficiently, the hamstrings will have a secondary weakness, so correction of the GM corrects the hamstring weakness. Imbalances of the lower lumbar spine and sacrum often relate to hamstring weakness. Unilateral and bilateral hamstring weaknesses are many times related to an anterior lower cervical or hidden cervical disc.

Although this is not a discussion of the psoas, this author wrote a paper titled, “The Secondary Psoas”, describing dysfunction of the posterior tibialis (PT) and flexor hallicus longus (FHL), because of their affect upon talus stability, and relating them to a reflexively weak psoas.[10] The PT and FHL are the beginning of the posterior chain and as stated earlier,

any weakness in any part of the posterior chain will create a ripple effect of weakness elsewhere. With the primary hip extensors weak and the primary hip flexor weak reflexively, early extension is almost inevitable.

Functional vs. Neurological Strength – The deep squat test

In AK we are testing the neurological integrity of the muscle to resist a force. The muscle can be neurologically intact and yet functionally weak, which can lead to recidivism and re-injury due to the lack of physical strength necessary to perform the action necessary of that muscle.

To test the functional strength necessary to resist early extension in the golf swing, the deep squat test is an easy screen for the patient. This one test can assess bilateral, symmetrical and functional mobility of the hips, knees and ankles. It can be both diagnostic and therapeutic.

Standing with their toes shoulder-width apart and pointing straight forward, the patient makes a fist and maximally flexes their arms so that their thumbs are touching their upper trapezius. With the elbows in front, squat down while keeping the chest high. The buttocks should be lower than the knees. The spine and shin angle should be the same. If the patient cannot with perform this basic test it is likely they will have the early extension swing characteristic.

If this test is failed post treatment, a functional weakness is presumed and a training regimen should be employed.[11] If the patient has trained their posterior chain effectively prior to examination, AK treatment can restore the proper movement pattern.

Rehab and Strength Training

Not only does the golf swing call for the spine to rotate, it forces it to do so at a tilt, over and over again, at excessive speed. Paul Chek states that, "Amateur golfers achieve approximately 90% of their peak muscle activity when driving a golf ball. This is the same lifting intensity as picking up a weight that can only be lifted four times before total fatigue."[12] Improper mechanics in the golf swing of middle and high handicap individuals can contribute to golf related injuries.[13]

If the patterns of weakness are chronic in nature, the muscles will have developed a functional weakness and this weakness will need to be addressed. To think that these individuals can be treated only and not do anything to retrain these muscles that have developed a functional weakness, is very short-sided and removes the responsibility of healing away from the patient.

Phil Maffetone in his book, *The Healthy Golfer*, discusses the importance of squats and dead lifts and, when done properly, are some of the most beneficial training exercises that can be done to remedy early extension.[14] However, for many people, due to either physical limitations or lack of proper movement patterns, these may not recommended initially. Most training therefore needs to proceed slowly.

When we squat, our body is momentarily accelerating towards the ground. We then require more ground force to reduce the body's acceleration towards the ground and turn it into energy. When transitioning to the downswing, many PGA touring professions increase their hip flexion effectively recreating a squatting motion.

This squatting allows the player to use the ground to create energy that transmits through the body to the club head.

One of the best exercises for the GM is the "Glute Bridge". It is low impact and puts no compressive force into the lumbar spine.

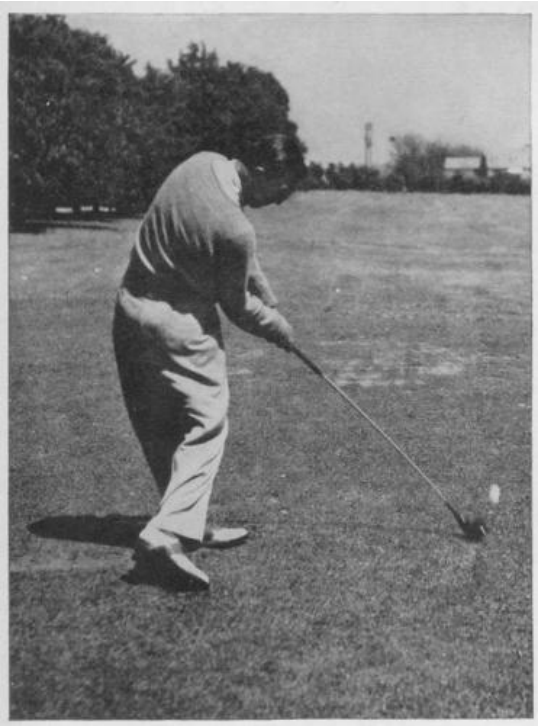
Once the patient has established the strength they need to hold this posture non-stop for 30 seconds, they can progress to "single leg glute bridges". Although these still activate the GM, this is primarily activating the hamstring (as can be evidenced by the common cramping that occurs within the hamstring itself). Single leg glute bridges also test for core stability so failure of this can be diagnostic of a need to train the abdominal group. The patient should be able to hold this position for 10 seconds.

Often a unilateral weakness of the hamstrings is found and in need of rehab, in and of itself. Engaging the incorrect hamstring can bring about disastrous results as this can imply torque to the pelvis with resultant transmittance to the lumbar spine.

Simply having the patient perform this exercise for a few seconds and testing an indicator muscle can give you, and more importantly the patient, instant feedback of what muscles needs to be addressed.

Conclusion

Both neurological integrity and functional strength of the gluteus maximus and hamstrings are essential for maintenance of spine angle throughout the golf swing. Maintaining the spine angle throughout the golf downswing helps golfers to eliminate early extension and thus increase impact consistency which can ultimately lower handicaps.



References

1. Hogan, B., Ben Hogan's Five Lessons, The Modern Fundamentals of Golf, Simon and Schuster, 1957, pg. 38.

2. https://www.mattholmangolf.com/single-post/2017/05/28/Spine-Angle-Analysis

3. Gluck GS[1], Bendo JA, Spivak JM. The lumbar spine and low back pain in golf: a literature review of swing biomechanics and injury prevention, Spine J. 2008 Sep-Oct;8(5):778-88. Epub 2007 Oct 15.

4. Hosea TM, Gatt CJ, Galli KM. In: Biomechanical analysis of the golfer's back. Cochran AJ, editor. London: E and FN SPON; 1990.

5. McHardy A, Pollard H, Luo K. Golf injuries: a review of the literature. Sports Med. 2006;36(2):171–87.

6. Gatt CJ, Pavol MJ, Parker RD, Grabiner M. In: A kinetic analysis of the knees during a golf swing.Farrally MR, Cochran AJ, editors. Illinois: Human Kinetics; 1999.

7. Adams MA, Hutton WC. In: Mechanics of the intervertebral disc. Ghosh P, editor. Boca Raton (FL): CRC Press; 1988.

8. Cheetman, P. J., Martin, P.E., Mottram, R.E., and St. Laurent, B.F. (2001). The importantce of stretching the "X-factor" in the downswing of golf: The X-factor stretch. Optimizing performance in golf (pp. 192-199). Brisbane, Australia: Australia Academic Press.

9. Walther, DS. Applied Kinesiology Synopsis. 2nd Edition. Mission, KS. ICAK-U.S.A.; 2009.

10. Overdorf, T., The Secondary Psoas, Collected Papers of the ICAK, 2015.

11. Functional Movement Screening: The Use Of Fundamental Movements As An Assessment Of Function - Part 1.

12. Chek, P., The Golf Biomechanics Manual, 3rd. Ed., C.H.E.K Institute Publishing.

13. Zheng N[1], Barrentine SW, Fleisig GS, Andrews JR., Kinematic analysis of swing in pro and amateur golfers., Int J Sports Med. 2008 Jun;29(6):487-93. Epub 2007 Nov 14.

14. Maffetone, P., The Healthy Golfer, Skyhorse Publishing, 2015.

© 2019 All rights reserved.

The Effect of Gemstones Upon Human Neurological Functioning

Robert Frost, PhD, A.T.

Abstract

Objectives: The purpose of this study was to determine if gemstones can reliably change the results of muscle testing - and to determine which meridians, dysfunctions or energetic imbalances are affected by which specific gemstones.

Methods: Clinic and private patients were muscle tested. Imbalances were noted but not corrected. Gemstones were found that strengthened weak-testing muscles. Double-blind tests were conducted to confirm the findings.

Results: When touched, specific gemstones reliably eliminate the imbalances determined by muscle testing. One half of all pain patients in this study reported an immediate reduction of pain from 50-100% when holding the tested gemstone. Specific gemstones reliably balance each of the yin meridians, the gaits, the three dimensions plus crossover switching, the chakras and many other imbalances for all patients tested. A single gemstone can be located which eliminates all of the tested energy imbalances. The gemstone which eliminates all imbalances is unique to each patient. Patients who carried their energy-balancing gemstone demonstrated greater compliance with doctor instructions and experienced a more rapid improvement of their dysfunctions.

Conclusion: Although the use of gemstones does not replace the need for detecting and correcting the causes of imbalances, their use can increase patient involvement and support the healing process.

Key Indexing Terms
Kinesiology, Applied, Gemstones, Muscle Test, Traditional Chinese Medicine, TCM, Energy Balancing, Meridians, Patient Compliance, Patient Involvement, Gait

Introduction
The literature in the field of healing with gemstones is full of nonsense. Half the texts include statements like, “Red gemstones give energy, vitality and increase sexual drive.” These are purported effects of the color red, not of gemstones.

Other texts say, “Gemstones have an electromagnetic field that radiates out and influences us.” I tested gemstones with high-quality meters and detected no such fields. Such presentations of scientific-sounding “facts” that are blatantly not true has caused serious scientists to reject the field of gemstone healing as “woo-woo” nonsense.

I have been a stonecutter and jeweler since I was fourteen years old. I heard of healing with gemstones but also considered it to be nonsense. Then a colleague, an Alexander Technique teacher told me that he had taken a workshop with an African shaman. The shaman had recommended that my colleague carry four gemstones in his pocket. My colleague called me and asked if I had those four gemstones. When I told him that I did, he said, "Bring them and let's see what they do."

At that time, I was rather new at muscle testing, but was able to test muscles for each of the meridians. I did so and found that my colleague had five weak-testing muscles. When he then took the four gemstones in his hand, all five muscles tested strong. When he put them down, they again tested weak.

In David Walther's first AK book, I found therein a passage where Walther advised that jewelry should be removed before muscle testing as it may change the results. I suspect that Walther meant that jewelry may invalidate the results of muscle testing. Then I wondered if the gems in jewelry might have a positive effect upon the meridian system and began my research in earnest.

Materials and Methods

In order to test the fine motor control and timing of the muscle test response, I used the kinesiology-type muscle test. In this type of test, the examiner initiates the test and gradually increases the test pressure for about two seconds. It is the job of the subject to sense exactly how strongly the examiner is pressing, how fast the pressure is accelerating, and provide an exact counter-pressure so the tested limb neither sinks nor rises. Unlike physiological strong muscle test typically used in AK, this type of muscle test requires fine sensory awareness and fine motor control – the factors I wished to study. This type of test can be repeated many times before fatigue sets in – another factor important to me for this study.

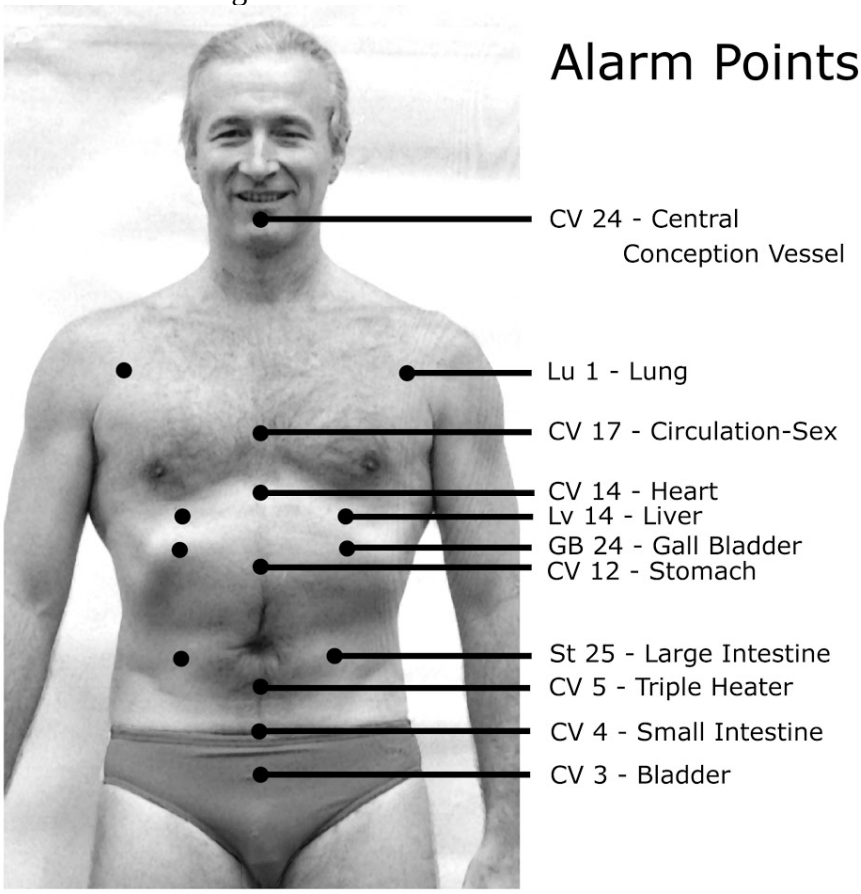
In my first test protocol, 75 different types of gemstones were initially used. 42 muscle tests were performed. When a muscle tested weak, a gemstone was placed upon the subject's body and the muscle tested again. Results were plotted on a chart.

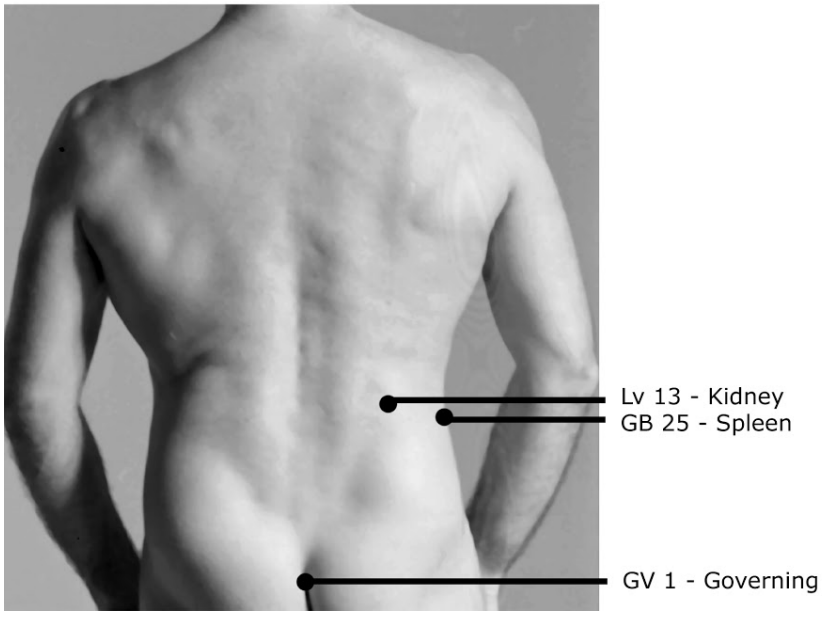
I determined that I could test many gemstones simultaneously. If the whole group caused a change in the results of a muscle test, I divided the group in half and tested each half. In this way, I could more swiftly determine which gemstone was involved.

As I proceeded, my research protocol was altered to reflect my various discoveries and realizations. As many of my research subjects were also clinic patients, I also had the responsibility to find ways of eliminating all their imbalances so they would get well.

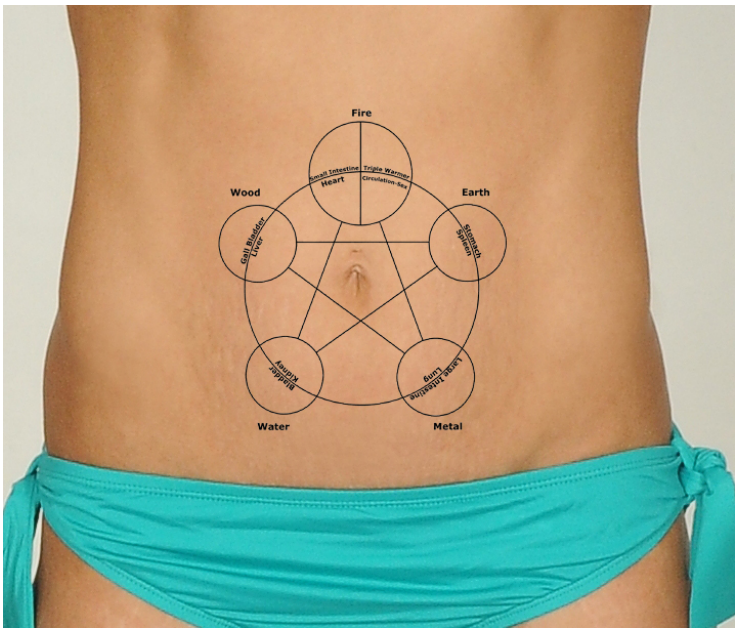
I discovered that a gemstone that strengthened a weak-testing muscle would also do so for all the muscles associated with the same meridian. After making this discovery, I reduced the number of muscles I tested to one or two per meridian.

Weak-testing muscles usually indicate a deficit of energy in the related meridian. When any meridian is in a deficit state, another meridian is in an excess state. Excess energy meridians can be diagnosed by touching their related alarm points and muscle testing. This simplified my research protocol. I only had to test the 12 alarm points with one indicator muscle. The gemstone that eliminated the active alarm points also strengthened all the weak-testing muscles.



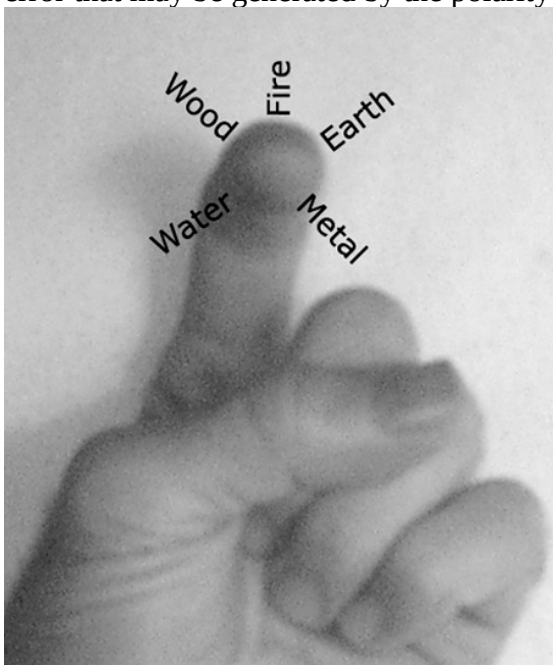


Then I simplified my protocol even more. There are five element points that function like element alarm points. They are located and easily tested around the navel. When a five element point tests weak, there is excess energy in either the yin or yang partner meridian of that element. With this breakthrough, I could test the whole meridian system with just five tests.



Five Element Points Around the Navel

The same five element diagnostic points are also located around every joint and orifice of the body. This indicates that the five elements of Chinese medicine are not just a theory but a physiological fact. Using two fingers together as a test probe avoids any possible error that may be generated by the polarity difference of each fingertip.



The Five Elements Around a Finger Joint/Test with Two Fingers for a Neutral Test Probe

Then came a rub. I had a subject with three active alarm points. Either azurite - $Cu_3(CO_3)_2(OH)_2$ or malachite - $Cu_2CO_3(OH)_2$ eliminated all the active alarm points and strengthened all his weak-testing muscles. Notice how their chemistry is similar. Both are copper carbonate hydroxides with only difference being in the number of same atoms. Either one of them completely balanced him, but when I put both of them together upon his body, he went back out of balance and one alarm point was again active. This was a shocking discovery: **The meridian-balancing and muscle-strengthening effect of gemstones can be blocked by other gemstones.**

When I discovered this, I changed my protocol to locate one gemstone that would balance all the imbalances of a particular patient. In this way, I avoided any possible interference that could occur by using more than one gemstone simultaneously.

With this new goal in mind, the simplest protocol of all became evident - to test all the five element points simultaneously by placing the palm of the hand over the navel. I still test various muscles to find several that test weak. This is important to demonstrate the effect of the gemstones. Patients are not very convinced by the hand on the navel test.

It took me two years of research to come upon this now obvious simplification of my protocol: **The gemstone that strengthens the indicator when the subject has a hand over the navel will strengthen all the weak-testing muscles.**

Results

My initial tests revealed that the gemstones that balanced a particular muscle were patient-specific. What worked for one patient most often did not do so for another.

The two muscles that tested weak most often were latissimus dorsi and gluteus medius. I was most always able to find a gemstone that strengthened latissimus dorsi, but it was a different one for each person.

It was with gluteus medius that I found the first of what I call universal balancing gemstones - ones that have the same effect for everyone. Contact with the true cat's eye, chrysoberyl (beryllium aluminate) strengthened gluteus medius for everyone who had this weakness. Further research revealed that chrysoberyl strengthens all the muscles of the circulation-sex meridian. **A gemstone that strengthens a weak-testing muscle will usually strengthen all the muscles associated with the same meridian.**

I have not found gemstones that reliably balance any of the yang meridians for everyone. I did find gemstones that balance each of the yin meridians except for the spleen meridian. For many years, I was unable to located a gemstone that balances the spleen meridian. Then I found out why. **There are gemstones that block the meridian-balancing effect of other ones.** The iolite gemstone that balances the spleen meridian was in the same bag as the gem chrysocolla that blocks it. When I tested them together, the chrysocolla blocked the iolite from being able to balance the spleen meridian.

Here is a summary of my findings:

Universal Balancing Gemstones

Meridian or Function	Gemstone	Blocked By
Central	Celestine	Peridot
Heart	Antlerite, Brochantite	Beryl
Circulation-Sex	Chrysoberyl	Garnet
Spleen	Iolite	Gem Chrysocolla
Lung	Red Jasper	Rhodochrosite
Kidney	Labradorite	Fluorite
Liver	Red Quartz	Cat's Eye Jade
Up-Down Switching	Sugilite	Chrysoberyl
Gaits	Fluorite	Beryl

Gemstones that balance meridian energies have the same effect when placed anywhere upon the body except upon the upper chest. Many of the gemstones that do balance meridians upset the energy balance when place upon the upper chest – causing muscles to test weak and meridians to go into a state of excess energy. Such gemstones should not be worn on the upper chest anywhere from the top of the sternum to about the level of T4. Most gemstones do not balance meridians and may be worn on the upper chest with no negative effects.

Meridian-Balancing Gemstones Should Not Be Placed Here

Most gemstones need to be about 1 gram or more in weight to have a measurable effect upon the results of muscle testing. Chrysoberyl is a powerful exception. Chrysoberyl will balance the muscles of the circulation-sex meridian even when it is about the size of this 12-point lower case "o".

For energy balancing, the quality of a gemstone is irrelevant. An opaque inexpensive gemstone is just as effective as a transparent expensive one of the same mineral.

To have their muscle strengthening effect, gemstones don't need to directly contact the body but must be within 4 mm. This indicates that the effect is not chemical but rather from some kind of field. As gemstones have no measurable field, logic dictates that the field involved is most likely generated by the human body. The logical conclusion is that we affect ourselves via our energetic interaction with the gemstone. An analogy may be drawn with echolocation by bats. The bat sends out a signal and reacts to the returning signal.

Many of my patients had one or more of their gait reflexes out of balance. The most common gait imbalance was the anterior gait. When the anterior gait was out, they could hold strong with one arm or one opposite leg raised. But when both were raised at the same time, one or both of the limbs tested weak. I located the gemstone fluorite that, when held, eliminated gait test weakness.

Fluorite comes in all the colors of the rainbow plus clear, grey and brown. And any color of **fluorite corrects the gaits**. This refuted another commonly held belief about the effect of gemstones depending upon their color. **The meridian and muscle balancing effect of gemstones is not dependent upon their color but only upon their chemistry.** Fluorite is calcium fluoride, CaF_2. Any color of fluorite balances the gaits.

Case Histories:
A 45-year-old woman had two menstrual cycles per month. Each lasted one week. She was bleeding half of the time. I tested a gemstone that balanced her meridians. In her case, it was a chrysocolla. She asked me to make a necklace with a chrysocolla pendant for her. Since gemstones are not effective when on the upper chest, I made a short choker so the gemstone sat in the depression of her neck just above her sternum. Wearing the pendant, her cycle normalized to 28 days with three to four days of bleeding. Two months later, she forgot to put her necklace back on after taking a shower. A few hours later, her cycle began, way too early. She quickly put her necklace on and her cycle stopped later that day. She continued to wear it and reported that her menstruation returned to a 28-day cycle.

A 14-year-old girl told me that her cycle was quite irregular and only occurred about once every three months. Since she was sexually active, she was concerned that she wouldn't know if she was pregnant or not. I tested a gemstone that balanced all of her meridians. It was a rhodochrosite. She went to sleep holding it in her hand and her cycle began that night. She continued to carry it in her pocket and reported that her cycle came "once a month".

The two women with irregular menstrual cycles illustrate a principle of energy balancing with gemstones. One had two cycles per month and the other had one cycle every three months. The same protocol was used in both cases: Locate the gemstone that tests strong with a hand over the navel. The first woman's short cycle became twice as long. The girl's long cycle became one third as long. So the effect of the gemstone was to neither increase or decrease the length but rather to normalize it. Adaptogens are remedies that move a parameter toward its norm. The medical herb hawthorn will raise low pressure or reduce high pressure. That's how an adaptogen works. **Unlike drugs which push a physiological parameter in one direction, some gemstones appear to act like adaptogens in that they normalize physiological parameters.**

Discussion

Chrysoberyl strengthens muscles of the circulation-sex meridian: gluteus medius, gluteus maximus, the adductors and piriformis. These muscles are all involved with maintaining upright posture and balance while standing. When they are functioning properly, they swiftly respond to keep you from falling. When they test weak, the patient typically doesn't notice that they are starting to fall and may not be able to respond swiftly enough to prevent falling.

Older women often have osteoporosis. Because of this, it is vital that they not fall down or they may easily break their leg or hip. Elderly women who fall and break bones usually don't live much longer. A chrysoberyl ring will keep them stable on their feet and could thereby save their life. Here was the first example I saw of the potential for healing or at least energy-balancing jewelry.

Using the Placebo Effect

When you demonstrate to a patient that mere contact with a gemstone makes a definite change in the response of their muscles, they will typically be amazed. At that moment, the gem is, to them, a genuine piece of magic - something outside their belief system. When you first demonstrate this to them, there is a fifteen to thirty second window when they will believe most anything. Utilize this moment of magic when their mental censor is down to plant therapeutic suggestions. Say something like, "When a type of situation that used to put you wrong begins, take out your meridian-balancing gemstone in your hand and notice how you now react differently and instead (fill in new desired behavior)." If you do this elegantly, they will look for and thereby generate the new behavior. If they "notice" it, it becomes reality to them and can become a new useful and even habitual response.

Woods

After completing my doctorate thesis on the effect of gemstones upon human neurological functioning, a colleague in England called me up and told me of a man in Scotland who sells sets of "therapy woods". I called him up and asked what he had. He had 67 different kinds of woods numbered with an index. He said that they are therapy woods but offered no instructions whatsoever. I bought a set and used the same protocols I used testing gemstones. I swiftly discovered that woods can do most everything gemstones can and more. I have as yet not found a single case of a gemstone that reliably balances a yang

meridian for everyone. I have found woods that reliably balance each of the yin and the yang meridians. Since the gemstones I have found for the heart meridian, antlerite and brochantite are rare, fragile and expensive, I include in my gemstone test kits the wood larch which also balances the heart meridian.

Crystallized Elements

Recently, I discovered that metals and other elements of the periodic scale when crystallized, also balance meridians and a wide range of other factors tested in Applied Kinesiology. In this gemstone study, I found that chrysoberyl (beryllium aluminate) balances the circulation-sex meridian. The metal in it, beryllium, does too but only when it is in crystalline form. It appears that it is not gemstones per se but rather the elements that make them up plus their crystalline structure that produces the measured effects upon the results of muscle testing. The effect of crystalline elements upon the meridian system is my area of current research.

The research reported here brings up many questions. Is it the chemistry of the atoms and/or the arrangement of them in the molecular structure repeated through the crystal lattice that is responsible for these observed effects? How do we interact with the gemstones? How does their presence near us affect us? How does the effect upon our neurological functioning occur? Why and how do certain gemstones block other ones?

I have descriptive texts and sets of meridian-balancing gemstones, woods and elements available. I invite any interested doctors to contact me so we together can either confirm or refute my findings.

Patient Compliance

Getting patients to actually make lifestyle changes that are necessary for the ongoing healing process is one of the biggest challenges for all therapists.

After an Applied Kinesiology session, patients are usually in a positive mental state. If you, the examiner has done your work well, their meridians are balanced and they are neurologically integrated which gives them a positive outlook. In that state, they are motivated to make the needed changes that you tested and recommended. Everything looks rosy and they probably expect the best.

However, after they leave, some stressor strong enough to discombobulate their energy will surely occur. They will eat some food, contact some allergen, have a fight with their partner or do something that will cause meridian imbalances and consequent mental confusion. In that state, they are less likely to actually do their homework and make the behavioral changes you recommended. Patient compliance after the session is a big problem for us all.

Here is the forte of using energy-balancing gemstones. When the subject carries the tested gemstone, it will buffer their energy so their integration will not be lost. Like a crutch, it will support their integrated energy state and “take the weight off” as they heal. By preventing neurological disorganization, it will help them to continue to think positively

and remember to make the suggested changes they need for their healing process. The bottom line is: Subjects who carry their energy-balancing gemstone remain in energetic balance in stress situations, are more likely do their homework, do make needed behavioral changes, and get well faster.

Conclusion

Meridian-balancing gemstones act like a crutch, supporting and giving the system great stability in situations of stress. Through preventing neurological disorganization and stabilizing the gait functions, they promote clear thinking and improve coordination. This can be a great support for the healing process. Patient involvement and compliance increase. Patients are far more likely to follow through with any suggested behavior changes when they carry their tested energy-balancing gemstone.

References

1. Burtscher, Eugen, Monika Eppler-Tschiedel, Wolfgang Gerz, Anton Suntinger, Inge Ofenstein, and Katharina Schumacher. Lehrbuch Der AK-Meridiantherapie (AKMT): Synthese Der Akupunkturlehre Und Applied Kinesiology. Wörthsee: AKSE Verlag, 2001.

2. Frost, Robert. Applied Kinesiology: A Training Manual and Reference Book of Basic Principles and Practices. Berkeley, CA: North Atlantic Books, 2013.

3. Walther, David S. Applied Kinesiology. Pueblo, CO: Systems DC, 1981.

© 2019 ICAK, All rights reserved.

Entering the Gait Way to Functional Neurology

W. David Berglund, D.C., P.Ac., DIBAK

Abstract

Kinesiology the study of the mechanics and anatomy of human movement and their roles in promoting health and reducing disease. The neural mechanisms underlying bipedal and quadrupedal locomotion are inherently different, yet at the same time, these two different locomotion styles share common neural mechanisms which have remained poorly understood. Even with today's technological advances made over the past couple decades there are still a lot of difficulties and limitations in studying human neural activities during dynamic movements, like walking. To what extent is the central command from the higher nervous centers needed to facilitate and maintain human bipedal movement? This is a fundamental question regarding the neural mechanisms controlling human gait and movement patterns. In 1906 Sir Charles Sherrington published, "The Integrative Action of the Nervous System." Sherrington introduces what may be regarded as his greatest discovery- 'reciprocal inhibition.' This he defined as a reflex of 'simultaneous double-sign' with excitation of one or more agonist muscle(s) and simultaneous inhibition of the antagon-ists acting at the same joint. His observation is the foundation of quintessential functional neurology used by Doctors of Applied Kinesiology.

Key Indexing Terms

Human Gait, Reciprocal Inhibition, Myofascial Interlink, Golgi Tendon Organ, Muscle Spindle Cells, Joint Mechanoreceptors, Kinesthesia, Proprioceptive-Deep Tendon Reflex, Injury Recall Technique, Morton's Foot, Rothbarts Foot, Forefoot Varum, Metatarsus Primus Elevatus

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, Postural Analysis. Applied Kinesiology muscle testing in both nonweightbearing and weight-bearing. Gait testing in both nonweightbearing and weight-bearing.

Introduction

Human gait is defined as bipedal, biphasic forward propulsion of the center of gravity of the human body, in which there are alternate sinuous movements of different segments of the body with the least expenditure of energy. Gait mechanics and their applications in Applied Kinesiology were introduced by George Goodheart in 1974. His original presentation consisted of four basic gait patterns. These gaits were named according to the acupuncture meridian which contained their respective active reflex point located on the foot. Dual simultaneous muscle testing was a new concept at the time. Simultaneous

muscle testing opened up a new frontier in Applied Kinesiology. Between 1975 and 1976 Dr. Alan Beardall added two more gait patterns to the testing. Correcting the gait mechanics was found to be important in preventing switching and the reversal of polarity. Patients noticed correction of dysfunctional gait patterns reduced excess fatigue during normal activities such as walking running and jumping. Anyone who has studied for an Applied Kinesiology test knows that you treat the gaits by remembering a city in California, Palo Alto. Applied Kinesiology treatment is a stimulation of the associated gait acupuncture points on the foot. Later Dr. Alan Beardall used a simultaneous synchronization of a foot and hand acupuncture point. In the last 43 years there has been more than a little progress in the field of Applied Kinesiology. Together clinicians and patients have explored many new frontiers in manual muscle testing. Muscle testing terminology has changed from weak and strong to more neurological appropriate terms; conditionally facilitated and conditionally inhibited muscles. There are new AK rules: A conditionally inhibited muscle should strengthen by stretching apart the muscle spindle cells for at least one contraction. If not that is an indication to use Injury Recall Technique and/ or Proprioceptive-Deep Tendon Reflex Technique. A conditionally facilitated muscle should weaken for one contraction if the spindle cells are pushed together. If not that muscle is hypertonic and it is the all elusive “Bigfoot” in Applied Kinesiology. One that no one had been looking for even though the hypertonic muscle influences joint function much like the conditionally inhibited muscle does. Also new is Myofascial Interlink technique which allows for the assessment of the connection between bipedal and quadrupedal movement. So when we rubbed that foot reflex and we asked the question how long does that last? Was there an answer? With the connections between gait, acupuncture meridians, chi and lymphatic circulation the treatment provided excellent benefits. Today we can find and fix the neurological dysfunction in gait patterns, which translates into even better benefits for patients. Dual muscle testing added another dimension to Applied Kinesiology and applying the new AK rules to this dynamic testing will produce new dynamic results. Sherrington’s reciprocal inhibition becomes the quintessential elegance of Applied Kinesiology’s functional neurology.

Discussion

Applied Kinesiology is the Art and Science of manual muscle testing. Gait testing has benefits for AK students, novice AK doctors, seasoned AK veterans and of course all of our patients. Gait testing is an opportunity for beginners to learn the art of manual muscle testing by providing a platform where the subtle differences between a facilitated muscle and an inhibited muscle can be felt by muscle testing via gait simulations. For those with much experience with manual muscle testing it provides a platform to explore the intricacies of functional neurology. For the patient it provides optimal results in their moving world of walking, running and jumping. For the patients that are athletes it provides them with the razors edge in all of their competitions.

The novice muscle tester can easily practice the Art and Science of Applied Kinesiology by using the known facilitation and inhibition patterns of the Liver Gait. When the left quadricep is flexed and held about 30 degrees off the table the contralateral latissimus dorsi will be inhibited and the ipsilateral anterior deltoid will be inhibited. The same pattern

follows when the right quadricep is engaged in the Liver Gait position. The ipsilateral anterior deltoid will be inhibited and the contralateral latissimus dorsi will be inhibited. First test the anterior deltoid and latissimus dorsi for their "in the clear" status. It is best to commandeer an experienced muscle tester to check to make sure the correct inhibition patterns are on display. It is possible to have neurological dysfunction that may disrupt the normal pattern. The gait inhibition patterns can be practiced on a variety of patients so that one can learn to feel the testing differences from person to person.

For the experienced AK doctors more complex patterns can be explored.
Gait patterns of facilitation and inhibition:
contraction of the quadriceps
inhibits ipsilateral hamstring
facilitates contralateral hamstring
inhibits ipsilateral pectoralis major sternal, arm flexors
facilitates contralateral pectoralis major sternal, arm flexors
inhibits contralateral sternocleidomastoid
facilitates ipsilateral sternocleidomastoid
inhibits ipsilateral upper trapezius
facilitates contralateral upper trapezius
facilitates contralateral arm of flexors
inhibits ipsilateral arm of flexors
facilitates ipsilateral arm extensors
inhibits contralateral arm extensors

Checking these facilitation and inhibition patterns is functional neurology at its best. Any disruption in the normal facilitation and inhibition of these muscles shows a dysfunction in the normal neurological patterns of movement.

Procedure

1. Test each muscle individually related to the gait patterns, if the muscle is facilitated check for inhibition by pushing the spindle cells together, if the muscle is inhibited spread the spindle cells and check for facilitation and note your results.
2. Check each of the six gait patterns bilaterally and note your results.
3. Go back and correct all the individual muscles that did not test appropriately. If a facilitated muscle did not inhibit when the spindle cells were pushed together it is hypertonic. Use the five factors of the IVF and therapy localization fix the hypertonic muscle. If the muscle tested inhibited and did not become facilitated when the spindle cells were pushed apart, use injury recall technique and/or proprioceptive-deep tendon reflex technique.
4. Next go back and retest the six gait patterns bilaterally. Note if any change took place from your original testing results. Fix what you find using therapy localization. Start a pattern where you rub one foot and retest the gait. Then rub the other foot and test the gait. Do the same for both knees. Do the same for the upper cervical area. Continue this pattern of therapy localization until you find the area that needs to be treated. The treatment will often be resetting a mechanoreceptor in the foot, ankle, knees or upper cervical region. This can be done by using a knife edge or karate chop hand therapy

localization to find the vector of the ligament in that area that needs correction. The treatment is to simply squeeze together the ligament has if you were trying to shorten it. Continue your pressure until the therapy localization is no longer there which may be about 15 seconds. After making the correction recheck the gait. Follow this procedure for each positive gait pattern you find. It can be a subluxation or soft tissue dysfunction. Dr. Shafer's myofascial interlink can also be added during the correction scan due to the connections of quadrupedal movement to our bipedal movement. Using the interlink technique I using the magnet to scan over the hips first and the shoulders second, checking both anterior and posterior locations.

It is not necessary to follow this testing pattern to the letter it is only meant to be a template for this paper presentation. However, creating your own pattern so you can take good notes will allow you to see the the big picture of functional neurology which is the true essence of Applied Kinesiology. Being able to test dual muscles associated with movement patterns allows one to explore the neurological connections in the realm of human motion, what we call Applied Kinesiology.

Gait patterns can be examined more dynamically with the patient standing. It's always a good idea to test the latissimus dorsi and the anterior deltoids on the sitting patient. Then do the same thing with the standing patient. If any of these muscles show an additional inhibition when standing that designates a weight-bearing problem that needs to be addressed. So the clinician will have to decide whether the problem lies in the feet or somewhere above. At this point I like to test posture control inserts to see if they will facilitate the muscles that have been inhibited in the standing position.

Next, with the patient standing place them in the gait position and check to see if the correct inhibition and facilitation is taking place particularly in the easy to test muscles, the anterior deltoid and latissimus dorsi. Exaggerate the toe-off position which can help detect a Morton's foot or elevated first metatarsal head. In this case the posture control inserts are one of the best ways to fix this problem.

Conclusion

Gait testing is a wonderful procedure that keeps patients from walking back into their problems. Walking is good for the body so when it neurologically optimized it is quite good for the body. It creates peak performance while walking, running and jumping.

Using the discoveries of many talented Applied Kinesiologist over the past four decades sheds new light on many old techniques including and especially gait testing. The movement during gait is truly the essence of Applied Kinesiology where the neurological facilitation and inhibition of muscles creates the bipedal movement.

Illustration
Upper extremity muscle tests

Latissimus Dorsi

Anterior Deltoid

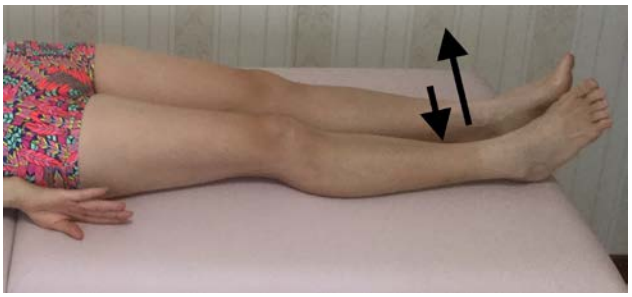
Pectoralis Major Sternal

Suprasoinatus

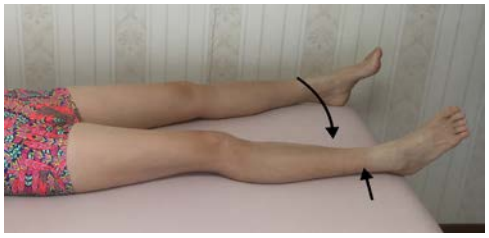
Triceps Brachii longhead

Rectus Abdominis
Lower Extremity Tests

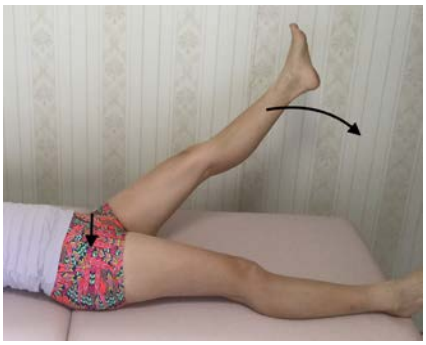
Rectus Femoris



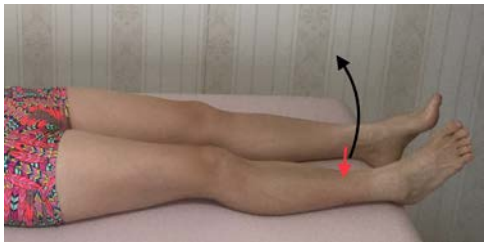
Adductor Longus



Gluteus Medius

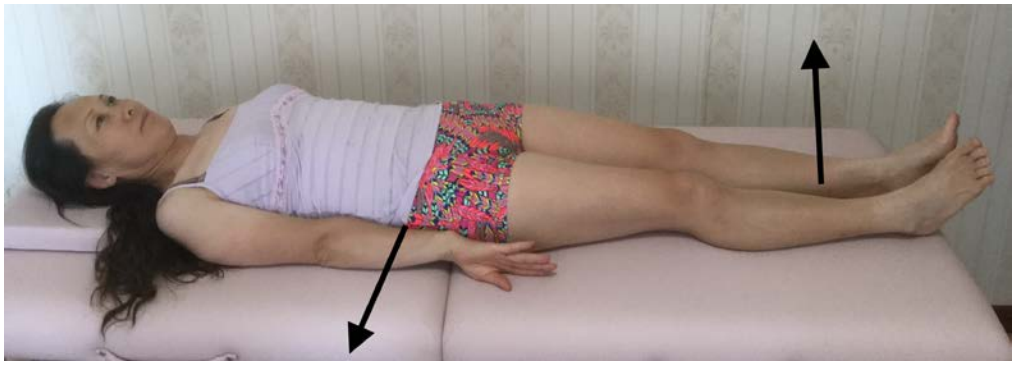


Psoas

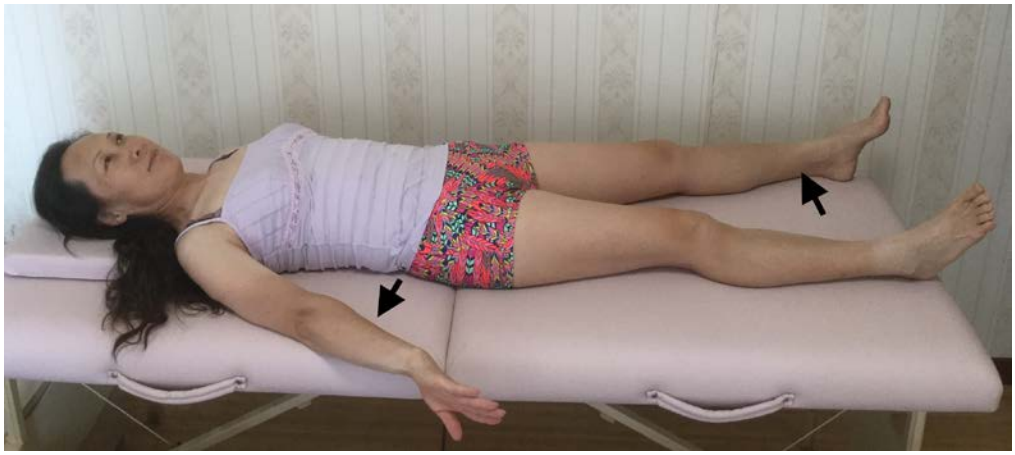


Gluteus Maximus Sacral Division

Liver Gait-Anterior Deltoid vs Rectus Femoris, Dr. simultaneously tests the contralateral Anterior Deltoid vs Rectus Femoris, then repeat on opposite side.



Bladder Gait-Latissimus Dorsi vs Adductor Longus, Dr. simultaneously tests the Latissimus Dorsi vs contralateral Adductor Longus.



Bladder Gait testing motion

Stomach Gait-Supraspinatus vs Gluteus Medius, Dr. simultaneously tests Supraspinatus vs contralateral Gluteus Medius, repeat on other side

Stomach Gait muscle testing motion

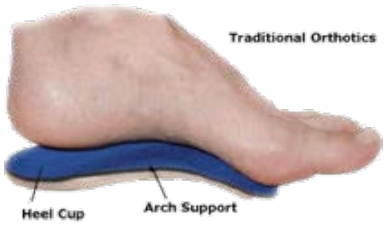
Kidney Gait-Pectoralis Major Sternal vs Psoas, Dr. simultaneously tests the Pectoralis Major Sternal vs contralateral Psoas, repeat on other side.

Kidney Gait muscle testing motion

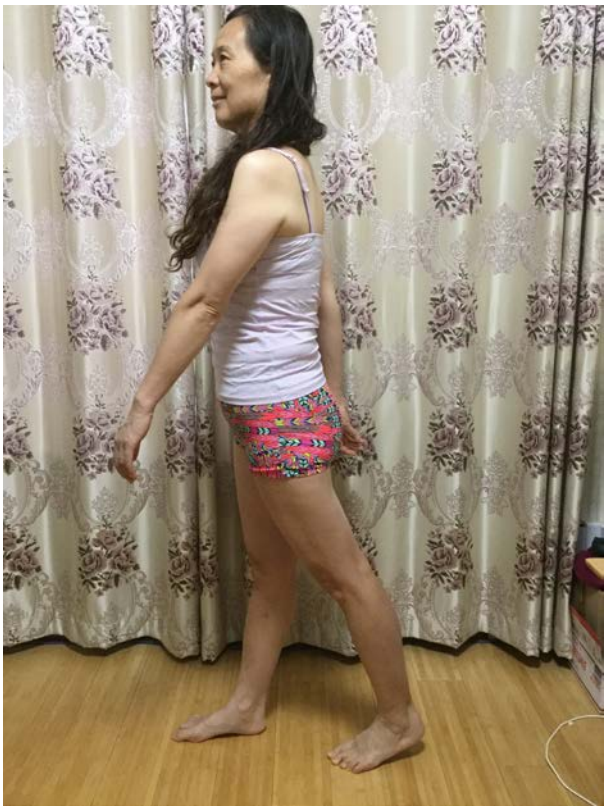
Gallbladder Gait-Rectus Abdominus vs Gluteus Medius, patient performs a sit up lifting the shoulder approximately 25° off the table and towards the opposite hip, the doctor tests the contralateral Gluteus Medius, repeat on other side

Spleen Gait-Triceps Brachii Longhead vs Gluteus Maximus Sacral Division, patient can push elbow straight down into the table while the doctor tries to pull the leg straight up from the table. Dr. can also test both muscles simultaneously, repeat on other side

Spleen Gait muscle testing m motion



Orthotics are static not dynamic.



Small toe-off

Large toe-off

References

1. Beardall, Alan G. (1982). Clinical Kinesiology, Lake Oswego, Oregon.

2. Leaf, David. Applied Kinesiology Flowchart Manual, Privately published, Plymouth, MA, (1995).

3. Schmitt, Walter H. and McCord, Kerry., Quitessential Applications,"A(K) Clincal Protocol, 2 Edition 2009, Health Works!," P.O. Box 530186, St. Petersburg, FL 33747.

4. Walther, David, S., D.C. (2000). Applied Kinesiology Synopsis, 2nd Edition, ICAK- U.S.A., Shawnee Mission, KS , ICAK-U.S.A.

5. Sherrington, Charles, S., D.Sc., M.D., Hon. LL.D. Tor., F.R.S., New Haven: Yale University Press, London: Henry Frowe Oxford University Press (1906).

© 2019 All rights reserved.

Frequency of Patellar Tendon Problems Inhibiting the Quadriceps Function

David Leaf, D.C.

Abstract

For four months the incidence of quadriceps inhibition due to problems with the tendons of the quadriceps was investigated. In musculoskeletal patients, the incidences of inhibition patterns due to cross-links affecting the tendons of the muscle were found to be extremely common.

Key Indexing Terms
Quadriceps Tendon, Inhibition, Stride

Discussion

Over four months, 342 patients were treated for symptoms related to their leg and low back. These ranged from 14 to 88 years of age. Individuals with visceral problems and a normal gait were excluded from this study.

All individuals were observed walking to determine if a short stride was evident. Common findings will be described. The rectus femoris and the vastus muscles were tested. The patella was palpated for superior and inferior motion with the leg in a relaxed position with the patient supine. Finally the quadriceps muscle was palpated for size and density bilaterally. The rectus femoris and the vastus were tested at varying angles of knee flexion.

If inhibition of the quadricep sections was found, testing of other muscles innervated by the same levels of the spine were tested. In a subset of the base group, these and at times muscles innervated lower in the lumbar spine were found to be inhibited. Distraction of the spine caused an immediate increase in muscle strength in this group.

Poor mobility of the quadricep tendons could be associated with involvement of the Golgi tendon organs. In as much as tension on the tendons can create stimulation of the Golgi tendon organ and result in inhibition of the muscle, cross frictional massage to the tendon could be indicated. An alternative is percussion of the tendons involved while actively flexing and extending the knee and leg.

Procedure:

1. Evaluate the gait of an individual observing for length of stride, femur motion and lower leg extension. In addition, observe the pelvis for degree of rotation and how the foot strikes the floor.
2. On the short stride side, palpate the upper leg for size and muscle density.
3. Palpate the patella for superior and inferior motion.
4. Test the rectus femoris and the vastus muscles with the knee flexed 90degrees, 100 degrees, 110 degrees and 120 degrees. If the person has trouble getting off of the floor or out of a low chair, fully flex the knee and retest.
5. Test the rectus femoris with the leg extended 15 degrees. If inhibition is found, the superior tendon at the pelvis is indicated.
6. Do cross-frictional massage to the tendons both inferior and superior to the patella and retest for normal function.
7. Instruct the patient on doing this in the morning and if inactive for any period of time. They can palpate for motion of the patella as an indication of need. This should be done for 2 – 3 weeks daily.
8. If there is any degree of atrophy in the muscle, do aerobic testing to determine the number of times the muscle can respond without inhibiting. Test another muscle on the contralateral leg and one in the arm to determine if approximately the same number of tests produces inhibition. If this is found, test for nutritional support. If not, subtract at least one repetition and that is the maximum number of repetitions to start rehabilitation of the muscle.

Of the patients found to have quadriceps inhibition related to structural problems:

1. 72 had problems related to either facet jamming, stenosis or disc protrusion that were helped with traction. In these cases, they were instructed to balance their pelvis and traction their lumbar spine every 2 hours and before bed. This was done with them using a door and bending their knees to remove 25 – 30 percent of their weight 6 times. Multiple times a day and before bed.
2. 14 had spinal misalignment with normal patella motion
3. 256 had decreased motion of the patella related with inhibition of a section of the quadriceps.

Conclusion

Evaluation of the tendons of the quadriceps and motion of the patella should be a part of the examination and treatment of all patients with a short stride or anterior knee pain. The treatment will require the patient to become active in the treatment plan.

© 2019 All rights reserved.

Hippocampus Treatment for Hormone Balance, Memory, Appetite Control and More

James D.W. Hogg, D.C., DIBAK

Abstract

This paper explores hippocampal function, dysfunction and the use of laser and LED based Injury Recall Technique (IRT) to relieve dysfunction. The importance and causes of recurring brain injury (both from physical impact and otherwise) are discussed. Finally, specific therapeutic procedures are presented to reduce dysfunction in the hippocampus as well as other brain areas.

Key Indexing Terms
Hippocampus, brain injury, Injury Recall Technique, IRT, Insomnia, Cortisol, Depression, Memory, Anxiety, Low Level Laser Therapy, LLLT, Appetite

Introduction
For many years I have been interested in Low level laser therapy (LLLT) and other types of photobiomodulation therapy (PBMT). Injury recall technique (IRT), originally presented to ICAK by Dr. Walter Schmitt[1,2] has also been a source of great interest and excellent clinical results. I presented a paper combining the two in 2004[3] and another applying to brain injury in 2009.[4] This paper will be expanding on the brain injury paper based on clinical observations of the last nine years with a focus on one very inter-esting area of the temporal lobe called the hippocampus.

Discussion

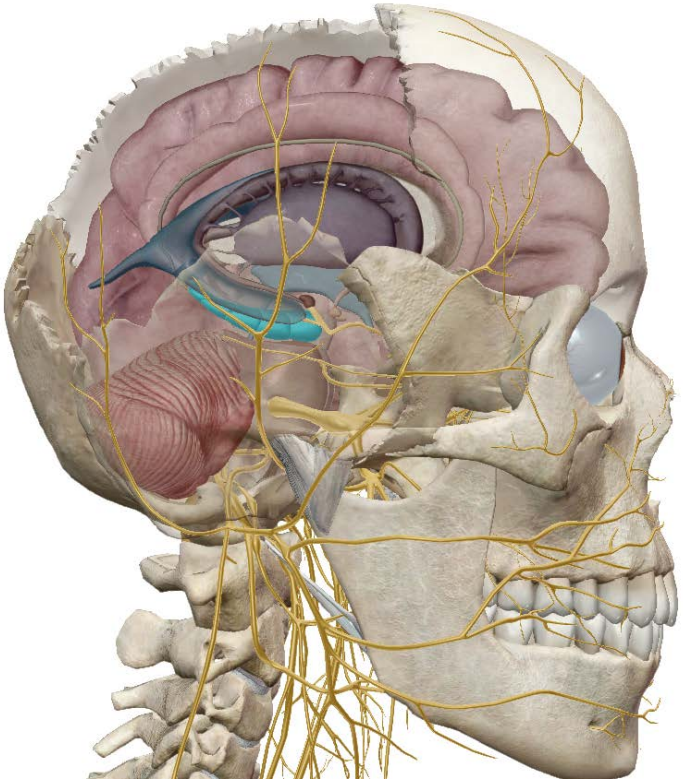
Since 2009 I have included brain IRT as a regular part of my clinical approach. The areas I find most commonly showing the need for treatment are the frontal lobe, corpus callosum, cerebellum and the temporal lobe, specifically the hippocampal area. Parietal and occipital lobes seem to show much less frequently.

One thing that, in my experience, makes brain IRT different from treating other areas of the body, is the need for brain area IRT tends to recur much more frequently. In general IRT is only indicated once, occasionally twice for each injury unless there is re-injury to the same area. I sometimes find if a treated area remains painful the pain itself may recreate the need for IRT. For brain areas I find a patient may need IRT treatment for several weeks or even months, especially if the original injury was severe, occurred several years previously and/or any of a number of contributing factors, discussed below, are ongoing. I feel that there are several reasons why brain IRT tends to recur so frequently. One of the

primary reasons is that brain “injury” is not limited to physical impact or blows to the head. Brain injury can occur from hormonal imbalance such as high cortisol, serum glu-cose that is consistently too high or too low, chronic systemic inflammation or cere-bral interaction with gut issues such as “leaky gut” irritable bowel syndrome or small intestinal bacterial overgrowth. In addition, high levels of consistent and unmanaged stress may contribute to all of the above. Adverse reactions to medication, toxic chemicals, heavy metals, allergies and other autoimmune responses all add to the potential for brain injury.

I learned about another aspect of brain function that adds to continuing trauma at a very interesting seminar titled “Mastering Brain Chemistry” developed by Datis Kharrazian, D.C., DIBAK and presented by Apex Energetics. This involves the “microglia”, the spec-ific immune system of the brain. According to Dr. Kharrazian, the microglia, once acti-vated, will often stay active long after the originating threat has been eliminated. This can result in continuing brain-specific inflammation and trauma.

All of the above factors create a need to test for and treat brain IRT multiple times for those patients whose case history suggests injury from physical impact, chemical trauma or symptoms of cortical dysfunction. Periodic checking for patients without any obvious trauma is also suggested. I feel this is especially true for the portion of temporal lobe known as the hippocampus. The hippocampus is a small structure, part of the limbic system, located in the medial temporal lobe. A small structure but with big effects. The hippocampus has been linked to control of cortisol rhythm as well as the hypothalamus pituitary Adrenal (HPA) axis, conversion of short-term to long-term memory, controlling



depression, anxiety and bipolar disorder and appetite control.[5,6,7] Clinically, I’ve also seen

a connection between the need for hippocampal IRT and poor sleep. The cortisol and sleep are both "chicken and egg" relationships since high glucocorticoids like cortisol and decreased sleep levels can both have a negative effect on hippocampus function. I've also seen patients with hippocampal damage from high cortisol levels experience extreme hunger (not just "the munchies") even with a full stomach. This is, in fact, a phenomenon that I've suffered myself a number of years ago.

As mentioned earlier, the hippocampus has been linked to issues related to bipolar and major depressive orders as well as anxiety states.[6,7] While hippocampus IRT is certainly not as stand-alone "cure" for anxiety and depression, I have had good clinical results combining hippocampus IRT with other bio-chemical, electromagnetic and emotional (primarily Neuro Emotional Technique, NET) work.

One very interesting case involved a young man in his early 20s. He worked at a major hardware chain and had recently gotten a promotion to a supervisory position. He had a number of emotional and hormonal issues including adrenal pituitary axis problems as well as needing NET for issues with his deceased father. Shortly after his promotion, he became extremely anxious. It got so bad that he was unable to work which, of course, increased his anxiety. Although I was able to help him to some extent with precursors for gamma aminobutyric acid and NET, he was still incapacitated by anxiety. This patient, not surprisingly, also had problems getting a good night's sleep and I decided, after explaining the procedure, to check for hippocampal IRT as a sleep aid. He tested positive and, about 30 seconds after treatment, he said "It just stopped". I responded "What stopped?" and he replied, "The anxiety. It just stopped, it's gone!". This was my introduction to the usefulness of hippocampus IRT for treating anxiety. This patient was able to return to work, keep his job as well as the promotion. He needed a few more treatments but his severe anxiety was resolved. While this was the most dramatic example of hippocampal IRT for anxiety, I have found it useful with many other, less severe, cases as well.

Materials and Methods

As discussed in my earlier paper on brain injury,[4] treating internal IRT is best done with low level laser therapy (LLLT) . It has been the experience of myself as well as many other practitioners that the energetic effect of LLLT extends much deeper than the current visible light measurements. Thus the area of injury can be stimulated with the same effect as pinching or TL to an external injury in classic IRT. I use several types of lasers in my practice. I find that the GRT lite developed by Dr. George Gonzalez is also effective for internal IRT. I also find that a laser pen designed with an expandable beam and an on/off button works just as well for internal IRT as the much more expensive devices.[9] The complete procedure is outlined below:

1. Brain injury testing is best accomplished with the patient sitting
2. Find a facilitated (strong) muscle such as deltoid or pectoralis major clavicular to use as an indicator muscle
3. Have the patient extend their head/neck
    a. If this inhibits the indicator muscle, correct the cause such as occipital extension fixation

4. Test for brain IRT
    a. Set the laser or LED device on wide beam if possible
    b. Swipe the beam back and forth over the area to be tested 2-4 times
        i. EG, frontal lobe, corpus callosum, cerebellum, parietal or occipital lobe areas.
            1. For testing hippocampus IRT, swipe the beam back and forth between the sphenoid greater wing to a point just posterior to the ear.
    c. Have the patient extend their head
        i. If the combination of laser swipe stimulation followed by head extension inhibits the indicator muscle = need for brain IRT
5. Treatment
    a. Repeat the positive LLLT stimulation to a specific brain area as above
    b. Instruct the patient to relax their neck
    c. Passively flex the patient's head (occipital atlantal junction) two times within 5 seconds of LLLT stimulation.
    d. Repeat treatment for each area that tested positive for brain IRT
6. Retest as as in 4 a-c above to verify correction.
7. I suggest testing all individual brain areas before treating any of them
    a. Treating one area may cause changes that will alter (clear out) testing in other areas.
8. For long-term results it is important to address causes of recurring brain trauma
    a. Allergy, inflammation, chemical toxicity, gut issues etc as discussed earlier in this paper.
        i. Please note that there are more causes of recurring brain trauma than have been covered here.

In addition to the powerful effect resulting from brain IRT, additional benefits can be acheived with dose-based photobiomodulation of the involved brain area. Take an inhibited muscle (supraspinatus is ideal) and shine the LLLT or LED device on the brain area in question. If doing so facillitates the previously inhibited muscle, continue shining the device on that brain area for 1-5 minutes or until no more facillitation is observed. See my paper on enhancing vagus nerve function for the mechanism and benefits of photobiomodulation on the nervous system.[8]

Conclusion

Obviously, brain function has a powerful effect on total body function as well as mood and virtually everything that makes life worthwhile. The hippocampus provides many important functions and should be considered in cases of poor memory, appetite control issues, cortisol imbalance, sleep disorders, depression and anxiety. While approaches such as functional neurology, biochemistry and emotional therapy are important for optimizing

brain function, brain IRT provides a powerful and simple addition to brain therapy that can be used in a matter of seconds.

References

1. Schmitt, W.H., Jr., Injury recall technique: Dealing with the history of injury and trauma. Proceedings of Summer Meeting, ICAK, 1990.

2. Schmitt, W.H., Jr. A neurological rationale for injury recall technique. Proceedings of Summer Meeting, ICAK-USA, 1999.

3. Hogg, J, Injury Recall Technique Revisited. Proceedings of the Summer Meeting, ICAK-USA 2004.

4. Hogg, J, The Use of Low Level Laser Therapy and Injury Recall Technique in the Treatment of Closed Head and Other Brain Injury. Proceedings of the Summer Meeting, ICAK-USA, 2009.

5. Bachman, Tony W. Et al, Circadian Regulation of Cortisol After Hippocampal Damage in Humans. Biological Psychiatry Volume 56, Issue 9, November 1, 2004.

6. Fateh, AA Et al. Hippocampal Functional Connectivity-Based Discrimination Between Bipolar and Major Depressive Disorder. Psychiatry Res Neuroimaging, 2019, Jan 12.

7. Stajic, D Et al, The Role of Galectin-3 in Modulation of Anxiety state level in mice. Brain Behav Immun, 2019, Jan 22.

8. Hogg, J. Enhancing Vagus Nerve Funcction With Photobiomodulation. Proceedings of Summer Meeting, ICAK-USA, 2018.

9. http://store.laserclassroom.com/acupuncture-laser/

© 2019 All rights reserved.

How to Create Reactive Muscle

Paul T. Sprieser, D.C., DIBAK

Abstract

While teaching AK classes it is necessary to demonstrate the use and function of the special proprioceptors of the neuromuscular system. It is important to show students how this system works to strengthen a weak muscle or weaken a strong muscle. This being a basic principle of AK since 1974. To be able to produce this phenomenon when needed makes it much simpler than having to find this in the sampling of student that are attending class. This also helps to verify the information presented in Goodheart's Workshop Manual and Walther's Applied Kinesiology textbooks.

Introduction

The proprioceptors of the muscle system that are involved in this phenomenon are mainly two, the neuromuscular spindle or Spindle Cells (SC) and the neurotendinous spindles often called Golgi tendon organs (GTO). The terminology came for the Neurology textbook I used for a class I took at NYU while studying for my BS degree. In this text the statement was this proprioceptors are concerned chiefly with reflex rather than sensory mechanisms. It also stated in this 1963 book that little is known about other receptors in muscle.[1]

These proprioceptors regulate muscles regulate phasic and static types of stretch reflexes these are activated when muscles are stretched when their antagonists contract and also when joints are flexed as a result of the effect of gravity upon a limb. It was believed that antigravity muscles are so sensitive to the latter situation that they always exhibit static stretch reflexes, to the extent that they have what is called tone or postural contraction.[2]

"The nervous system uses these sensory receptors to modify and adjust muscle function so that peripheral automatic (subconscious) regulation will dominate in most of our so-called voluntary operational movements."[3]

The ability to effect muscles either by strengthening or weakening, by using direction pressures over the Spindle Cells (SC) and Golgi Tendon Organ (GTO), is well documented in many textbooks. This is due to two factors and size and concentration of locations, making access to the structures possible. Spindle Cells are relative large with length of 2mm to 20mm, with concentration in the bellies of skeletal muscles. Whereas the Golgi Tendon Organs are located at the musculotendinous junction, with a few muscle fibers averaging 10 to 15 are attached to the (GTO). Both system are influenced by pressure and tension derived from use as well as gravitational pulled. The SC are weakened with force applied over the structure pressing them together and strengthened by pulling them apart. The GTO are weakened by finger pressure at the musculo-tendinous juncture pulling them

apart and strengthen by pressing them toward one and other. The amount of force being between 1 to 7 kg., which translated 2.2 to 15.5 lbs. pressure. [4]

Discussion

Reactive muscle has been a component of AK since 1976, both in the Workshop Procedure Manual[5] and Applied Kinesiology: The Advanced Approach in Chiropractic.[6] Goodheart had observed that one muscle could weaken after the contraction of another. Drs. Walther and Goodheart believed this was due to the proprioceptors associated with the first muscle being set incorrect being the result of trauma.

The phenomenon of reactive muscle originate with the observation of Drs. Triano and Davis. What the original observations were the effects of rhomboid on the deltoid muscles. The study was of reactivity in the deltoid secondary to contraction of the rhomboid muscle measured electromyography.[7] Each muscle tested individually showed normal strength to a standard manual muscle test (MMT), but if the rhomboid was reactive to the deltoid was test first, then the deltoid was test within 20 to 30 seconds the deltoid would weaken.[8,9]

Trauma sets the spindle cell mechanism to high but does not cause the opposite muscle to become weak per se. The weakness takes place when the overactive muscle pulls against a normal muscle. Trauma is the only abnormal random activity to take place in the body. The relative frequency of one reactive muscle cause a problem to another muscle. This works through the proprioceptors of the spindle cells and golgi-tendon organs. Both work at subconscious level, with no sensory perception at all.

Using this information about the source of reactive muscle I decided to test Dr. Goodheart's observations of reactive muscle patterns that appeared in 1976, Applied Kinesiology Workshop Manual and Dr. Walther's, Applied Kinesiology: The Advanced Approach in Chiropractic. Other factors were explained by Dr. Goodheart in 1979, Chiropractic Economics article, that hypothesized that the neuromuscular spindle cell of the primary muscle, the afferent impulses cause an over abundant impulses cause an over abundant inhibition of a antagonist muscle through the inhibitory interneuron. The charts that appear in Synopsis cannot be considered all inclusive, what is suggested that factors that must be considered in the reactive patterns should include antagonists, primary movers, synergistic, fixation muscles as well as muscle interlink.

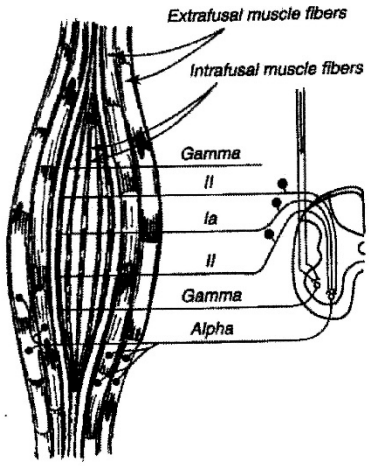
REACTIVE MUSCLE

Suspected Reactive Muscle	Sedation Required
Neck flexor	Contralateral psoas
Splenius capitis	Contralateral piriformis
Upper trapezius	Latissimus dorsi Biceps Contralateral upper trapezius
Deltoid	Rhomboid Pectoralis minor
Supraspinatus	Rhomboid Pectoralis minor
Rhomboid	Deltoid Serratus anticus Supraspinatus
Latissimus dorsi	Contralateral hamstring Upper trapezius
Pectoralis minor	Serratus anticus Supraspinatus Deltoid
Pectoralis major (clavicular division)	Gluteus maximus
Serratus anticus	Rhomboid Pectoralis minor
Biceps	Triceps Upper trapezius
Triceps	Biceps Supinator
Sacrospinalis	Transverse abdominals Gluteus maximus Hamstrings
Diaphragm	Psoas
Rectus abdominis	Quadriceps Contralateral gluteus medius
Upper rectus abdominis	Lower rectus abdominis
Lower rectus abdominis	Upper rectus abdominis
Transverse abdominals	Sacrospinalis
Psoas	Adductors Contralateral anterior neck flexor Diaphragm
Gluteus medius	Contralateral rectus abdominis
Piriformis	Contralateral splenius capitis
Gluteus maximus	Sacrospinalis Pectoralis major (clavicular division)
Hamstrings	Sacrospinalis Contralateral latissimus dorsi Quadriceps Popliteus
Tensor fascia lata	Adductors Peroneus tertius
Adductors	Tensor fascia lata Psoas
Quadriceps	Gastrocnemius Hamstrings Rectus abdominis Sartorius
Sartorius	Tibialis anterior Quadriceps
Popliteus	Gastrocnemius Hamstrings Upper trapezius
Gastrocnemius	Popliteus Quadriceps
Tibialis anterior	Sartorius
Peroneus tertius	Tensor fascia lata

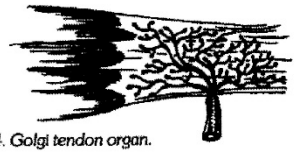
Permission granted by ICAK-USA to use the above chart from Applied Kinesiology: Synopsis 2nd Edition, David S. Walther, DC, page 66.

Method

I decided to test out all the reactive muscle pattern on the previous chart by using the muscle proprioceptors of both spindle cells and golgi-tendon organs. The following illustration are the spindle cell 2-61 and golgi-tendon organ 2-64.



2—61. Neuromuscular spindle cell.

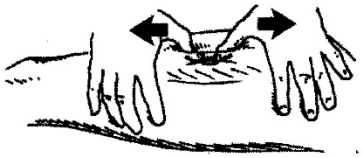


2—64. Golgi tendon organ.

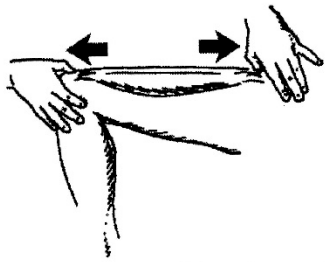
Permission granted by ICAK-USA to use the above illustration from Applied Kinesiology: Synopsis 2nd Edition, David S. Walther, DC, Spindle cell 2-61, p. 62 and Golgi 2-64, page 62.

The use of these muscle proprioceptors to strengthen a weak muscle the spindle are pulled apart or separated in the belly of the involved muscle, the golgi are located at the tendinous origin and insertion the a pressed towards the one-and-other toward the middle of the muscle. To weaken a strong muscle the spindle cell is pressed together in the belly of the muscle and the golgi-tendon organs are pulled apart away from the origin and insertion.

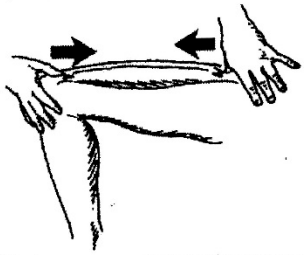
2—62. Digital pressure toward ends of neuromuscular spindle to weaken muscle.



2—63. Direction of digital pressure to strengthen muscle which is weak from apparent neuromuscular spindle malfunction.



2—65. Direct pressure over Golgi tendon organ away from belly to weaken.



2—66. Direct pressure over Golgi tendon organ toward belly to strengthen.

Permission granted by ICAK-USA to use the above illustration from Applied Kinesiology: Synopsis 2nd Edition, David S. Walther, DC, Spindle cell therapy 2-62 weaken, page 62, 2-63 strengthen, Golgi-Tendon Organ therapy 2-65 to weaken, 2-66 to strengthen, page 64.

Over period of two year I tested Dr. Goodheart's observation of reactive patterns on 250 regular patients, divided equally between male and female. This was done on patient who were found to have reactive muscle during treatment. In this group I would take the reactive muscle group and try to produce the same pattern on the opposite side. I other group of patient's that showed no reactive patterns muscle that would be tested in the Dr. Goodheart's Reactive Muscle Chart, I would select two or three if time permitted I would test both ways. The Reactive Chart is from page 66 for Synopsis 2nd Edition, showing the listing under (Suspected Reactive Muscle and Sedation Required Muscles), I would us the spindle cells and golgi-tendon organs on a (normal) strong muscle then check to see if I could produce the reactive pattern.

Conclusion

Dr. Goodheart's reactive muscle chart was absolutely correct in observation and findings and the system worked both way. By this I mean either the reacting muscle or the inhabited muscle could be used to produce the desired reactive muscle pattern in test subjects, and follow the reactive chart exactly in all 250 test subjects. This facts is very important to teaching diplomates of AK, because it allows us to demonstrate reactive muscle in class without trying to find a specific pattern we want to demonstrate. It also allows us to show that Dr. Goodheart's observation are 100% reliable.

The cause of the reactive muscle phenomena is due to the hyperactivity of the spindle cells and the golgi-tendon organs being set to high in its resting stage as Dr. Goodheart theorized. This can be produced in any skeletal muscle that are normal by setting the resting stage higher in both the (SC and GTO). This will produce a reactive muscle but it will be a short lived condition not lasting longer than 1 or 2 minutes.

References

1. Gardner Ernest, MD-Fundamentals of Neurology, W. B. Saunders, 1963.

2. Walther, David, DC-Applied Kinesiology, Vol. 1, Basic Procedures and Muscle Testing, SYSTEMS DC, Pueblo CO, 1981.

3. Gowitzke, Barbara, PhD, and Milner, Morris, PhD, Understanding the Scientific Bases of Human Movement, 2nd Edition, Williams and Wilkins, 1980.

4. Spencer, Alexander, PhD, Mason, Elliott, PhD-Human Anatomy and Physiology, 2nd Edition, Benjamin/Cummings Publisher Co., 1983.

5. Chusid, Joseph, MD, McDonald, Joseph, MD-Correlative Neuroanatomy and Functional Neurology, 12th Edition, Lange Medical Publications, 1964.

6. Goodheart, George, DC-Applied Kinesiology Workshop Procedural Manual, Private Publication, 1976, pages 1-14.

7. Walther, David, DC-Applied Kinesiology: The Advanced Approach in Chiropractic, SYSTEM DC, 1976, pages 20-22.

8. Triano, J, DC and Davis, B. DC-"Reactive Muscles Reciprocal and Cross Reciprocal Innervation Phenomenon", Proceedings of 7th Annual Bio-mechanic Conference on The Spine, University of Colorado, at Boulder, 1976.

9. Walther, David, DC-Applied Kinesiology: Synopsis, 2nd Edition, SYSTEMS DC 1988-2000, Pages 62-67.

10. Goodheart, George, DC-"Reactive Muscle Testing", Digest of Chiropractic Economics, Jan/Feb, Vol. 21, No. 4, 1979.

© 2019 All rights reserved.

Less Common Toxic Metals: Beryllium, Gadolinium, Titanium, Zirconium, Barium, Lithium, Silver, Platinum, Boron, and Silicon in the Applied Kinesiology Practice

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

Abstract

With the common use of vial testing in the Applied Kinesiology practice many practitioners have been doing extensive metal screening and finding less common metals causing a positive muscle testing response. Sources of these metals, symptoms of sensitivity and/or overexposure are explored and reported.

Key Indexing Terms
Heavy Metals, Metal Toxicity, Applied Kinesiology

Discussion

Toxic metals are very hard to evaluate in the AK and functional medicine practice. Various methods such as hair analysis, blood tests, urine tests (base and provocative), stool analysis, sweat analysis, etc. are utilized. All of these methods have their pros and cons. If the level of a particular metal is high on one of these tests does it mean the body burden is high and causing symptoms or might it mean the person is an efficient excretor of that particular metal, thus the high level in the sample? If the metal results fall within "normal limits" or below, is that a negative finding or perhaps the patient cannot excrete the metal efficiently? Is it possible the patient is sensitive to levels of the metal that are significantly below the high range of the test or not sensitive to higher than normal levels?

Some of these problems of interpretation can be better addressed when adding in muscle testing. Muscle testing when understood and performed properly (with proper provocation, hypertonic reactions etc.) can tell us if a patient has a positive neurological response to a certain metal though it cannot tell us body burden. Reactivity is perhaps the most important factor we are looking for in a patient as it tells us if the nervous system is adversely responding and thus the issue should be addressed.

About a year ago with the addition of what we felt was a more comprehensive metal testing kit we started finding more patients showing positive responses to metals like beryllium,

gadolinium, zirconium, etc. This paper is an attempt to show where some of the exposures might be originating from as well as documented symptoms related to these exposures, present some data on how often these might be showing up in testing (data compiled from the practices of 4 different AK physicians), as well as looking at the role of metallothionein in metal detoxification and other treatment strategies.

BERYLLIUM
Sources: Because of berylliums properties of being both strong as well as lightweight it is used in the manufacturing of cell phones, missiles, aircraft, dental materials. It is often alloyed with copper to make springs, gyroscopes, disc breaks, car windshields, used in nuclear reactors, cameras, and mirrors. Exposure downwind of manufacturing plants, nuclear plants, as well as from high trafficked areas can be a major source of exposure.[1,2]

Beryllium is classified as carcinogenic by the International Agency for Research on Cancer.[1]

Dr. Lew Pepper, a medical researcher at Queens College Center for the Biology of Natural Systems in New York, has found that beryllium sensitivity has a genetic component (most sensitive people have an immune system protein known as HLA-DP2).[3]

Most of the research on berylium exposure deals with airborne exposure. More research needs to be done regarding oral (dental work) and transdermal exposure.

The agency for toxic substances and disease registry lists the following symptoms of beryllium exposure:

Persistent dry cough, shortness of breath especially in exertion, chest pains, night sweats, fatigue, small raised red bumps, rash, fatigue, joint pain, and loss of appetite.[4,5]

A more specific blood test, the blood beryllium lymphocyte proliferation test (BeLPT), identifies beryllium sensitization, which may lead to chronic beryllium disease.

GADOLINIUM
Sources: Gadolinium is soluble in acid and dissolves slowly in water.
It is used in color TVs, microwaves, MRI contrast media (because of its magnetic properties), alloys of iron and chromium to improve resistance to high temperatures and oxidation.[6,7]

Symptoms:
In rough order of frequency as reported in Survey of the Chronic Effects of Retained Gadolinium from Contrast MRIs, symptoms of exposure can include

- Pain – aching; burning, tingling, and/or prickling pain (paresthesia); deep bone pain. Typically in extremities or joints, and sometimes in the location where the MRI occurred, like the head.
- Brain fog
- Persistent Headache

- Dermal changes – like tight skin, lesions, hyperpigmentation. Most often in extremities.
- Muscle issues – twitching – small, local, rapid contractions and weakness
- Ocular problems – worsening vision, dry eyes, bloodshot eyes
- Ear, nose and throat – tinnitus, swallowing, and voice problems
- Low body temperature
- Hair loss
- Itchy skin
- Balance problems
- Swelling of extremities (edema)[8]

TITANIUM

Sources: Titanium resists corrosion and is particularly strong and lightweight. It's as strong as steel, but only 45 percent the weight. It is also twice as strong as aluminum, but only 60 percent heavier. Airliners (a Boeing aircraft is approx. 15% titanium), body piercings and medical equipment and sunscreen, bike frames, body implants (dental, joint, etc.), filler in pharmaceuticals and some vitamins/minerals, cosmetics, toothpaste, chewing gum, marshmallows, paints, and food additive (acts as a whitening agent).[9]

Symptoms: There are no restrictions on the use of titanium dioxide in food products. However, a new study on mice shows that titanium dioxide particles may be very damaging to the intestines of those with certain inflammatory bowel diseases.[10]

Researchers at the University of Zurich in Switzerland found that when intestinal cells absorb titanium dioxide particles, the intestinal mucosa of mice that had colitis became inflamed and damaged. The Swiss researchers have found that titanium dioxide nanoparticles, commonly found in toothpaste and many food products, can exacerbate this inflammatory reaction.[11]

In addition, higher concentrations of titanium dioxide particles can be found in the blood of patients with ulcerative colitis.[12] These particles can be absorbed from food under certain disease conditions.

Other symptoms of titanium toxicity/sensitivity include

- loosening of the implants (or implant failure)
- rash or hives
- sores and swelling in the soft tissues of the mouth
- chronic inflammation in the gums around the implant
- problems with wound healing
- chronic fatigue syndrome
- acne-like swelling or inflammation of the face
- muscle and joint achiness
- neurological problems

ZIRCONIUM
Sources: Zirconium is malleable and easily forms stable compounds resistant to corrosion. Zirconium alloys can be found in pipes, fittings and heat exchangers.[13]

Zirconium is also used in steel alloys, colored glazes, bricks, ceramics, abrasives, flashbulbs, lamp filaments, artificial gemstones and some deodorants, according to Minerals Education Coalition.[14]

Other uses for zirconium include catalytic converters, furnace bricks, lab crucibles, surgical instruments, television glass, removing residual gases from vacuum tubes, and as a hardening agent in alloys such as steel.[15] It is now also used as an alternative to titanium in dental implants.

Symptoms:

- Development of granulomas has been reported following application of zirconium-containing deodorants and dermatitis treatments to broken skin.

Ocular

- Eye irritation, lacrimation, blurred vision and conjunctivitis may occur.

. Hoarseness, dyspnea and, in severe cases, stridor due to laryngeal edema.

- Pulmonary edema has been reported after exposure to zirconium tetrachloride
- Pulmonary granulomas have been reported in workers chronically exposed to zirconium dusts[16]

LITHIUM
Sources: ceramics, glass, electrodes, alloyed with aluminum, glazes, ovenware, fireworks, rocket propellants, nuclear fusion, a component of some community drinking water and hot springs, pharmaceutical, nutritional supplement.[17]

Symptoms: fatigue, tremors, diarrhea, muscle weakness, heightened reflexes, agitation, kidney stress, confusion, uncontrollable eye movements, frequent urination.

BARIUM
Barium is most known for its use in diagnostic x-ray studies of the gastrointestinal tract
Sources: rat poison, weighting agents in oil drilling fluids, contrast in various diagnostic x-rays, sparkplugs, pigment, glassmaking, fireworks.[19]

Symptoms: vomiting, colic, diarrhea, tremors and paralysis, difficulties in breathing, increased or decreased blood pressure, numbness around the face, and muscle weakness.

SILVER
According to Jefferson National Linear Accelerator Lab silver is the best conducting metal of heat and electricity as well as best reflector of visible light.[21] It is used in a myriad of sources including mirrors, coinage, jewelry, silverware, some textiles, atteries,

the photographic process, wire, cloud seeding, etc.22.

Symptoms: Even though silver can be antimicrobial it can have deleterious effects: permanent blue-grey discoloration to skin and/or eyes, liver and kidney damage, irritation of the eyes, skin, respiratory (bronchitis, emphysema), and intestinal tract. It also depletes glutathione levels.[23]

PLATINUM
Sources: jewelry, catalytic converters in automobiles, pacemakers, metals[24]
Symptoms: irritation of the eyes & nose; cough, dyspnea, wheezing, & cyanosis; skin sensitization; & lymphocytosis, photophobia.[25]

BORON
Sources: Boron is not considered a metal and is an essential nutrient at some levels but can become toxic with overexposure. Borax is a common mined form that many of us use in doing laundry as it acts as a whitening agent and anti-fungal. Also used as ant killer, in nuclear fission, rocket fuel igniter, fireworks, flame retardant, food preservative, fiberglass and beach manufacturing.[26,27]

Symptoms: respiratory irritation, liver, kidney, CNS and GI damage, impaired ovulation, testicular atrophy.[28]

SILICON
Sources: Silicon is considered a metalloid. It is found in computer chips, filler in supplements and medications, sand, glass, breast implants, bricks, ceramics, transistors, electronics, cooking molds, suntan and other skin care products.[29]

Symptoms: chronic bronchitis, emphysema, bronchiectasis, and chronic airway obstruction, shortness of breath, chest pain, or a persistent cough, kidney disease, autoimmune diseases, RA, and more.[30,31,32]

Testing Methods – Applied Kinesiology
Before testing the individuals we do a 5-10 second deep tissue kneading of their abdominal adipose tissue. Many metals and chemicals have been shown to be stored in adipose tissue, and by doing this before we started we found to increase the number of our positive findings substantially.

Take a vial of each metal individually and hold under the south pole of a magnet with the vial being over GV-20 or GV-27 on a person. We then use the pectoralis minor muscle on the patients right side of the body to test the individual. We make sure the muscle is adducted to the point it is over the left side of the body when beginning the test. Testing with a strong indicator muscle other than the pectoralis minor results in many false negatives that are only found when testing with the right pectoralis minor.

Results- Testing prevalence Fifty new patients were tested between two clinics, one in Phoenix AZ and the second in Tacoma WA between the dates of October 2018 and

February 2019. The metals tested for were: Aluminum, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Copper, Gadolinium, Gold Iron, Lead, Lithium, Manganese, Mercury, Nickel, Platinum, Silicon, Silver, Sulfur, Tin, Titanium, Zinc, and Zirconium. These include the metals talked about above, in addition to more common heavy metals such as mercury and lead.

The average person showed a positive muscle testing response to 3.64 vials, with a range of 0 to 9 vials each. Lithium was the least common vial to test, with only 3 of 50 people responding (6%). Arsenic was the most common with 13 out of 50 people responding (26%). The results are below with how many times each metal was found:

Aluminum 4	Gadolinium 9	Platinum 8
Arsenic 13	Gold 9	Silicon 7
Barium 6	Iron 4	Silver 10
Beryllium 11	Lead 4	Sulfur 8
Boron 8	Lithium 3	Tin 8
Cadmium 10	Manganese 5	Titanium 9
Chromium 8	Mercury 9	Zinc 10
Copper 7	Nickel 7	Zirconium 5

Interpretation
A positive neurological response via AK to a vial of a metal (be it energetic, homeo-pathic, etc.) does not prove there is a high body burden but it is suggestive that it is worth looking into. As stated earlier, there are various labs that also may be suggestive but all have their own issues. If done properly, chelation of these substances using plant materials that are very safe is a reasonable course to pursue if you feel any of these are contributing to your patient's state of unwellness. In our clinics we pursue 2 routes- excretion/chelation using carbonized bamboo as well as encouraging the body to increase its' Metallothionein levels.

Exposure to heavy metals can cause many different health ailments including neuropathy, organ failure, cancer, fatigue, brain fog, etc. Clinically we have seen metal toxicity correlate with numbness and tingling sensations, drooling at night, outbursts of unprovoked anger or depression, balance issues, sensitivity to EMF's, gum and/or tooth pain. Some of the more common heavy metal exposures are copper, lead, mercury, aluminum, and arsenic. The most common ways to try and detoxify heavy metals is via chelation therapy or detoxification agents.

In addition to taking supplements that bind to heavy metals, ones body has its own way to detoxify itself of various heavy metals. One of the ways is through a protein called Metallothionein (MT).

Metallothionein has been shown to bind copper, mercury, silver, arsenic, etc.[33] It has been shown to help protect against oxidative stress in addition to protecting against heavy metal

toxicity.[34] Studies have shown MT to bind to superoxide and hydroxyl radicals, as one of its ways to decrease oxidative stress.[35] It also works by inhibiting NF-κB signaling.[36] By increasing MT in the brain, mercury, among other metals, can be detoxified.[37]

Decreased levels of MT have been thought to be a cause of oxidative stress, autism, depression, intestinal inflammation, reduced natural killer cells, and blood-brain barrier dysfunction. After Glutathione levels are used up, MT takes over the main job of heavy metal chelation. MT is a key part of maintaining adequate zinc levels in the body.[38] Those with autism often have altered zinc to copper ratios, which is a key role of MT.[39] "MTs are very important proteins in brain functioning mainly located in astrocytes which can protect neurons against excitotoxicity induced by experimental models of epileptic seizures or in damaged brain tissue as a result of focal cerebral ischemia through modulation of events such as inflammation, oxidative stress, and apoptosis."[40]

Reduced MT levels have been associated with Alzheimer's disease.[41] Defective MT function has been shown to potentially contribute to cancer.[42] MT levels have been shown to dramatically increase when the body comes under infection. In cases of children with sepsis, those having higher levels of MT have a much higher survival rate. With the binding ability of MT to zinc, MT is responsible for moving around zinc to where the body needs it during times of infection.[43] By transporting zinc to certain areas of the body MT can assist in fighting candida and other microbial infections.[44] Hops, Cordyceps, clove, watercress, pomegranate, and prune skin are several herbs that have been shown to increase MT levels in the body.

Conclusion

Testing for heavy metals and other elements and metals is something that can be done fast and effectively using AK. Interpretation needs to be done carefully by the practitioner, but along with other clinic signs and symptoms can be a valuable piece of the puzzle in chronic patients. By being able to evaluate a person and design a proper treatment protocol, be it with binders and/or herbs to increase Metallothionein levels, can greatly help many people.

References

1. Blaszczak-Boxe, Agata. "Facts About Beryllium." *LiveScience*, Purch, 6 Oct. 2017, www.livescience.com/28641-beryllium.html.

2. "Beryllium." Periodic Table of Elements: Los Alamos National Laboratory, periodic.lanl.gov/4.shtml.

3. Takaro, Tim K., et al. "Screening for chronic beryllium disease." American journal of respiratory and critical care medicine 172.9 (2005): 1230.

4. Taylor, Tammy P., et al. "Beryllium in the environment: a review." Journal of Environmental Science and Health, Part A38.2 (2003): 439-469.

5. Cooper, Ross G., and Adrian P. Harrison. "The uses and adverse effects of beryllium on health." Indian journal of occupational and environmental medicine 13.2 (2009): 65.

6. Staff, Live Science. “Facts About Gadolinium.” LiveScience, Purch, 16 July 2013, www.livescience.com/38220-gadolinium.html.

7. Thornley, Jackie. “JACKIE THORNLEY.” Chemicool, www.chemicool.com/elements/gadolinium.html.

8. Williams, Sharon, and Hubbs Grim. Gadolinium Toxicity A Survey of the Chronic Effects of Retained Gadolinium from Contrast MRIs, 2014, gdtoxicity.files.wordpress.com/2014/09/gd-symptom-survey.pdf.

9. Pappas, Stephanie. “Facts About Titanium.” LiveScience, Purch, 3 Oct. 2017, www.livescience.com/29103-titanium.html.

10. Achtschin, Cassiana Ganem, and Aytan Miranda Sipahi. "The role of titanium dioxide in the gut." Nutrition & Food Science47.3 (2017): 432-442.

11. “Titanium Dioxide Nanoparticles Can Exacerbate Colitis.” UZH, Universität Zürich, 13 Dec. 2017, www.media.uzh.ch/en/Press-Releases/2017/titanium-dioxide-nanoparticles-colitis.html.

12. Evrard, L., D. Waroquier, and D. Parent. "Allergies to dental metals. Titanium: a new allergen." Revue médicale de Bruxelles 31.1 (2010): 44-49.

13. Stewart, Dr Doug. “Zirconium Element Facts.” Chemicool, www.chemicool.com/elements/zirconium.html.

14. “Zirconium.” Minerals Education Coalition, mineralseducationcoalition.org/elements/zirconium/.

15. “Zirconium Facts.” Lenntech Water Treatment & Purification, www.lenntech.com/periodic/elements/zr.htm.

16. Harrison, WN, and SM Bradberry. “ZIRCONIUM.” Zirconium (UK PID), www.inchem.org/documents/ukpids/ukpids/ukpid90.htm.

17. Wilson, Cynthia. Chemical Exposure and Human Health: a Reference to 314 Chemicals with a Guide to Symptoms and a Directory of Organizations. McFarland & Co., 1993.

18. Gitlin, Michael. "Lithium side effects and toxicity: prevalence and management strategies." International journal of bipolar disorders 4.1 (2016): 27.

19. Stoll, Carol. “Facts About Barium.” LiveScience, Purch, 6 Nov. 2017, www.livescience.com/37581-barium.html.

20. “Toxic Substances Portal - Barium.” Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 21 Jan. 2015, www.atsdr.cdc.gov/phs/phs.asp?id=325&tid=57.

21. “It's Elemental.” It's Elemental - The Element Silver, education.jlab.org/itselemental/ele047.html.

22. Pappas, Stephanie. “Facts About Silver.” LiveScience, Purch, 11 Dec. 2014, www.livescience.com/37040-silver.html.

23. Drake, Pamela L., and Kyle J. Hazelwood. "Exposure-related health effects of silver and silver compounds: a review." The Annals of occupational hygiene 49.7 (2005): 575-585.

24. Ross, Rachel. “Facts About Platinum.” LiveScience, Purch, 1 Aug. 2016, www.livescience.com/39144-platinum.html.

25. “Platinum.” U.S. National Library of Medicine, National Institutes of Health, toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs%2Bhsdb%3A%40term%2B%40DOCNO%2B6479.

26. “Boron - Element Information, Properties and Uses | Periodic Table.” Royal Society of Chemistry - Advancing Excellence in the Chemical Sciences, www.rsc.org/periodic-table/element/5/boron.

27. “Boron.” Periodic Table of Elements: Los Alamos National Laboratory, periodic.lanl.gov/5.shtml.

28. “BACKGROUND AND ENVIRONMENTAL EXPOSURES TO BORON IN THE UNITED STATES.” Boron, www.atsdr.cdc.gov/toxprofiles/tp26-c2.pdf.

29. Pappas, Stephanie. “Facts About Silicon.” LiveScience, Purch, 26 Apr. 2018, www.livescience.com/28893-silicon.html.

30. “What Are the Health Effects?” Signs & Symptoms - Silica Safe, www.silica-safe.org/know-the-hazard/what-are-the-health-effects/signs-symptoms.

31. Speck-Hernandez, Cesar A., and Gladis Montoya-Ortiz. "Silicon, a possible link between environmental exposure and autoimmune diseases: the case of rheumatoid arthritis." Arthritis 2012 (2012).

32. Colaris, Maartje JL, et al. "Two hundreds cases of ASIA syndrome following silicone implants: a comparative study of 30 years and a review of current

literature." Immunologic research 65.1 (2017): 120-128. 33. Sigel H, Sigel A, eds. (2009). Metallothioneins and Related Celators (Metal Ions in Life Sciences). Metal Ions in Life Sciences. 5. Cambridge, England: Royal Society of Chemistry. ISBN 1-84755-899-2.

33. Felizola SJ, Nakamura Y, Arata Y, Ise K, Satoh F, Rainey WE, Midorikawa S, Suzuki S, Sasano H (2014). "Metallothionein-3 (MT-3) in the human adrenal cortex and its disorders". Endocrine Pathology. 25 (3): 229–235. doi:10.1007/s12022-013-9280-9.

34. Kumari MV, Hiramatsu M, Ebadi M (August 1998). "Free radical scavenging actions of metallothionein isoforms I and II". Free Radic. Res. 29 (2): 93–101.

35. Pan, Yuanming, et al. "Metallothionein 2A inhibits NF-κB pathway activation and predicts clinical outcome segregated with TNM stage in gastric cancer patients following radical resection." Journal of translational medicine 11.1 (2013): 173.

36. Sinaie, Mahmood, et al. "Metallothionein biosynthesis as a detoxification mechanism in mercury exposure in fish, spotted scat (Scatophagus argus)." Fish physiology and biochemistry 36.4 (2010): 1235-1242.

37. Ruttkay-Nedecky, Branislav, et al. "The role of metallothionein in oxidative stress." International journal of molecular sciences 14.3 (2013): 6044-6066.

38. Faber, Scott, et al. "The plasma zinc/serum copper ratio as a biomarker in children with autism spectrum disorders." Biomarkers 14.3 (2009): 171-180.

39. Juárez-Rebollar, Daniel, et al. "Metallothionein in brain disorders." Oxidative medicine and cellular longevity 2017 (2017).

40. Yu, W. Haung, et al. "Metallothionein III is reduced in Alzheimer’s disease." Brain research 894.1 (2001): 37-45.

41. Krizkova S, Fabrik I, Adam V, Hrabeta J, Eckschlager T, Kizek R (2009). "Metallothionein--a promising tool for cancer diagnostics". Bratisl Lek Listy. 110 (2): 93–7.

42. Subramanian Vignesh, Kavitha, and George S. Deepe Jr. "Metallothioneins: Emerging modulators in immunity and infection." International journal of molecular sciences 18.10 (2017): 2197.

43. Walsh PhD, William. “Commentary on Nutritional Treatment of Mental Disorders | A Guide to Alternative Mental Health.” Alternative Mental Health, 19 Jan. 2015, www.alternativementalhealth.com/commentary-on-nutritional-treatment-of-mental-disorders/#Ca.

© 2019 All rights reserved.

Putting 1 and 1 Together for a Better Diagnosis

John Erdmann, D.C, LAc, DIBAK

Abstract

Taking The Pulse Rate Of A Patient On Every Visit Can Help Diagnose Hot And Cold TCM Conditions Along With Evaluation Deficiency Or Excess, can Multiply Our Expected Clinical Findings And Give Us More Precise Recommendations To Our Patients.

Key Indexing Terms
Applied Kinesiology, Meridian Therapy, Traditional Chinese Medicine, Muscle Testing

Dicussion

As Doctors, most of us take the pulse as a routine part of blood pressure on the initial examination. I suggest we take the pulse, maybe with a pulse oximeter or counting from our wrist pulse on every visit. Not found in Bates medical examination book or any other medical book I know of, but steeped in the science of Chinese medicine is the idea of a fast pulse >90 suggesting more heat and a slow pulse <60 is suggesting heat or cold conditions. In fact, any movement away from 80 bpm ie. 75, or 85 is caused by such heat or cold.

So what is a "Cold" condition? Such issues like poor digestion (spleen Qi deficiency) or loose bowels can be symptoms of cold. Heat can cause blood accumulation (stagnation), inflamation, or violent diarrhea. Both cause pain. Pain with pressure is excess vs. feeling better with pressure as in deficiency. This leads us back to comparing our other factors like excess and deficiency.

As discussed in my first paper, excess and deficiency can be globally diagnosed from the primary pulse point analysis. Like all of our observations, it should add up together. If we get contrary facts we have clues to switching or psychological reversal. For example, we have a deficient patient that does not like pressure is wrong!

Here are our basic 4 conclusions from pulse and strength:

- Deficient and slow
- Deficient and fast
- Excess and slow
- Excess and fast

In the first, a few examples could be kidney yang deficiency which is the Acupuncturist number one age related back and knee pain condition. Arthritis is possible, poor digestion, vulnerable to the flu! These are all possible conditions. In deficient and fast pulse we think deficiency heat or yin deficiency/ fake heat that causes chronic illness (look for a red

underside tongue to help confirm).

Now for excess and slow, TCM calls it accumulation of cold, very similar as the first example except pressure may not help or be a factor. Here we think accumulations like tumors or masses or even certain types of bowel disorders.

Lastly, excess and fast leads us to think true heat such as; yang excess. Too many stimulants. We find excessive heat in acute conditions, a lot of our sports injuries.
Putting it all together, let's follow a simple protocol.

Take the pulse
Perform pulse point analysis (PPA)
**Regardless of the 3 types of PPA, test the non-facilitated muscle with the appropriate sedation or tonification point of the Alarm point that was found to strengthen (or stroke that meridian channel forward or reverse meridian flow) "Point of clarification", the Alarm point does not distinguish as deficient or excess. "It is a balance point ONLY."

Now choose what basic 4 conclusion you have found?
Treat less (deficient) or more (excess)
Choose herbs and nutrition that aids heat or cold, use more visceral (cold) or cupping, bleeding, hydration and cooling techniques for heat. Diet suggestions, exercise suggestions.

Observe for constitutional changes from visit to visit, and for all the conditions to add up correctly (i.e. likes pressure or not, has a chronic or acute issue etc.)

Conclusion

Again, Taking a few extra minutes of evaluation time to check for deficiency or excess and now the pulse can help you give the correct amount of treatment and/ or stimulus, and alert you to "switching" as well as better advice to give, helping to make you a better doctor.

References

1. The Foundations of Chinese Medicine: A comprehensive text, 3rd edition, Giovanni Maciocia. ISBN-13: 978-0702052163.

2. Chinese Acupuncture and Moxibustion (3rd Edition, 19th Printing, December 2018) by Cheng Xinnong. ISBN-13: 978-7119059945.

3. Applied Kinesiology Synopsis, By David S. Walther. 2nd edition (1988) ISBN-10:0929721047.

2019 All rights reserved.

Retraining Bilateral Muscle Weakness with Corrective Exercises

Konrad Grzeszkowiak, D.C.

Abstract

Corrective exercises have been shown to retrain proper muscle firing patterns. Appropriate chiropractic manipulation therapy to spinal subluxations/fixations has shown to correct simultaneous muscle dyspoiesis. Besides walking, there are exercises that should be recommended to retrain simultaneous muscle firing patterns and prevent correlated spinal subluxations/fixations from reoccurring.

Key Indexing Terms

Corrective Exercises, Spinal Fixations, Bilateral Muscle Weakness

Introduction

In Applied Kinesiology (AK), simultaneously testing the same muscles bilateral can correlate to specific spinal fixation patterns and even specific spinal subluxations. Primarily treating limbic fixation patterns and foundational limbic fixation patterns may abolish other fixation patterns previously found. It has been taught in Applied Kinesiology that after a fixation pattern or subluxation pattern has been treated, that the patient can maintain the treatment by walking as long as their gait pattern has been addressed. However, what if a fixation pattern continues to reoccur? Do we continue to treat the fixation with chiropractic manual therapy (CMT) alone? In addition to the CMT and walking, the patient can be educated to perform certain corrective exercises to improve posture, improve spinal alignment, and prevent spinal subluxation/fixation patterns from re-occurring.

Discussion

The following corrective exercises are correlated to improve bilateral muscle dysfunctions.

Simultaneous Muscle Dyspoiesis	Corrective Exercise
1. TFL	Dead Bug (60-90 Second Hold) 2 sets
2. Glute Medius	Glute Bridge (120 Second Hold with Toes Up) 1-2 sets
3. Piriformis	Glute Bridge (120 Second Hold with Toes Up) 1-2 sets
4. Rectus Abdominous	Dead Bug (60-90 Second Hold) 2 sets
5. Latissimus Dorsi	Lateral Pull Down With Exercise Band (12-15 reps) 2-3 sets
6. Deltoids (Mid)	Wall Sit Over Head Reach with Chin Retraction (30-60 sec)
7. SCM	Wall Sit Over Head Reach with Chin Retraction (30-60 sec)

8. Teres Major	Elbow Pushups (8-12 reps) 1-2 sets

Bilateral Muscle Weakness (Tested Separately)	Corrective Exercise
1. Lower Trapezius	Wall Sit Over Head Reach with Chin Retraction (30-60 sec)
2. Gluteus Maxiumus	Dead Lift with Exercise Band/Cable (12-15 reps) 2-3 sets
3. Soleus	Eccentric Heel Raises (12-15 reps) 2-3 sets
4. Serratus Anterior	Over Head Palms Up Exercise Band Pull-apart (20-30 reps)

Conclusion

These corrective exercises when performed daily for 1-2 weeks will abolish the Simultaneous Muscle Dyspoiesis and Bilateral Muscle Weakness (tested separately) as well as maintain normal spinal structure and function. These exercises are clinically helpful when retraining patient's movement and motor patterns.

References

1. Clark, A. Micheal, Lucett, C. Scott, NASM Essentials of Corrective Exercise Training.

2. Clark, A. Micheal, Lucett, C. Scott, NASM Essentials of Sports Performance Training.

3. Ibid., Spinal Subluxation/Bilateral Muscle Syndrome Correlations. Experimental Observations of the Members of the I.C.A.K., Vol. 1, (2000-2001).

4. Frank, Victor, Dynamics of T.B.M. Workbook. Privately Published, Sandy, Utah (1195).

5. Walther, David S. (2000) *Applied Kinesiology Synopsis 2nd Edition.* Mission, Kansas: Triad of Health Publishing.

© 2019 All rights reserved.

Review and Nuances of the AK Basic "Pulse Point Procedure"

John Erdmann, D.C, LAc, DIBAK

Abstract

Re-evaluating Applied Kinesiology Basic Point Evaluation And The Diagnosis Of Excess Or Deficient Syndromes As Utilized In Traditional Chinese Medicine. Manual Muscle Testing Can Be Used To Determine Excess Or Deficiency Syndromes.

Key Indexing Terms
Applied Kinesiology, Manual Muscle Testing, Traditional Chinese Medicine, Deficient Sundromes.

Dicussion

Pulse point analysis is one of three basic evaluations in Applied Kinesiology. The other two forms of evaluation are postural analysis and temporal sphenoidal line analysis. My first paper in published in these proceedings, "Putting 1 & 1 together for laying out the foundation of including 2 of TCM or Traditional Chinese Medicines 8 Principles "Ba Gong" analysis.

The 8 Principles (辩证) are: yin vs. yang, interior vs. exterior, cold vs. hot, and deficiency vs. excess.

We learn in the basic 100 hour AK course of meridian theory that Yin is female, inside, cold, and of blood; where as, Yang is male, outside, hot, and of Qi. Basically, Yin and yang can incorporate the 6 conditions, but can have a mix since yin is in yang and yang is in yin as the Tai Ji or otherwise referred to as yin/yang symbol picture shows.

In this discussion, deficiency and excess are of utmost AK importance or any good treatment from a doctor.

Deficiency is sometimes referred to as vacuity by Giovanni Maciocia, but generally means lack, where excess means too much.

Converting this into AK and/or neurology terms we would get hypertonicity or hypotonicity. In either case you can get a non-facilitation, facilitation or over-facilition. Where we have a weak, normal or too strong manual muscle test.

The 3 different outcomes:
(1) Same channel
(2) 24 hour clock, or

(3) Shen Ko cycle
All tell us how to fix the channel. However, The first, most basic test we can perform is to take our primary muscle weakness we have found from the patient TL (therapy localization) to the Alarm points and test it for deficiency or excess.

Simplest method is to run gentle pressure against or with the flow of the channel. In John Thie's book, is the first place I saw this utilized. However, basic acupuncture techniques utilize stimulating a channel forward as a tonifying and against its flow as sedating techniques. Otherwise, a more exacting method is to tap the specific sedation or tonification point associated with the muscle meridian channel.

So now we should be asking, why do and learn this little factoid about our patient? Besides the obvious of a more exacting treatment. It is my observation that most AK students learn the basic meridian pulse point analysis but get inconsistent results, in part to their assumption that the weak muscle they find is always deficient.

One of the best things we can do for our patients is look, and "see with eyes that see!" reading our patients and learning the little clues about what is the "secret" to help them. The biggest clue is that in a 'True" deficient primary problem, we should do less, under-stimulate, under educate, pick our battles to heal with our patient. The opposite is true with a "True" excess patient. Give them exercises, teach, and adjust a lot.

Conclusion

Taking the few extra minutes of evaluation time to check for deficiency or excess can help you give the correct amount of treatment and/ or stimulus to make you a better doctor.

References

1. The Foundations of Chinese Medicine: A comprehensive text, 3rd edition, Giovanni Maciocia. ISBN-13: 978-0702052163.

2. Chinese Acupuncture and Moxibustion (3rd Edition, 19th Printing, December 2018) by Cheng Xinnong. ISBN-13: 978-7119059945.

3. Applied Kinesiology Synopsis, By David S. Walther. 2nd edition (1988) ISBN-10:0929721047.

4. Touch for Health: A Practical Guide to Natural Health Using Acupressure Touch and Massage,by John Thie & Keith Marks. ISBN-13: 978-0875161808.

2019 All rights reserved.

The Role of the External Oblique Abdominals in Meralgia Paresthetica (Lateral Femoral Cutaneous Nerve Entrapment)

Richard M. Burger, D.C., C.C.T.P., DIBAK

Abstract

It has been found by this author that in addition to the usual approach of correcting the weak muscles and trigger point activity of the hip for meralgia paresthetica, that primary testing of the anterior oblique abdominals and appropriate correction has been effective in treatment for this syndrome and reduction of recurrence.

Key Indexing Terms

Meralgia Paresthetica, Lateral Femoral Nerve Entrapment, Hip Pain, Thigh Pain, Groin Pain, Trigger Point, May Mimic Femoral Acetabular Labral Tear On Orthopedic Testing, External Oblique Abdominals, Neurolymphatic Reflex Stimulation

Introduction

Meralgia paresthetica is a syndrome causing pain and/or paresthesia in the anterolateral thigh which can vary in intensity and distribution and in this author's experience, may mimic a torn acetabular labrum in presentation and orthopedic testing. This syndrome is usually caused by entrapment or trauma to the lateral femoral cutaneous nerve as it exits the pelvis.

The lateral femoral cutaneous nerve arises from the dorsal portion of the L2 and L3 spinal nerves and travels circumferentially through the pelvis to emerge lateral to the psoas and beneath the inguinal ligament next to the anterior superior iliac spine, although it may also pierce the inguinal ligament or exit above the ligament through the fascia of the external oblique abdominal muscle. The nerve then typically passes superficial to the proximal sartorius muscle, but may pierce that muscle. It then divides into anterior and posterior branches which continue deep to the tensor fascia lata and then emerge through the fascia to become subcutaneous.

According to Travell, who gives an excellent review of the topic, the symptoms can be relieved by injection of trigger points in the proximal sartorius, iliacus and quadriceps femoris muscles.[1] Based on the work of Teng, Travell states that, “No relief was obtained when he injected abdominal wall muscles above the ligament, or muscles distal to its lateral portion. He attributed this relief to reduction of tension in the muscles which reduced fascial tension on the inguinal ligament.” She states later that, based on numerous dissection and operative studies, “These data strongly suggest that subclinical

meralgia paresthetica is far mor common than has been realized and that many clinical cases probably are overlooked."[2] The observation that injection of the abdominal muscles provided no relief suggests that the problem may be lack of tone of these muscles, rather than hypertonicity as would be associated with trigger point activity.

Discussion

It has been this authors experience that meralgia paresthetica responds well to the applied kinesiology approach of relieving the various trigger points, reactive muscles and restoring the muscle balance and facilitation of the muscles of the hip, including the iliacus, psoas, adductors, sartorius, rectus femoris, vastus medialis, tensor fascia lata, gluteus maximus, gluteus medius and piriformis. However it has been found that even with all of the appropriate treatment to these muscles, in numerous cases, symptoms would recur and the various previously treated muscle weaknesses could recur as well.

It was found that on testing the external oblique abdominal muscle on the symptomatic side in these recurrent cases, that it would invariably test weak. This weakness presumeably allowed the inguinal ligament to sag and create the compression responsible for the entrapment of the lateral femoral cutaneous nerve. Challenge of the inguinal ligament adjacent to the anterior, superior, iliac spine in a caudal direction results in the weakness of a previously strong indicator muscle when this condition is present.

Treatment consisted of deep and prolonged stimulation of the neurolymphatic reflex for the abdominal muscles on the inner thigh of the symptomatic side, although other treatment factors should be considered, eg. neurovascular reflexes, acupuncture meridians, etc. In some cases it has been necessary to instruct the patient to perform the neurolymphatic treatment on their own any time they began to experience the symptoms of meralgia paresthetica. Since that initial discovery, it has been this author's routine to check the oblique abdominal muscles first and treat accordingly, with good results symptomatically and minimal recurrence.

In closing, I would highly recommend that every applied kinesiologist have Dr. Janet Travell's Myofascial Pain and Dysfunction Trigger Point Manuals for both upper and lower extremities in their libraries.

References

1. Travell, J.; Simons, D. Myofascial Pain and Dysfunction, The Trigger Point Manual, Volume 2, The Lower Extremeties. Williams & Wilkins; 1992. p. 230.

2. Travell, J.; Simons, D. Myofascial Pain and Dysfunction, The Trigger Point Manual, Volume 2, The Lower Extremeties. Williams & Wilkins; 1992. p. 231.

© 2019 All rights reserved.

Secrets of the Sandman – AK and Sleep Factors

Tyran Gregory Mincey, D.C., DIBAK

Abstract

The objective is to share information about factors that relate to sleep disruption and potential corrections that can be applied by a clinician who understands applied kinesiology principles and techniques. Sleep problems elicit the use of top selling drugs and supplements. Sleep deprivation causes health and safety issues across all spans and ages 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 assist in improving the quality of sleep or decrease the incidence of some types of sleep problems when applied.

Key Indexing Terms
Sleep, Stress, Snoring, Chiropractic, Applied Kinesiology, Hypothalamus, Pineal Gland, Melatonin, Cortisol, Circadian Rhythm, Insulin, Growth Hormone, Herbs, Manual Muscle Test- MMT, Nutrition, Physiological Phenomena, Functional Medicine, Obstructive Sleep Apnea (OSA), Postprandial. Proprioceptors. Muscle Inhibition

Introduction
Sleep is crucial to heal and grow. A trend in sleep problems is currently a public epidemic. Poor sleep translates into poor function, cognition, alertness and diminished health along many hormonal and functional paths. In themselves, these are all public hazards as they may contribute to injury and accidents, notwithstanding ill health.

"The most common sleep disorders include insomnia, sleep apnea, narcolepsy, restless legs syndrome (RLS), and circadian rhythm sleep disorders often triggered by shift work or jet lag" (Help guide.).

According to the CDC, in a recently conducted survey, nearly 50 million people reported problems concentrating during the day related to sleep problems. 24 million indicated that lack of sleep interfered with driving. 18 million reported that sleep deficiency interfered with job performance. That's 23.2%, 11.3%, 8.6 % of all United States Citizens respectively.

Jargon relating to Sleep.
Psuedoephedra is 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 believed to de-stress the body and assist by decreasing stress levels and hence improve muscle testing outcomes, CPAP is “continuous positive airway pressure,” a therapy aimed at opening the airways to the lungs from the oral cavity. Insomnia is inability to sleep, narcolepsy is a condition characterized by frequent and uncontrollable periods of deep sleep, restless legs syndrome (RLS) a condition characterized by frequent and uncontrollable periods of deep sleep. Circadian rhythm is any biological process that displays an endogenous, entrain-able oscillation of about 24 hours.

Sleep factors

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

Factor 1 -Insulin dominant snoring patterns

Last year I wrote of the role that insulin played in snoring; 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 insulin resistance, and sleep imbalances. 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.(Svenia) 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 and lead to snoring which may disrupt sleep.“ (Doehner)

Factor 2- Electromagnetic sensitivity and wakefulness

In 1985 Becker wrote of experiments and observations of the impact that electromagnetic fields could have on the human body based on more than 4 decades of research -1975. Today we see direct evidence that he was correct. Just consider the pineal gland for example.

The pineal gland manufactures melatonin. It harmonizes with and is deactivated by electromagnetic fields in the visible light spectrum. Its nature and function are stimulated by darkness or the absence of visible light fields. This stimulation of darkness and lack of

certain wave forms allows it to produce melatonin. The production of melatonin is dependent and limited by the presence of serotonin and the presence of visible EMF which is naturally absent from darkness,. The pineal is "on call" from melatonin stimulating hormone (MSH) which is made in the pituitary.

Below is a summary of how melatonin is created in the human body:
Tryptophan (from diet) → serotonin (also from gut microbiota) + NO EMF (via retina of eye via hypothalmus) + MSH → melatonin.

Melatonin induces fatigue and sleep, impacts blood pressure, intestinal function, endocrine function, menstrual function, ovarian rhythms, immunity and activates Anti-oxidants- making it important for anti-aging.

Electronic devices that emit ELF's (extremely low frequencies) seem to confuse the pineal gland. The frequencies of visible light cause a decrease in melatonin production as if it were day. The ELF's seem to have the same effect as a harmonic of visible light frequencies - although artificial and not identical. The sleep loss would also create an increase on the adrenal stress axis and cause an increase in insulin, cortisol levels and result in incomplete sleep and then dehydration.

Several clinical opportunities arise based this knowledge.

Using darkness we can challenge a previous intact muscle to see what effects darkness has. In particular we use the rectus group, piriformis, and immune system related muscles to assess the impact lack of melatonin has on their function. (Walther)

We can challenge gut related nutrients, such as probiotics, L glutamine and see what impact they have on the rectus group in the darkness.

We can use Ultra high frequency (UHF) and extremely low frequency (ELF) devices such as microwaves and cell phones to challenge darkness and determine if they indeed they are causing an inhibition in melatonin production. A challenge with lights off only would not completely address melatonin production because both the visible spectrum and man-made harmonics inhibit melatonin production.

We can challenge with a melatonin supplement. Supplementing with melatonin may contribute to more problems than are solved such as pineal atrophy and dependence.

Factor 3 – Adrenal dysfunction – can't sleep, and sleep-wake-stay wake patterns
Adrenal symptoms come "in many different flavors." Sleep imbalances are a large subject and just one of those flavors. A contemporary and common finding is that of elevated cortisol. Cortisol elevation leaves one wakeful at varying times but often at 1-3AM in the morning as it pushes insulin release and gluconeogenesis, stressing the liver. Hence, in some patients we see problems during the liver horary period.

Epinephrine, another adrenal finding, on the other hand stimulates mental alertness. This

would be found in the sympathetic dominant individual who cannot get to sleep. This patient will often find solace in and test positive for nutrients that slow sympathetic tone down and increase parasympathetic tone. They include valerian, tryptophan, calcium/magnesium duo, and even paradoxically adrenal glandulars, and tonics. Sleep loss creates an increased tone on the adrenal stress axis and causes an increase in insulin secretion.

The time when these nutrients are administered is perhaps more important than the amount of nutrient. These must be given at bedtime with the caveat that they may make sleep worse. In most cases however, they act paradoxically by nourishing an over-stressed, taxed, sympathetic dominant physiology. Nutrients given in this manner somehow allow the body to reflex into the parasympathetic state where it should be, and the patient falls asleep.

Factor 4 – thyroid dysfunction

Aberrant thyroid activity may interfere with a good quality of sleep. Hyperthyroid activity can be the cause of sleep problems. If that is true than a corollary is that a functional hypothyroid imbalance can cause sleep disturbances - or any thyroid imbalance for that matter. This is typically found in our modern society in the "javaphil" - people who consume lots of caffeine for years. They deplete their stores of selenium. Selenium seems to "check" the thyroid and control hyper-function, whereas iodine seems to speed it up.

Further thyroid imbalance may be observed based on the "5-element" law's brother-sister effect. Here it is attributed to adrenal imbalances. Schmidt in previous papers has spoken about a teeter-totter effect and the need to address thyroid and then the adrenal sub-function in order to help patients reach optimal health (Schmidt).

Factor 5 – 24 hour clock imbalances

Dr. Goodheart in his paper, "Chinese lessons for modern chiropractic," stated "...the chiropractic concept of interference should not be limited to only the Intervertebral foramen, but should include, in fact any area and the delimitation only serves to delimit your results if you do not think of the patient as a whole man..." [sic]

With this admonishment from the 1970s comes the idea that when there are sleep problems, the problem may not always be where the problem is from a "part management" perspective. If one cannot sleep, this does not mean that the brain is automatically the reason why, nor the time period we are in (Walther). Synergy comes into play here. Application of the "24-hour clock" can be helpful. "Then and now technique" would be helpful with a supplement taken to support the affected organ just prior to retiring - liver and large intestine are most common. When listening to a patient explain their sleep imbalance a clinician must note the time of the sleep disruption. Inevitably, it will be "can't go to sleep" – adrenal or relative thyroid - 9-11pm; "can't stay asleep" - cortisol and/or liver(1-3am) and sometimes lung (3-5am) and large Intest-ine (5-7am).

Using “then and now” we can TL the horary point for the time we are in or “now,” then when can TL the time that the patient awakes - “then.” If positive we then find the nutrient that negates that weakness and we instruct the patient to take the supplement just before bedtime daily with a caveat that it may promote wakefulness and if so, that they should change the time of dosing to dinner, if eaten before 7pm. Otherwise it should be taken at lunch.

Factor 6 – elevated histamine
Histamine over-activity is a less known cause of sleep issues. It is a CNS stimulant and promotes wakefulness. Antihistamine medication makes people drowsy as a side effect.

Schmidt as a step in the QA protocol brilliantly insists on using a histamine challenge to uncover histamine imbalances and to find corrective nutrition. Histamine elevations will often occur for many gut related problems including hypersensitivities from consuming cooked and the same food repeatedly. This results in immunoglobulin based immune reactions which can take several days to show. Therefore challenge should be performed on routine foods that are consumed by a patient who is unable to sleep. Then antihistamine based nutrients can be administered such bioflavonoids, vitamin c, and zinc.

Also, the enzyme that metabolizes histamine may the culprit. Often overproduction of the mediator is blamed, but insufficient elimination may be the true cause. This could be related to liver dysfunction or insufficient Diamine Oxidase (DAO). Diamine Oxidase inactivates histamine and may be deficient. The following foods and supplements such as fish oil may be helpful in this case.

Healthy saturated fats:
Grass-fed butter
Avocado
Fatty fresh fish
Pasture-raised chicken eggs
(unless it’s a sensitivity)
Phosphorus
Calcium
Zinc
Magnesium
Vitamin B12
Iron
Epinephrine

Factor 7 – Omega 3 deficiency
Higher levels of omega-3 fatty acids are associated with better sleep. This is postulated to be the result of lowered inflammatory states and decreased stimulation of cytokines. There would be a resultant decrease in action of the mediators of inflammation allowing for parasympathetic dominance – a requirement for sleep to take place. A muscle test challenge may be performed as per Schmidt in his QA protocol and the use of blood spot fatty acid test are helpful in clarifying the status of the patient.

Discussion

The current management of sleep related disorders seems to not include “actual living.” Actual living includes existing in our advanced and highly technological society. This

society at this time places emphasis on quantity while sacrificing quality; on having something done for the body, rather than having the body do it.

We are also starting to see the fruits of poor consequential analysis of our inventions and practices. It is manifesting as a disturbance in sleep and is a sure way to degrade a persons health rapidly.

A clinician will do well to listen to a patient who has complaints about sleep and moves these to the top of the list of issues to address. Lack of sleep will camouflage or sabotage the truth when it comes to patient examination and management. It can cause emotional imbalances, liver issues, headaches backaches, adrenal dysfunction, musculoskeletal problems, abnormal heart beat, hallucinations and the list continues. In wartime sleep deprivation is a valid military intelligence tool.

The protocol in summary is as follows:

1. The patient is "grounded" or large magnetic is used.
2. Lights are turned off
3. If A strong muscle not goes weak.
4. The following challenges are made in the dark;
    1. Omega 3
    2. Cortisol – homeopath vials for challenges
    3. epinephrine homeopathic is challenged
    4. selenium or iodine is challenged
    5. UHF/ ELF from electronics will make a change in muscle function.

Supplement as is found on the challenges above and follow-up with patient in one week. Remove any UHF.ELF devices from the area with at least 10 ft of clearance.

Conclusion

The sleep problems can be addressed using muscle testing outcomes. The knowledge that we have about functional health and muscle testing can be used to help our patients get a goodnight sleep and thus facilitate life and longevity. Nutrients that help as outlined above should be administered and certain lifestyle changes already described should be implemented.

Acknowledgments are made to Harmonic Energetics, LLC, Integrated Healthcare of Montclair LLC, and The ICAK.

© 2019 All rights reserved.

Supraspinatus Catecholamine Testing

Andrew L. Rostenberg, D.C., DIBAK

Abstract

This paper presents a novel clinical procedure utilizing the supraspinatus manual muscle test to investigate catecholamine levels inside the brain. Catecholamine species including dopamine, adrenalin and noradrenalin have profound influence on mood, energy levels, sleep, learning and cognition. This paper discusses how to use the supraspinatus muscle as an indicator allowing the clinician to quickly ascertain whether a patient has an excess or deficiency of catecholamine species inside their central nervous system. Nutritional strategies to support catecholamine imbalances are also discussed.

Key Indexing Terms
Dopamine, Epinephrine, Norepinephrine, Catecholamines, Serotonin, Melatonin, Anxiety, Depression, Methylation, Supraspinatus

Introduction

Catecholamines have a profound impact on our mental state, energy, immune function, and stress tolerance. Patients are walking into our applied kinesiology (AK) offices every day with symptoms related to imbalanced catecholamine levels. Common everyday problems such as depression, anxiety, sleep, mood, focus, brain function and even learning are intricately related to the levels of dopamine and catecholamines in the brain. While it has been known for many decades that the catecholamines and monoamine neurotransmitters influence brain and consciousness, it remains difficult to clinically determine how to support these systems. Through the application of manual muscle testing this author has discovered a simple, effective and reliable testing process for balancing catecholamine levels inside the brain.

Discussion

My interest in this subject came about from my years-long study of the methylation cycle and how it influences levels of neurotransmitters inside the brain. Many patients who are treated for methylation-related problems are often given supra-physiologic doses of folate, B12, and other methyl donor vitamins. Often times doctors perform a MTHFR gene mutation test and then recommend to patients anywhere from 1, 5, or even 15 mg per day of 5-methyltetrahydrofolate (5-MTHF) based on the presence of MTHFR single nucleotide polymorphisms (SNPs). This high-dose approach has led many patients to experience severe and profound negative reactions to these potent methyl-donor vitamins. In a quest to better understand why certain patients experience this paradoxical reaction, I turned to the published research which provided a possible answer.

It appears that one main reason certain people cannot tolerate methyl-B vitamins is that they already have too many catecholamines in their nervous system. The methylated form of folate (5-MTHF) acts as a cofactor for production of dopamine, noradrenalin and adrenalin by increasing levels of BH4.[1] And BH4 is considered to be the rate-limiting enzymatic reaction for the production of catecholamines and serotonin.[2] This means increasing levels of methylated B vitamins, esp. folate, will increase BH4 levels which in turn could increase catecholamine production.

These catecholamine molecules are potent stimulants, and as such, the brain seeks to have a balance of these molecules and to avoid states of deficiency or excess. The symptoms most often described by those who are having a negative reaction to methylation support include: anxiety, insomnia, worry, panic, headaches, chronic pain, tachycardia, etc. These symptoms when viewed from the concept of catecholamine dominance shed light on the fact that in certain patients, they will over-produce dopamine and catecholamines when given B-vitamins. Eventually, after seeing this phenomenon in certain patients I asked the question: Do these individuals who react negatively to methylated B-vitamins do so because they have too much dopamine? Based upon the latest research and clinical experience the answer appears to be yes.

In order to investigate this idea further, a method testing is needed to determine if patients in fact are experiencing symptoms as a side effect of too much dopamine. While there are testing methods available which are capable of measuring urine, saliva or blood levels of catecholamines, there are limitations to these testing methods. Each of these functional lab tests are limited because it cannot delineate what percentage of catecholamines come from the peripheral, central or enteric nervous systems. To get around this problem, I discovered a method for testing the brain levels of dopamine directly using AK tools. By using a simple MMT and changing the amount of light hitting the patient's face, the AK practitioner can quickly and accurately determine if the patient is struggling with too few or too many catecholamines.

Sunlight and Catecholamines

The relationship to sunlight exposure and Vitamin D levels is well-known, but fewer are aware that sunlight also plays a big role in neurotransmitter production. Most clinicians are aware that lack of sunlight may cause a lack of serotonin, and this may cause patients to experience SAD.[3] However it is not just serotonin that is affected when there is a lack of sunlight. Dopamine levels are also greatly impacted by the amount of sunlight that hits our eyes.

Research shows that dopamine levels in the eye, and likely the dopamine-containing areas of the midbrain as well, are sensitive to light. That is, light striking the eye up-regulates the production of tyrosine hydroxylase which leads to increased levels of dopamine and catecholamines inside the eyes and the brain.[4,5,6,7,8] In summary, more light equals more dopamine and more serotonin. However, due to the outsized influence that dopamine has on our cognition, memory, motor function, attention and learning capability, it is the neurotransmitter dopamine that needs our full attention.

Catecholamines and Brain Function

While investigating reasons why patients overreact to B-vitamin supplements, a key piece of information was uncovered. Researchers have been looking at brain function and mental health for decades and they have developed what they describe as the "Inverted U-Curve" of dopamine function. Based off of much clinical research and observation, scientists have realized that dopamine and catecholamine systems operate on a spectrum where either too little or too much dopamine impairs brain function. Said another way, there is an optimum level of dopamine and an optimum level of brain function – failure to balance catecholamines will result in failure of the brain to function at peak performance.

The brain is a lot like Goldilocks in "The Three Bears" story: it wants just the right amount of stress, not too little, and not too much. In other words, the brain functions on a bell curve of activity, with dysfunction on either end and optimum function in the middle. Figure 1.1 illustrates this point in detail.

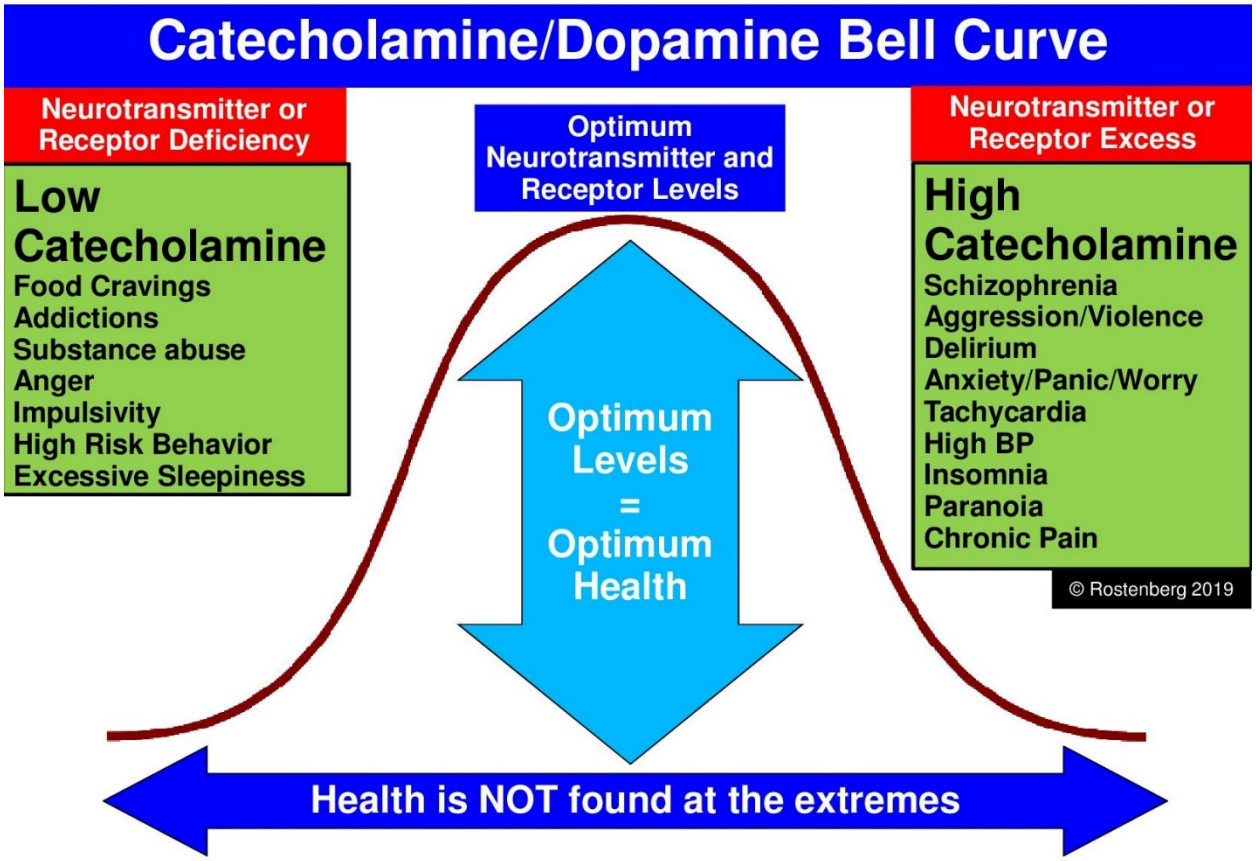


Figure 1.1 – Symptoms of low and high catecholamines

Basically, the "Catecholamine Bell Curve" implies that our dopamine problems in the brain come in two distinct flavors: Low Dopamine/Catecholamine and High Dopamine/Catecholamine. The left side of the bell curve, where dopamine is low, will

cause depression of the frontal lobe, slowdown of neuronal circuits, and malfunctions of the neocortex as fails to fire fast enough. Symptoms of low dopamine/catecholamine include the following: cravings, substance abuse, addictions, anger, impulsivity, high risk behavior, poor memory and brain fog. In contrast, the right side of the bell curve, where there is excess dopamine/catecholamine, causes overstimulation of the frontal lobe, neuronal circuit fatigue from overstimulation, and malfunctions of the neocortex as it fires too fast. Symptoms of too much dopamine/catecholamine include the following: anxiety, chronic pain, worry, delirium, tachycardia, high blood pressure, insomnia, paranoia/mania, schizophrenia/psychosis, poor memory and brain fog. It is my clinical opinion that most individuals who experience "over-methylation" symptoms are actually feeling the side effects of excess catecholamines.

When the level of dopamine in the frontal lobe is balanced and optimized, the brain works at its best. In contrast, if dopamine levels in the frontal lobe fall too low, we become depressed, and if they increase too much, we become anxious and worried. Although most symptoms of high catecholamines are different from the symptoms of low catecholamines, we will experience memory loss and brain fog *at both ends of the catecholamine bell curve*. This might seem confusing at first, but remember that whenever the dopamine levels fall too far or rise too high, the brain function declines. This brain dopamine teeter-totter is the biochemical rationale for using the supraspinatus catecholamine test described below.

Related Previous Work in AK

It is important to recognize that applied kinesiologists have been investigating brain chemistry over the decades since Dr. George Goodheart first presenting his original AK findings. The fact that light can alter muscle testing has been acknowledged and integrated into the AK toolkit as well. In his book *You'll Be Better* Dr. Goodheart describes a clinical situation where a patient's sartorius muscle was impacted by the lights going on and off inside the treatment room.[9] Dr. Goodheart explained that upon further examination he discovered that the lights on/off effect was related to the patient's pineal gland function. While he had fully treated the previously weak muscle, he was surprised when the lights in the room went out it and all of the correction was immediately lost and the previously strong muscle tested weak. He soon discovered that only pineal substance was effective in blocking this weakness.

Further investigation revealed that the pineal-related light reaction also requires a unique non-respiratory cranial adjustment to help improve pineal gland function. These discoveries by Dr. Goodheart became the foundation for the pineal testing procedure in AK. Similarly, Dr. David Leaf describes how patients who show imbalances in several endocrine muscles and/or those who have problems with their internal clock (symptoms which occur based on a day/week/month/year rhythm) should also be screened for pineal issues.[10]

In addition to testing the pineal gland, the basic AK concept of organ-muscle relationships gives us another tool for assessing brain function. Using manual muscle testing of specific muscles allows rapid and accurate assessment of the organ to which the muscle is related. To assess the brain, AK utilizes the supraspinatus muscle as a "window" into the function of that organ. While the brain is obviously more complex than a simple muscle test, the

astute AK practitioner can use biochemistry and MMT to gain a profound amount of information in a short time.

Just as with other organ-muscle relationships we can look at the functional state of the muscle as a reflection of the functional state of the related organ. Whether the muscle is hypotonic, hypertonic or normotonic gives the AK practitioner immediate information about the underlying functional state of the organ. By adding a “lights on” and “lights off” challenge to the supraspinatus MMT, we can get direct biofeedback from the brain on whether it needs to have an increased or decreased supply of dopamine. Using these two AK concepts – muscle challenge with lights on or off and the well-established organ-muscle relationships - the supraspinatus catecholamine test came to be.

Steps to Perform Before Using the Supraspinatus Catecholamine Test

Before testing the supraspinatus muscle as described below, it is important to rule out other factors that could impact the testing and interfere with the functional neurology of the patient. First, patients should be tested for and treated for switching before this procedure is used. Secondly, patients should be tested for pineal imbalances as described by Leaf and Walther in either of their respective texts. The supraspinatus catecholamine testing uses light and dark challenges similar to the pineal testing, so to avoid inaccurate results make sure the pineal gland is cleared before proceeding. Third, patients should be screened for right and left brain hemisphericity imbalances which create hypertonicity in the supraspinatus muscle and could mask problems coming from catecholamine imbalances.

Supraspinatus Catecholamine Testing

The supraspinatus catecholamine test is performed with the patient in a supine position. The first step is to test the supraspinatus in the clear to determine if either left or right muscles are weak or inhibited. If they are found weak/inhibited then they must be treated with the 5 factors of the IVF and other AK protocols to strengthen the muscle in the clear. Next, the doctor does a spindle cell challenge on both the left and right supraspinatus muscle and performs a MMT. The doctor is looking for normal inhibition for one muscle contraction and return of strength during the second MMT. This condition of being strong in the clear, but able to be weakened correctly by the spindle cell challenge and then return to strength is termed “normotonic” on the Figure 1.2 chart below. If the supraspinatus fails

to inhibit after the spindle cell challenge it is termed hypertonic" on Figure 1.2.

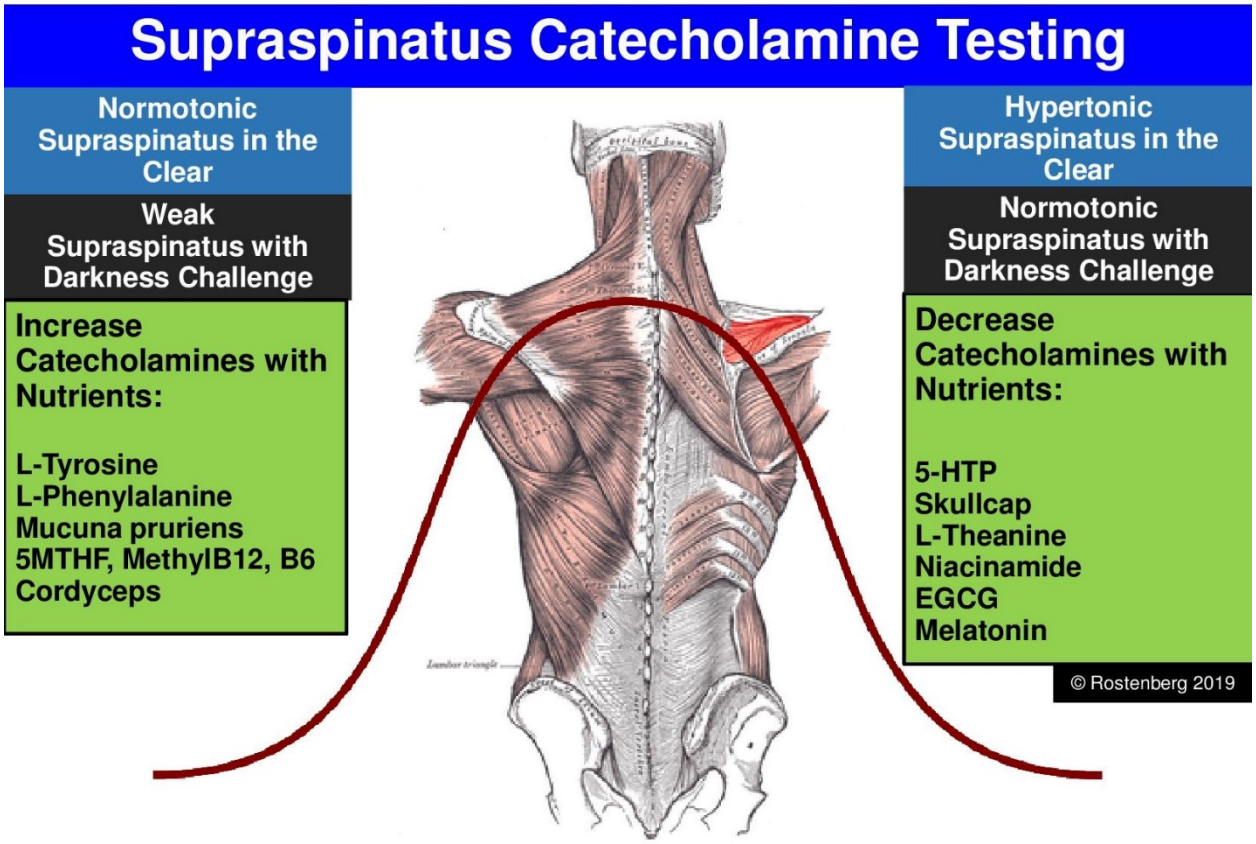


Figure 1.2 – Supraspinatus MMT can be used to assess for high and low dopamine conditions.

Challenging the spindle cells of the supraspinatus in this manner is the first step of the procedure. The second step is to increase the challenge by using darkness and retesting the supraspinatus muscle with the same spindle cell challenge. Either cover the patient's face with a sheet or turn off the lights and darken the treatment room. It is important for very little to no light reaching the patient's face so the sheet over face method is preferred.

There will be three possible outcomes of testing the patient with the light/dark challenge on this second step:

1. First, a normotonic muscle with lights on will also test normotonic with lights off. This is the ideal result as the MMTs prove that lights on or off make no difference, the patient has the balanced amount of dopamine.
2. Second possibility is that a normotonic muscle weakens with lights off indicating a lack of dopamine. As light is removed from the face/eyes the synthesis of dopamine drops. If the patient already has low dopamine and then it is lowered further, then

the supraspinatus MMT will now be hypotonic/weak in the clear. These patients will need support to raise dopamine.

3. Third and final possibility is the patient with a hypertonic supraspinatus muscle in the clear (lights on) becomes normotonic and inhibits normally when lights are off. This indicates that the dopamine-lowering effect of blocking light from the face/eyes has lowered the patient's dopamine level enough for the supraspinatus to function normally. Patients in this third category need supplementation and support to lower dopamine.

Once this second step of testing is completed and the patient is categorized into one of the three possible outcomes, the next step is to challenge with oral nutrition.

Nutritional Support for High and Low Catecholamines

If the patient is found to be low in dopamine, with a normotonic supraspinatus MMT in the clear and a weak/hypotonic supraspinatus MMT with face covered, then challenge the patient with face still covered. This is necessary because it is only through challenge with lights off that the problem was originally found. Thus, by challenging with dopamine-raising nutrients with the face covered the patient can be tested for improvement in their previously weak/hypotonic supraspinatus muscle.

For example, the doctor finds weak/hypotonic supraspinatus bilaterally on MMT with the face covered, but finds that oral testing of L-tyrosine strengthens both supraspinatus muscles with the face still covered. This indicates that the L-tyrosine, a substrate for dopamine and catecholamine production, will help raise dopamine into a more optimum range and improve brain function. This improved brain function can be easily measured by the improvement in supraspinatus function. The once weak/hypotonic supraspinatus muscles will now test normotonic with face covered – spindle cell challenge will weaken the muscle for only one contraction. With the L-tyrosine on the tongue there will be no difference in muscle function whether face is uncovered or covered. This process can be repeated with all of the nutrients recommended for low dopamine: L-tyrosine, L-phenylalanine, macuna puriences, 5MTHF, methyl B12, and B6.

If the patient is found to have high catecholamines, the nutrient testing procedure differs only slightly from that of the low catecholamine patient. When a patient has hypertonic supraspinatus MMT in the clear and then shows normotonic MMT with face covered, the doctor should perform the oral nutrient challenge with the face uncovered. The rationale for this change is again to test the supraspinatus muscles in the phase of the challenge where they exhibit dysfunction. With the face uncovered the doctor can monitor the effect of the challenge directly and observe the muscle's return to a normotonic state.

For example, the doctor finds a bilaterally hypertonic supraspinatus MMT in the clear but testing with face covered reveals a normotonic, normally functioning supraspinatus bilaterally. The doctor then removes the face covering to place both supraspinatus muscles into the hypertonic, high-dopamine state. From here the clinician challenges the patient with nutrients like L-theanine, melatonin or niacinamide and retests the supraspinatus muscles. If the nutrient will assist the patient in lowering dopamine, the supraspinatus muscles will now test like a normally functioning muscle. This process can be repeated

with all of the nutrients recommended for high dopamine individuals: niacinamide, 5-HTP, skullcap, green tea extract, melatonin, L-theanine.

Conclusion

Patients are presenting in AK practices every day with symptoms of low and high catecholamines. While brain function is immensely complex, applied kinesiologists can use the procedure above to categorize patients based on whether they have low or high catecholamines. This provides a simple, effective, and repeatable method for both initiating treatment as well as for monitoring the efficacy of the nutrition and biochemical support of the patient. This is an invaluable tool for the patients in my office and I encourage all AK practitioners to incorporate this tool in their office for improved results.

References

1. Alkaitis, Matthew S., and Mark J. Crabtree. "Recoupling the cardiac nitric oxide synthases: tetrahydrobiopterin synthesis and recycling." *Current heart failure reports* 9.3 (2012): 200-210.

2. Stahl, Stephen M. "Brainstorms: L-Methylfolate: A Vitamin for Your Monoamines." *The Journal of clinical psychiatry* 69.9 (2008): 1352-1353.

3. Lambert GW, Reid C, Kaye D, Jennings GL, Esler MD. Effect of sunlight and season on serotonin turnover in the brain. *The Lancet*. 2002 Dec 7;360(9348):1840-2.

4. Arns M, Swanson JM, Arnold LE. ADHD prevalence: Altitude or sunlight? Better understanding the interrelations of dopamine and the circadian system. *Journal of attention disorders*. 2018 Jan;22(2):163-6.

5. Janowski M, Bulte JW, Handa JT, Rini D, Walczak P. Concise review: using stem cells to prevent the progression of myopia—a concept. *Stem Cells*. 2015 Jul 1;33(7):2104-13.

6. Cohen Y, Peleg E, Belkin M, Polat U, Solomon AS. Ambient illuminance, retinal dopamine release and refractive development in chicks. *Experimental eye research*. 2012 Oct 1;103:33-40.

7. Brainard GC, Morgan WW. Light-induced stimulation of retinal dopamine: a dose-response relationship. *Brain research*. 1987 Oct 20;424(1):199-203.

8. Iuvone PM, Galli CL, Garrison-Gund CK, Neff NH. Light stimulates tyrosine hydroxylase activity and dopamine synthesis in retinal amacrine neurons. *Science*. 1978 Nov 24;202(4370):901-2.

9. Goodheart, G. You'll Be Better: The Story of Applied Kinesiology, 1st ed.

Privately Published, 2000. Chapter 10, page 3.

10. Leaf, D. *Applied Kinesiology Flowchart Manual*, 3rd ed. Mission, KS: Triad of Health Publishing, 2005, p. 459.

© 2019 All rights reserved.

A History of Professional Applied Kinesiology Around the World

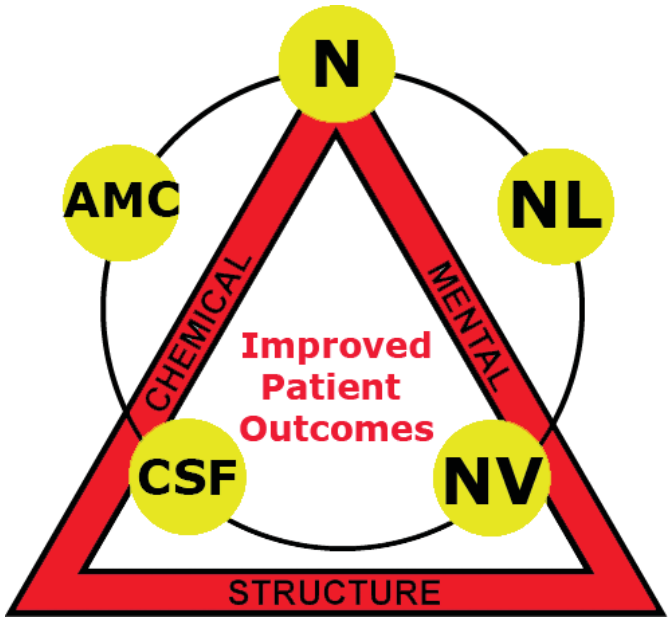
By

Scott Cuthbert, **DC** and **Clive Lindley-Jones DO DIBAK**

With contributions from:

- Geert Drenth, DO, DIBAK
- Hans Garten, MD, DO, DICAK, DACNB
- Antonio Gil DC, CCSP
- Seung-Won Lee, MD, PhD, DC, DACNB, DIBAK, FACFN
- Donald McDowall, DC, DIBAK
- Rudolf Meierhöfer, DDS, DIBAK
- Richard Meldener DC, DIBAK
- Laurent Picard DC, DIBAK
- Eric Pierotti DC, DIBAK
- Joseph Shafer DC, DIBAK
- Olegs Suhorukovs MD, DIBAK

Abstract: The history of the growth of Professional Applied Kinesiology Around the World and throughout the healing professions has not been comprehensively covered, with contributions from the various leaders from dozens of countries who have stood up to teach, defend and expose the healing professions to our methods. Thirteen contributing authors tell the story of AK's and the ICAK's growth on each of the continents of the world, presenting the detailed, colorful story of the permeation of AK methods and philosophy into the daily practice of hundreds of thousands and potentially millions of clinicians. Illustrated throughout with historical pictures covering over 5 decades, this history the first comprehensive History of AK Around the World ever written.



History of Professional Applied Kinesiology Around the World

PROLOGUE

It being our purpose to write about the history of a great movement in modern health care in the modern world, and of the principal players and movements and the multitude of actions that comprise this story affords us so large a field that we are to blame if we should not by way of apology forewarn the reader that we have chosen rather to epitomize the most celebrated and documented parts of this story, rather to insist on every particular circumstance in this history.

The growth and spread of Applied Kinesiology around the world has been remarkable in both the professional and public arenas. The clinical methods of Applied Kinesiology are a metaphor that embraces each of the directions complementary and alternative medicine has taken in the last century. It has been calculated for instance that approximately 1 million people now use the MMT worldwide as part of their diagnostic methods, [1] and that half of the chiropractors in the United States and Australia use AK methods.[2-3] Chiropractors, osteopaths, manipulative and functional medical doctors, nutritionists, acupuncturists, energy psychologists and massage therapists have embraced Applied Kinesiology over the past half-century.

Origins

If we look back into the writings of the founder of chiropractic, Dr. DD Palmer, we find evidence that he foresaw the Applied Kinesiology manual muscle test as a means to diagnose the "tone" of the central and peripheral nervous system.[4]

Dr. George J. Goodheart, Jr., the founder of AK has said that he was indebted to the philosophy of chiropractic espoused by DD Palmer for the guiding thought which produced Applied Kinesiology methodologies. In this modest attitude we find

a clue to the character of the man who devoted almost seventy years of his life to the study and practical research necessary to evolve this clinical art and science. Within Dr. Goodheart's genius the marriage of the different primary alternative systems of modern health care were consummated on the altar of the manual muscle test, which has proven to display the diverse physiological elements at play within every patient and condition. Goodheart possessed the extra-ordinary capability of raising to clinical awareness and repeatable, demonstrable testing the labyrinthine ways in which the nervous system functions in the lives of patients.

The challenge of all biomedical interventions is to first diagnose the patient effectively. Until the invention of radiography at the end of the nineteenth century, and later the wonders of microscopic cameras, magnetic resonance imaging, and the whole panoply of twenty-first century scientific laboratory investigation, clinicians were invariably left to draw inferences from their skills in questioning, acute observation, palpation and rudimentary, largely in-office, laboratory tests.

The chiropractic and osteopathic physicians were the first to see the advantages that radiographs could afford in seeing into the underlying structures of their patients, discovering what may have been pathophysiological beneath the "skinvelope". So much so that by the early part of the twentieth century the use of X-rays was ubiquitous, particularly in the chiropractic profession.

The promise of x-ray diagnosis has not proven to be the panacea its early proponents had hoped for. When we realize that 20% of younger patients and up to 60% of older patients demonstrate radiographic abnormalities without symptoms, we see how these x-ray abnormalities lead to many false positives[5] if the clinician relies on x-ray (or MRI) alone for diagnosis. Furthermore, the overuse of this tool can be seen with hindsight. The hazards of ionizing radiation are being more systematically taught to students and clinicians alike as well as pressure being brought to reduce the risks inherent in such methods.

The American Chiropractic Association's new Choosing Wisely® campaign states: "In the absence of red flags, do not obtain spinal imaging (X-rays) for patients with acute low-back pain during the six weeks after the onset of pain."[6] Similar guidelines are offered in the UK's National Council for Clinical Excellence (NICE: "Consider imaging in specialist settings of care (for example, a musculoskeletal interface clinic or hospital) for people with low back pain with or without sciatica only if the result is likely to change management".

This recommendation is not only on ACA's Choosing Wisely® list; a similar item is also included on the lists of seven other organizations. This includes, among others, the American College of Emergency Physicians, the North American Spine Society and the American College of Physicians. It's important to note that the ACA's Choosing Wisely® recommendation refers to imaging patients with acute low back pain, not those with chronic pain or acute pain caused by trauma sufficient to suspect pathology that may be identified by imaging, such as compression fracture.

The effectiveness of x-ray diagnosis for musculoskeletal problems that a majority of patients suffer is far less than previously hoped for, and their overuse in such common and intractable problems as neck and lower back pain is being phased out.[7]

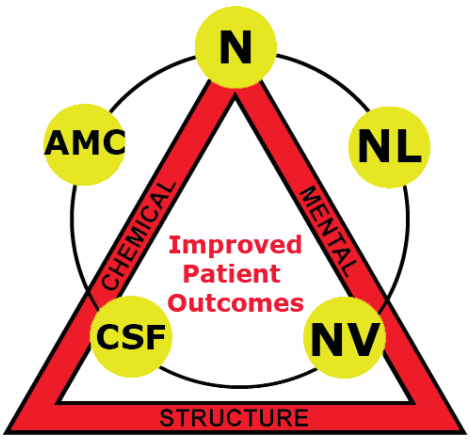
At the same time new and seemingly safer methods, such as magnetic resonance imaging, were being introduced alongside a move toward greater use of laboratory tests as a gold standard for diagnostic acumen.

Concurrent with this move away from the older bedside clinical skills, a growing body of chronic disease was making itself apparent. This demanded inquiring, open-minded clinicians from various disciplines to search for more integrative answers to help such conditions, beyond the often-disappointing fields of drugs, surgery or standard palpation based manual medical diagnosis.

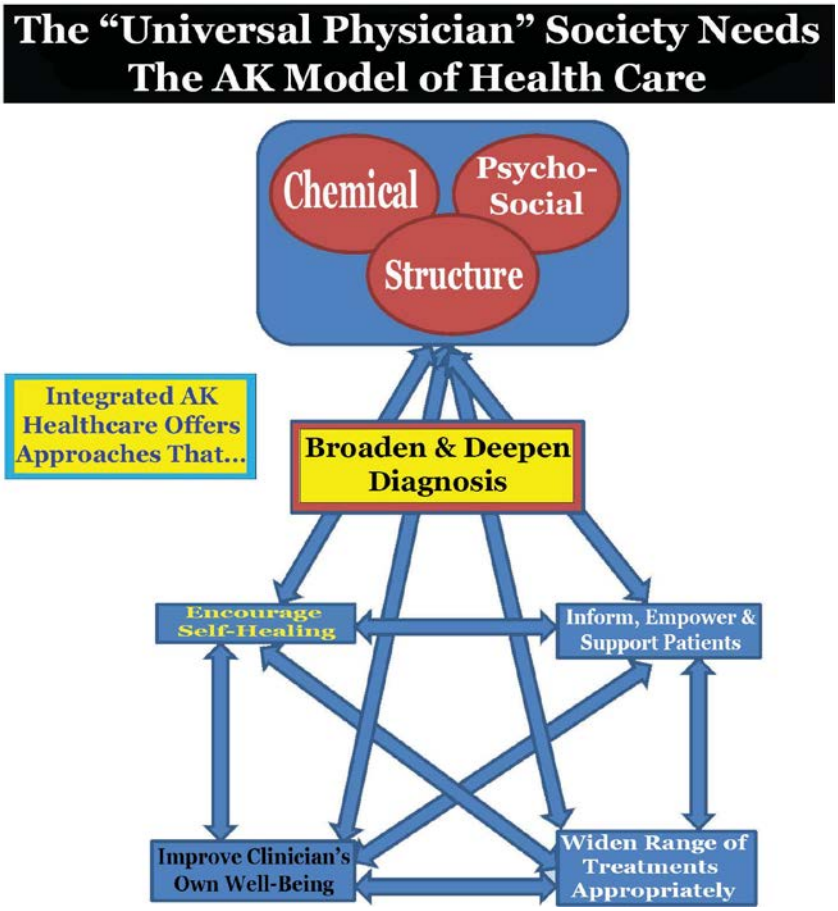
During this time traditions of non-western medicine such as Traditional Chinese, herbal and nutritional, Tibetan and Indian medicine were starting to gain greater exposure and currency in selected areas of western medical thinking and practice.

The applied kinesiologist's combination of vitalist philosophy and triad of health explanations give the doctor and the patient a rich vocabulary for those illnesses which conventional medicine is poorly equipped to address. Research indicates that for the functional illnesses that the majority of clinicians around the world treat, precise diagnosis of causative factors, assurance of recovery by measurable improvements (revealed in the manual muscle test), and physician-patient agreement about the underlying nature of their problem each hasten recovery.[8]

Perhaps one driver for this openness was a growing awareness of the interconnectedness between the structural, biochemical, and psychological-spiritual aspects to physiopathology: what is called the Triad of Health. These were especially apparent in chronic conditions, which despite huge investments in public health and infectious diseases instigated by the scientific and societal changes of the mid-twentieth century and post-war periods, were now the dominant challenge within general practice as well as the most common patient complaint and cost to health care systems.



Muscle testing is not new; it remains an important part of standard neurologic examination to determine how the nervous system controls muscles. AK has found through muscle testing that many aspects influencing health can cause muscle function to change from normal. When the proper treatment is applied for the individual patient, the muscle immediately returns to normal function.



From the beginning of health care history, doctors have observed what can be called the "body language" of health and disease. Examples of body language are postural analysis, skin color, eye movement, fingernails, posture, fat deposition location, tongue coating and size, hair quality, body movement, and other factors that the astute physician observes, feels, hears, and smells during an examination. The doctor combines this information with the findings from physical, neurologic, orthopedic, mental, laboratory, and other assessments to determine what is causing the loss of optimal health. With Applied Kinesiology a doctor has expanded body language analysis and testing that broadens the information used to make a decision about a patient's health problem. By faithfully paying attention to the subtle variables among people, much additional information can be gained. The core of AK fits nicely with already established principles of anatomy, physiology, and examination. It adds functional evaluation to examination; it does not replace standard examination procedures.

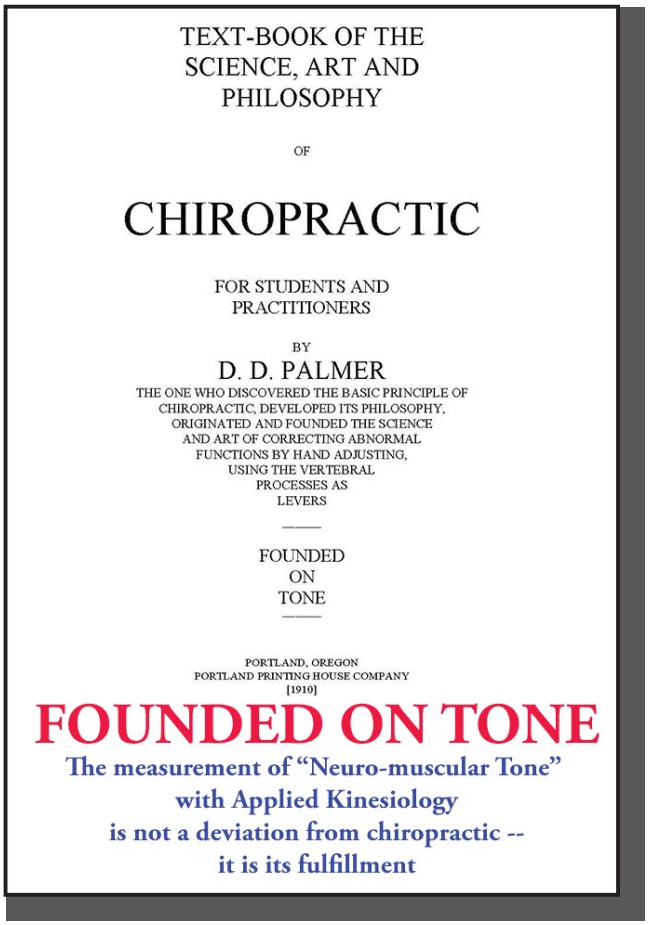
Since their inception in the ferment of late nineteen-century American frontier medicine, the manual medical schools (osteopathy and chiropractic) have depended on highly developed palpation skills to assess tissue changes on the surface through which they inferred important but subtle changes in the organism beneath the surface. It was not until the work of osteopathic researchers Burns, Denslow and Korr – in the early 20th century – that a modern, scientific research arm of manual medicine started to develop an objective model of what these palpatory messages signified.

Into this environment stepped George J. Goodheart, Jr., DC, who in 1963-64 discovered the signifying power of the motor system, through the tool of the manual muscle test (MMT), to potentially provide valuable information, making the MMT a form of functional neurology.[9]

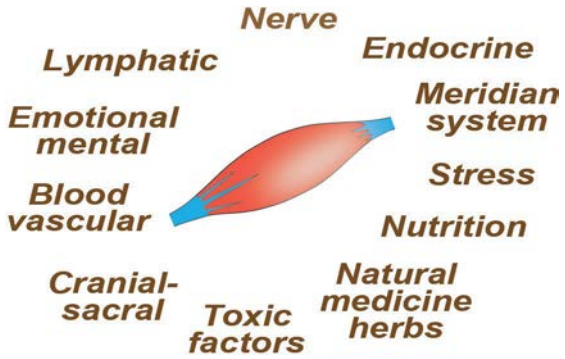
After all the concept of neuromuscular "tone" was the basis of early chiropractic science and practice, and a core principle of DD Palmer's. Muscular "tone" reflected the status of a tissue or organ's innervation: [4, 10]

> *"Life is the expression of tone. In that sentence is the basic principle of chiropractic. Tone is the normal degree of nerve tension. Tone is expressed in functions by normal elasticity, activity, strength and excitability of the various organs, as observed in a state of health. Consequently, the cause of disease is any variation in tone."*
>
> *"The amount of nerve tension determines health or disease. In health there is normal tension, known as tone, the normal activity, strength and excitability of the various organs and functions as observed in a state of health. The kind of disease depends on what nerves are too tense or too slack…"*

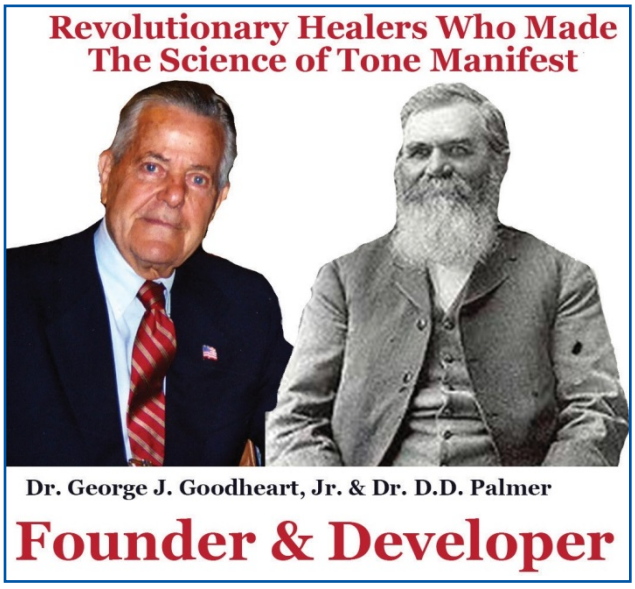
The manual muscle testing procedures developed in AK essentially sees muscle function as a transcript of the central integrative state of the anterior horn motoneurons, summing all excitatory and inhibitory inputs flowing into the nervous system.[9] In AK, the locus of dysfunction detected by the manual muscle test ultimately rests within the nervous system.



DD Palmer founded the chiropractic profession on the concept of "neuromuscular tone"



Abnormal results of the manual muscle test, whether the muscle is weak or hypertonic, may indicate abnormal involvement of any of the factors surrounding it. A change in muscle function when specific stimulation or therapy is applied to one of these elements also indicates dysfunction of the surrounding factors.



Goodheart was one of the most imaginative, open-minded and brilliant clinical researchers of his profession and age. As an integrated approach to health care is being developed throughout the healing professions (a movement led by the chiropractic and osteopathic professions), the most important cornerstones of this developing world-view are still slow to be integrated into the biomedical framework. But if our aim is to encourage better physiological and personal functioning, then a broader approach to the 'diagnosis' of what has disturbed our patients' normal state of self-organization will be necessary.

This began the long, lonely road all original thinkers travel. Goodheart first taught the new technique at a meeting of the American Chiropractic Association in 1964. As muscle testing became routine along with standard diagnostic methods, other forms of treatment were found to immediately return a weak muscle to normal function. Goodheart had found a new principle that the scientific literature had not previously dealt with: muscle function can be instantly improved by the correct form of manual treatment.

This integrative process was initiated by Dr. Goodheart when he embraced concepts that had been originally developed in the 1930s by Frank Chapman, DO, and Charles Owens, DO. [11] Goodheart found lymphatic reflexes to be associated with specific muscles and called them neurolymphatic reflexes. Chapman held that bony lesions accounted for just 20% of all ailments, while the lymphatic system held an influence on body systems that was wider and deeper, with blocked lymph flow being responsible for many phases of disease. Accordingly, Chapman and Owens proposed the existence of the neurolymphatic (NL) reflex points on the body wall that were manifestations of blocked lymph flow, often occurring as palpable, irritable nodules at reflex points, similar in palpatory quality to trigger points. Their suggestion was that these reflex points were specifically correlated with particular visceral organs. [11] Schmitt has suggested that clinical responses from NL treatment may reflect "a relative increase in parasympathetic activity, due to a resolution of the pattern of ischemia and muscular spasm associated with the irritable NL area, and a subsequent reduction of over-stimulation of sympathetic activity at the intermediolateral cell column. [9, 12] The link to muscle inhibition arose from Goodheart's observation that rotary massage of specific NLs would facilitate certain inhibited muscles with greater probability than the stimulation of other NLs or unrelated sites on the body. In

other words, sensory challenges such as treatment to an NL would impact central or peripheral neural mechanisms.

With continued investigation, specific muscles were found to be associated with other factors of health such as specific joint-muscle interactions, vascular reflexes, acupuncture meridians, organs, glands, vitamins, and minerals.

Applied Kinesiology Is Mapping New Territories Around the World

Gradually mavericks in other professions heard about Goodheart's ideas, now given the name Applied Kinesiology, and saw its usefulness to their own clinical conundrums and began to adopt all or some of these discoveries into their clinical thinking so spreading Goodheart's ideas beyond the well-trodden path of yet another purely chiropractic system. Applied Kinesiology started its long journey to its place as a multi-professional clinical tool, used by thousands of medical clinicians from around the world.

Some of the most famous doctors in the orthodox and complementary and alternative medicine (C.A.M.) world felt that the Goodheart's approach was invaluable because it focused on measurable physical factors which make up the constellation of dysfunctions affecting the person's total health picture.

The healing professions that have been individually affected by Goodheart's research work will be separated in this chapter:

1 AK Is Mapping New Territories Around the World

- a) AK Enters Europe through France
- b) ICAK-France Revives
- c) Applied Kinesiology in Italy
- d) Applied Kinesiology Expands Through Europe and Russia
- e) Applied Kinesiology in the United Kingdom
- f) Applied Kinesiology in Germany
- g) Applied Kinesiology in Benelux
- h) Applied Kinesiology in Russia
- i) Applied Kinesiology in Australia
- j) Applied Kinesiology in Japan
- k) Applied Kinesiology in South Korea
- l) Applied Kinesiology in Canada

2 AK in Chiropractic

3 AK in Osteopathy

4 AK in Functional Medicine

5 AK in Olympic and Professional Sports

6 AK in Dentistry and Nutrition

7 AK in Traditional Chinese Medicine

8 AK in Complementary and Alternative Medicine

The interest and curiosity which the Applied Kinesiology concept stirred up began to spread over the entire world. Goodheart's work drew a large following of doctors. The International College of Applied Kinesiology (ICAKUSA) was founded in 1976 to promote the research and teaching of AK. Initially the organization was in the United States with chiropractors as the majority of members. There are now chapters of the ICAK in Australia, Austria, Benelux, Brazil, the Baltic States, Canada, France, Germany, Italy, Korea, Japan, Russia, Sweden, Switzerland, United Kingdom, and the USA. The organization is multi-disciplinary; membership includes medical doctors, osteopaths, dentists, psychologists, and other health care providers who are licensed to diagnose patients. Medical practitioners using AK vary by country. In the United States it is dominated by chiropractors and in Europe by medical doctors. There are more than 3,000 medical doctors in Germany, for instance, who use AK as part of their diagnostic system.[14]

Applied Kinesiology Enters Europe Through France

Frenchman Richard Meldener graduated from Palmer College of Chiropractic in Davenport Iowa in 1972. As soon as his practice was up and running, he decided to invest his energy in organizing workshops in France with colleagues. Along with his colleague Alain Liny from Paris, they created 'The Chiropractic Team' to structure continuing education. At that time Major Bertrand DeJarnette and Sacro-Occipital Technique (a teacher of chiropractic cranial and viscerosomatic technique in the US, and a mentor to both Dr. Goodheart and his father) was expanding. So they invited the American SOT staff to Paris.

During one of the workshops a colleague, Claude Portal, who had just graduated from Palmer told them about Goodheart who had been trained in SOT and started to develop AK.

In September 1976 they decided to invite Goodheart to France and organized a three-day lecture for him at Paris Orly airport. This was the first time Goodheart lectured in Europe. The quality of this seminar was such that the Chiropractic Team decided to invite Goodheart to lecture in Paris every three months.

There was a small band of European physicians behind this including Jean-Pierre Meersseman, Richard Meldener,

and Xavier Gillet. The first 100-hour course was organized in 1982 in Interlaken, Switzerland and taught by Dr. David S. Walther. The AIKA (the *Associazione Italiana di Kinesiolgia Applicata*) started around the same time as the ICAK- Europe chapter. They allowed only chiropractors, dentists and medical doctors as members.

Richard Meldener kindly remembers many of those present: **Top row, on right side of paperboard, N°1 Jacques Hoffmann, with a moustache and without reading glasses. In 1977, he wrote a Doctor of Chiropractic thesis on muscle strength, organ irritation and spinal mobility relationship. This thesis was part requirement for graduation at the Anglo European College of Chiropractic; Bournemouth. UK. N°2, Bertrand Faucret. He has been a teaching staff member on AK at Los Angeles College of Chiropractic N°3 Jean Pierre Meersseman who, thorough his association with Silvio Berlusconi, did great work with AK for AC Milan football team in Italy. (See AK in Italy) 2nd row from right to left N°3, Jean Belaval. The world wide popular French playboy. N°4 Claude Portal from Tour, in France. He introduced Goodheart and AK to the Chiropractic Team in 1975. N°5 Alain Liny, who is holding a cranium in his left hand from Barcelona. He had been instrumental in the Chiropractic Team. N°6 Jean Francois Garrigues with a moustache from Varese Italy. He created and spread a big colored poster with AK related muscles, meridians, nerve supply, reflexes and nutrition. 3rd row from right to left N°1, Piet Martin from Belgium. He has been team teaching AK with Richard Meldener in the early days. N° 3 Daniel Nicolle from Paris. He shares his practice between Paris and the Middle East N°4 Mario Sabella, from Sydney Australia. He has been the first ICAK Diplomate in Australia N°5 Georges Goodheart. The founder of Applied Kinesiology. 4th, row and sitting from right to left N°2 Richard Meldener from Paris. The first Doctor in Europe to have obtained the ICAK Diplomate and a pioneer teacher of AK around Europe. He researched and published the first peer-reviewed article to objectify manual muscle testing and AK.**

In 1977 & 1978 David Walther & Paul White were invited to lecture in France. In 1978 Mario Sabella from Sydney Australia and Sheldon Sinett from New York City came to lecture in Paris.

Then Meldener asked Goodheart whom he would recommend as a lecturer. He suggested David Leaf who came to Paris in 1979 and ever since held January Ski seminars in the Alps on a regular basis.

Starting in 1978, Meldener attended the ICAK USA annual meetings: in Chicago, Montreal, Acapulco, Saint Martin (Caribbean), Hawaii and others. This inspired him to study for the AK Diplomate Exam, which he passed in May 1980.

Eventually the Chiropractic Team was transformed into the ***European Chapter of the International College of Applied Kinesiology***.

However such was the rapid growth of AK throughout Europe at that time that in a few short years this Europe wide chapter was modified in national European chapters: France, UK, Germany and Italy, Switzerland and Benelux were the original chapters and more soon followed.

At that time Meldener was the only teaching diplomate in Europe and was in strong demand to teach the 100 Hours basic course. This he did in France, Denmark, Norway, UK, Switzerland, and Belgium.

He lectured the 100 hours in Bournemouth at the Anglo-European School of Chiropractic and later in London at the British School of Osteopathy, Chris Astill-Smith, Wolfgang Gerz, Hans Garten, Clive Lindley-Jones, and Tracy Gates, the second wave of European Diplomates, were attending.

Meldener was also busy introducing AK to the dental profession in London in Harley Street, in Reims University with Pr Namani, in University of Lille with Pr Dupas, in University of Paris Garenciere with Pr Jeanmonod.

In 1991 at the University of Compiegne in France with Professors Goubel & Perot, Meldener published the first research article that showed, using the Tibialis Anterior muscle, under University laboratory conditions, the objective evidence for manual muscle Testing and AK. During the research George visited the laboratory and approved the research. This was later published in French and English. [15-16]

ICAK-France Revives

In 2002 Laurent Picard DC was an associate with a colleague Philippe Albertini DC, in a company that organized various chiropractic seminars in France.

They wanted to organize the 100 hours of AK because there was no kinesiology course in France. So Laurent phoned David and Monique Leaf to ask if they would be interested in Teaching AK in Paris. Subsequently David organized this course within the French chiropractic school, IFEC.

The next year during this first class, Leaf suggested they establish a chapter of ICAK in France. Picard contacted the only DIBAK, Richard Meldener, who did not share his enthusiasm to create this French chapter. But he did get support from Florent Fournier and Daniel Rafine, both

Laurent Picard lecturing at ICAK-France meeting

chiropractors in Marseille, and they worked to make it happen.

The ICAK-France chapter was born in 2005, when Picard went to Toronto for the ICAK international meeting. A high point for Picard was taking a glass of champagne and spending some minutes alone with Georges Goodheart. From all of this he realized, like so many before him, that ICAK was "his home", the synthesis of all the education of his over many previous years. It was during this meeting that he decided to immerse himself in the study of AK and to pass the DIBAK to teach, in France, in French, the core basis of AK.

Picard took the presidency of ICAK-France in 2007 and gained his DIBAK in October 2008 and since September 2009 he has taught the 100hr AK course in Paris and Toulouse every year. He also teaches Dr. Carl Ferreri's Neural Organisation Technique (N.O.T).

In September 2011, despite their small size ICAK-France successfully organized that year's ICAK international meeting in Bordeaux. Over the next 10 years, about 500 DCs have completed half or all of the ICAK basic training.

In parallel, Dr. David Leaf gave his basic and advance training at the Institut Franco-Européen de Chiropractique (IFEC) in Paris and he also sponsored AK ski seminars in France and Switzerland that laid some of the groundwork for the organizational development of ICAK in Europe. Leaf certified a lot of participants.

In 2014 Florent Fournier, succeeded Picard to the presidency of ICAK-France and has organized many events including the most important chiropractic seminars in France.

ICAK France students celebrate AK!

Applied Kinesiology in Italy

1. The First AK Seminars in Italy
2. Applied Kinesiology and Chiropractic in Italy
3. .AIKA-Accademia Italiana di Kinesiologia Applicata
4. .ICAK-Italia
5. .AK Journal

The First AK Seminars in Italy

When it comes to recalling history, many dates and facts are often incomplete and the Italian AK story is no exception. Although there is some evidence that AK seminars in Europe were organized by the Association Culturelle Chiropractic Team in 1974 and that the first time George Goodheart lectured in Europe on September 2-2, 1976 at the PLM Hotel Orly Paris Airport, there is very little photographic and written documentation regarding the first seminars in Italy. What is known is that Italian-based Jean-Pierre Meersseman was present at this first seminar by Dr. Goodheart.

It's unfortunate that more information was not documented about this period but what is known is that applied kinesiology was spread by the initiatives of chiropractors. Although it has been well documented that Marcello Trentin D.C. was the first full-time chiropractor in Italy starting in 1949, the chiropractic profession did not really "take off" until the advent of the "Static Clinics" in the 1970's and 1980's. Over these decades virtually hundreds of chiropractors, mostly from schools in the United States, were rotated through Italy.

This "new concept" was legally acceptable and opened the way to National Health Insurance contracts, rendering chiropractic free of charge to all Italians. Then combined with skillful and successful publicity, Static became a whirlwind of activity. In a short while, Static established 22 clinics in all the major cities of Italy. With a large capital expenditure, counting more than five hundred active support personnel, each individual chiropractor would deliver more than 500 to 1000 treatments per week and with the entire chain of clinics delivering over a million total treatments to 40,000 new patients per year, Static became one of the largest operations delivering services performed by chiropractors that the profession has ever known.

Quality of care became a problem due to the large numbers; at the same time other chiropractors were setting

themselves up in independent "private" offices with higher quality, superior techniques utilizing applied kinesiology procedures and without reimbursement from the National Health System. Almost all "private" patients paid in cash. These chiropractors represented a minority of the overall D.C. population but were able to create an image of being exclusive and word quickly spread among the population of the incredible results of these chiropractors and also this group started to see large numbers of patients privately.

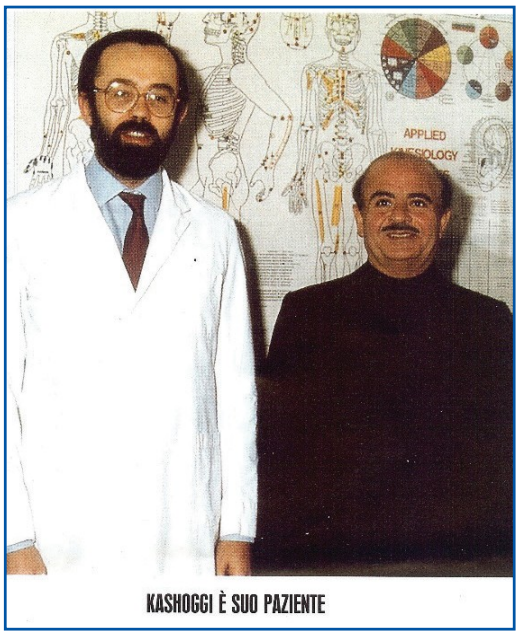
Around this period, having heard of the great opportunities of chiropractic in Italy, D.C.'s from other countries comprised mainly of French, Americans, Belgians, Canadians, Swiss, English and others came to live the Italian dream.

Applied Kinesiology and Chiropractic in Italy

What is clear is that with the growth of chiropractic in Italy there was also the Sanrocco Clinic, which was private and utilized applied kinesiology in its clinical procedures, stood above all other clinics and was not associated with the National Health Care System.

Leading the Sanrocco Clinic was a charismatic, Belgian D.C. by the name of Jean- Pierre Meersseman. His professional career and fame grew in the city of Como, Italy where his clinical proficiency and impeccable professional behavior gained the admiration of even would be critics. Part of the Sanrocco team in the 80's and early 90's were future ICAK- Europe President, Piet Seru, Brice David, Alfio Caronti, and later Antonio Gil, Mark Steele and Kristian Baekkel.

During the 1980's Chiropractic was receiving much attention in the press and VIP's from all over Europe and the rest of the world would travel to be treated in the now famous Sanrocco Clinic in Italy. Among the names mentioned, as patients during this period were billionaires King Hussein of Jordan, arms dealer Adnan Kashoggi, Fiat owner Gianni Agnelli, future premier Silvio Berlusconi, Prince Ranier of Monaco, King Motubu of Zaire. In the world of sports, over 100 World and Olympic champions have been to Sanrocco, the AC Milan Soccer team, and the United States Athletics Team trained in Como for the month before the 1991 IIAF World Athletics Championships in Tokyo, Japan and many others. Of the 41 athletes who trained in Como, 29 were finalists at these IIAF championships. One of the special cases of note was that of Florence Griffith-Joyner, (sometimes known as FloJo) whom earlier had her malocclusion treated by the Sanrocco team and started to set world records soon after that stood for many years.



Adnan Kashoggi &
Dr. Jean Pierre Meersseman

Drs. Seru, Meersseman, David, Gil, and Caronti

AIKA - Accademia Italiana di Kinesiologia Applicata

As the fame of the Sanrocco Clinic grew, there were also many requests by other health professionals to learn what the doctors at Sanrocco were doing and this led to the establishment of an association that would organize courses and bring together members of various health professions to learn applied kinesiology and work together.

In 1988 AIKA - Accademia Italiana di Kinesiologia Applicata (the Italian Academy of Applied Kinesiology) was

established by a team of chiropractors from the Sanrocco Clinic in Como, Italy, although for several years before this, the chiropractors from Sanrocco were already collaborating with dentists with applied kinesiology procedures. The first dentist to collaborate was Enrico Zucchi. In this period, the Meersseman Test for dental malocclusion was developed with its publication in many professional journals. Later, other health professionals with the qualification to form a diagnosis such as medical doctors, psychologists and osteopaths were included. These meetings became weekly occurrences with meetings on Tuesdays and Thursdays that would last from 6 p.m. to midnight and thus it was decided to form a structure such as AIKA to accommodate the growing requests the health professionals wanting to better learn AK. Jean-Pierre Meersseman was elected the first President of AIKA.

The first AIKA courses were given on 3 occasions on June 17-18, September 9-10 and November 11-12, 1989. There were 127 attendees who participated in these courses and became members of AIKA, who later became also members of ICAK-Europe. The courses were offered every year for the next 5 years. In 1993 AIKA became an official chapter of the ICAK-USA and had more than 500 members who took the AIKA courses with Piet Seru serving as President from 1993 to 2000 then followed by Brice David. Unfortunately, in Italy as with government politics, AIKA was not immune to the political climate. During the period around 1996-1997, there was a court case in which a patient sued her dentist for malpractice due to damage after treatment of a malocclusion and it was decided that as a preventative measure it would be best to stop teaching courses to dentists and AIKA was disbanded several years after, around 2001.

ICAK-Italia

On February 13, 2006, The ICAK-Italia Chapter was officially founded with the following people and their positions: Marcello Caso, President; Jean-Pierre Meeressman, Vice-President, Sergio Veneziani, Secretary; Domenico Vlacos, Treasurer.

Other changes in the leadership of ICAK-Italia:

2007-2010: Antonio Gil, President, Jean-Pierre Meeressman, Vice-President, Sergio Veneziani, Secretary; Robert Morrison, Treasurer. Advanced courses, in this period, were given by Chris Astill-Smith (2008) and John Diamond (2009).

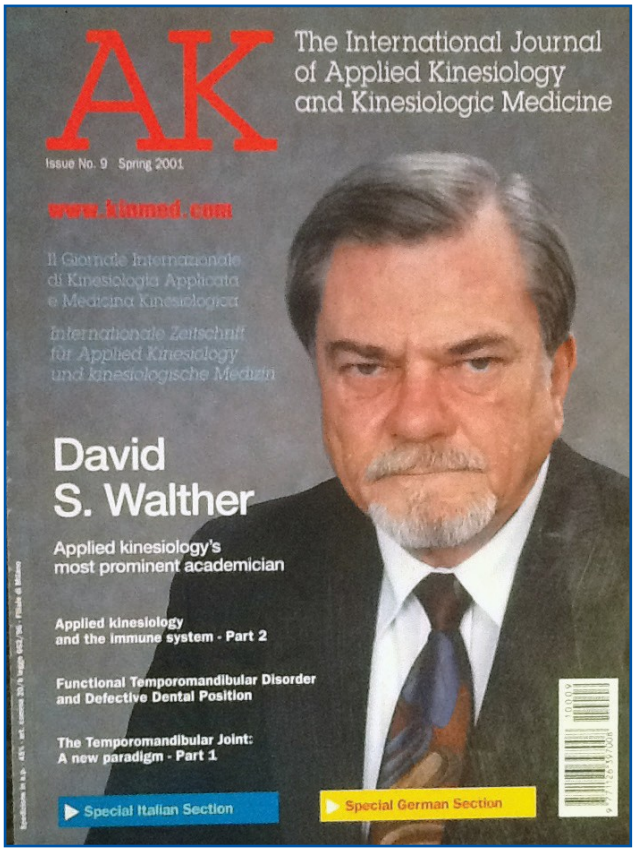
2010- 2014: Robert Morrison, President. Dr. Morrison obtained his DIBAK qualifications and organized some 100-hour courses plus advanced seminars by Dr. Schmitt (April 2010 & October 2011), Dr. Blaich (November 2010), Dr. Leaf (March 2012), Dr. Belli (November & December 2012), Dr. Maffetone (March 2013), Dr. Schusterman (March 2014).

2014-Present (2018): Laurent Nappee, President. Advanced courses have been taught by: Dr. Stephen Gangemi (March 2015), Dr. Thomas Rogowskey (April 2016), Dr. Alan Jenks (April 2017), Dr. Michael Allen (March and May 2018). During this time D Jenks presented the AK basics with 50 and 100-hour courses.

AK Journal

The AK Journal was published by Castello Editore in Italy ran for 21 issues from 1998 to 2006 and had a large readership with almost every AK Chapter in the world subscribing all their members as a group. The AK Journal with Antonio Gil as editor, at one point was surviving finically due to the enthusiasm of the AK chapters and also paid advertisers such as Nutriwest, Biotics, and Standard Process.

Deciding what material to publish in the AK Journal was the responsibility of the Editorial Board included historic names such as George Goodheart, David Leaf, Sheldon Deal, Eric Pierotti, Hans Garten, Michael Allen, Chris Smith among others.



Applied Kinesiology Expands Through Europe and Russia

As we have seen above, International lectures by Goodheart as well as group meetings began in Europe in the 1970s. The first European meeting was held in France in 1976.

There was a small band of European physicians behind this including Jean-Pierre Meersseman, Richard Meldener, and Xavier Gillet. One of the first 100-hour courses was organized in 1982 in Interlaken, Switzerland and taught by Dr. David S. Walther. The AIKA (the *Associazione Italiana di Italiana Kinesiolgia Applicata*) started around the same time as the ICAK-Europe chapter. They allowed only chiropractors, dentists and medical doctors as members.

George and JoAnn Goodheart greet Richard Meldener and his son

Dr. David Leaf sponsored AK ski seminars in France and Switzerland that laid some of the groundwork for the organizational development of ICAK in Europe.

Dr. Joe Shafer was chosen as the first president of the new organization, and he was a Diplomate. Dr. Shafer realized that if AK was to grow in Europe, AK needed to include other professional groups, even physiotherapists. The task of getting them into the organization proved to be a challenging one. Dr. Shafer made the plea that if the group failed to include other professions, then the more powerful professions would take AK and run away with it anyway, and then ICAK would have no control of the direction taken.

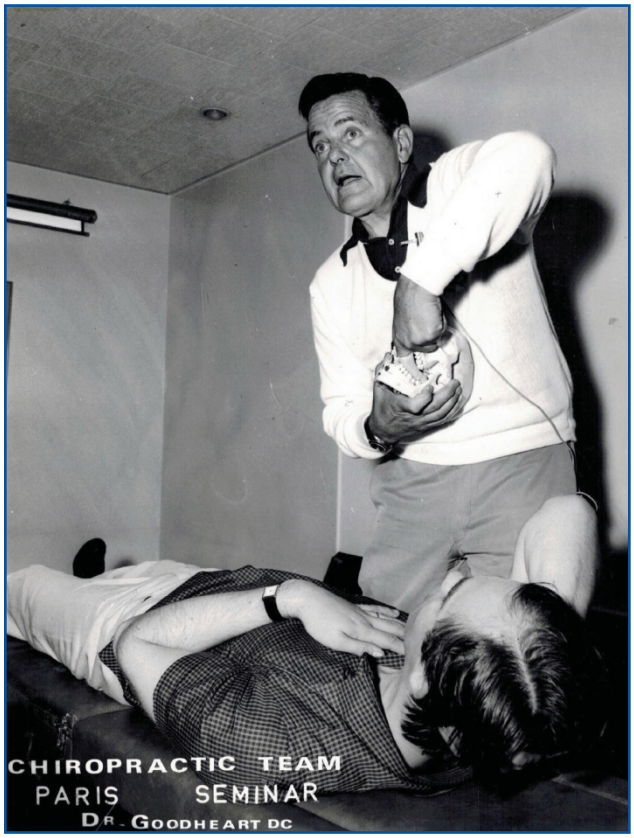
Dr. Shafer thought that if ICAK could get a 'foot in the door' in Europe and permit the other professions to enter into the organization and learn AK methodologies, then it would just be a matter of time before acceptance of the other professions became a common thing, as it is today. Shafer had to get the bylaws passed through the chiropractic 'senate' that could have blocked the fledgling start of AK in Europe. Another goal was to get someone from one of the "non-accepted' professions into the administration of the new ICAK Europe (ECAK) organization. Shafer was able to convince the group to write the bylaws so that Osteopaths and Physiotherapists could become "Non-voting" members. This permitted them to attend ICAK educational seminars, but not have too much influence in the organization. Also, the bylaws required that elected officers of ECAK have at

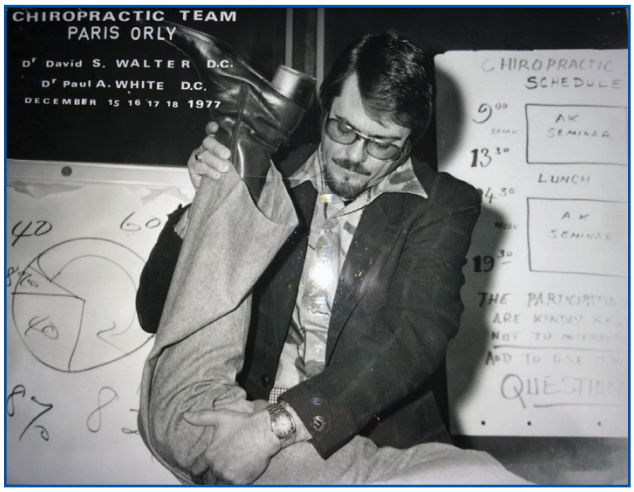
least one member of each profession represented.

This opened the door for getting the osteopathic profession more involved, with Dr. Chris Astill-Smith playing an important role in this early integration. From the 'foot-in-the- door' to equal representation for all professions became just a matter of time. Dr. Astill- Smith went from the editor of the organizational education materials with no voting rights, to secretary, editor and finally to President of ICAK-Europe.

During the developmental years of ECAK, AK was to be under one European roof.

Drs. Goodheart and Walther teaching AK in Europe (1977)





This was difficult because of the language and medical-cultural differences, so it was decided to push the development of an ICAK in every country, and those practitioners without an ICAK in their country could choose the country they wished to be a member in.

Today these ideas have created many more offshoots so that for many, unfamiliar with Goodheart's level of insight and intelligence, his ideas have become discredited in their minds, usually before any real examination, due to poor and sometimes injudicious misuse or expropriation by other leading health professionals. The purpose and the interpretation of the response to any manual muscle test rests with the practitioner, and so in many cases untenable questions may be "asked" of the body using the manual muscle test. There have been many dubious conclusions drawn by various practitioners – both lay-public and licensed professionals – on the basis of seeming change in an" indicator muscle". Worried patients have been told that their heart, liver, digestive tract, psyche and kidneys are weak, or that they are allergic to any number of foods, based on a poorly conducted manual muscle test. [41] Dr. Goodheart and the leadership of the ICAK has vehemently and publicly condemned such hasty applications of manual muscle testing, insisting that the manual muscle test is but one indicator of a possible need for further investigation. Goodheart preferred to correlate his findings with objective tests and indicators of many kinds. Applied Kinesiology, while successfully adopted by a wide number of clinicians around the world, has not advanced into some professional circles as fast as it might otherwise have been.

Applied Kinesiology in the United Kingdom

A layman by the name of Brian H. Butler was one of the first people (in 1976) to introduce some of Goodheart's ideas into the UK. Initially trained as a Touch for Health instructor, he became the Touch for Health Foundation's Faculty member for Britain, and trained many instructors in England and a large number in Europe. In 1988 he and Stephanie Mills created the charitable organisation called the Association for Systematic Kinesiology (ASK). They

also set up The Academy of Systematic Kinesiology (TASK), which offered training to lay people. He later hosted the ICAK-USAs Dr. Sheldon Deal DC, DIBAK, to teach some of his shortcuts in Applied Kinesiology to this group.

However Butler failed to attract many healthcare professionals and it was not until the early 1980's that an ICAK credited Professional Applied Kinesiology course was officially taught by an ICAK Teaching Diplomate in the UK to licensed healthcare professionals.

While both Goodheart and Walther had made brief appearances in the UK, it was not until 1984, under the auspices of the University College of Osteopathy, formally known as The British School of Osteopathy, (BSO), that its post-graduate department ran the first ICAK Diplomate-led course in Professional Applied Kinesiology (PAK) in the UK.

Dr. Antony Newbury, president of the International Academy of Oral Medicine and Toxicology, had previously been involved in helping put on a course on the treatment of the Temporomandibular Joint the year before at the BSO. He had attended a dental seminar on effect of the TMJ on health given by Dr George Eversaul in Las Vegas where he had come across PAK.

Newbury was demonstrating AK and some of those who saw this were 'hooked'. Dr. Newbury found Richard Meldener DC, DIBAK in Paris as the only AK Diplomate in Europe at this time and it was decided to ask him to teach at the BSO. He first agreed to come and teach some of the post-graduate departments board the basics, to see if they wanted to set up a complete official post-graduate course. Richard Holding DO, then a member of the BSO's post-graduate board, thought they could use the weekend, held at Tony Newbury's Harley Street office, to see if others were interested. They invited a small group of senior members of the BSO faculty, such as former Dean Colin Dove DO, and member of the post-graduate board, Stuart Korth DO, founder of the Osteopathic Centre for Children & Chris Astill Smith DO, among others. Richard Holding, DO was also heavily involved in teaching the Sutherland Cranial Teaching Foundation (SCTF) cranial osteopathic post-graduate courses run each year at the BS.O.

Holding first heard of Dr. Goodheart through Dr Robert Fulford DO, who along with several other of Sutherland's respected students, came to London from America to the BSO each summer to teach Sutherland's cranial osteopathic ideas through the auspices of the SCTF. Fulford obviously knew Goodheart but Holding did not know enough to ask him about the connection. Fulford thought Goodheart and Sutherland were very great pioneers!

Professor Andreessen, an orthopaedic surgeon who taught undergraduate myology at BSO with Chris Astill-Smith, was also interested in PAK, and introduced it there, not telling them what it was. Like Newbury and now Holding, he had come across PAK and was also enthusiastic to get a course running at the post-graduate department, but some of the faculty at the BSO did not greet this with enthusiasm.

As Colin Dove said,

"I remember the event with Meldener at Tony Newbury's and the battle to get AK launched at the BSO. So many of our colleagues failed to realise that we were running a business. You get bums on seats by providing what people want not by providing what you think they should study". **(Personal Communication with CLJ, 23rd July 2013)**

Richard Holding remembers:

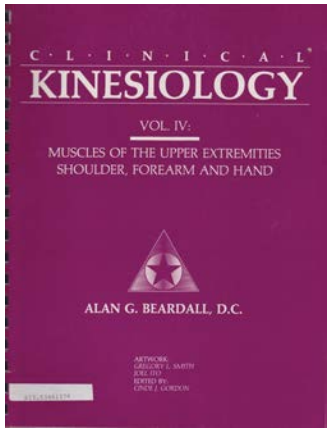
"At the next meeting, we argued for several hours that a chiropractor could teach at the BSO and that he would be paid substantially more per hour than anyone else at that point. I would then be course director for the 100-hour course.

I invited The Anglo European College of Chiropractic in Bournemouth, (now AEEC University College) to share alternate weekends but was told it was not ethical to share! I remember we then ran several 50-hour courses, over several summers in the mid-1980's with Richard Meldener at the BSO when it was at its rather grand Trafalgar Square location, until Chris Astill-Smith was the first British ICAK-Diplomate in 1988 and he took over.

Ken Eddie, from the nutrition company Nutri Advanced, found Alan Beardall DC at a Nutri West (nutrition company) Extravaganza in the US. I circulated widely for Alan though at first he sent John Bandy to do a basic course for him. We did several courses with Alan at the BSO until one Post Grad Board meeting they dropped me from the board and stopped all the courses. Ken took over propagating the Beardall courses up until Beardall's sad, untimely, death". ***(Personal Communication with CLJ, 13th July 2013)***

In front from left to right: David Melrose, Mark Mathews at the Milan ICAK Conference, 1988

Dr. Beardall's work was brilliant and highly detailed research into Goodheart's work became known as "Clinical Kinesiology", perhaps starting the growth of "Alphabet Kinesiologies" as more and more researchers, of various talents and persuasions added to and changed Goodheart's insights.



Dr. Beardall and his wife tragically died while in the UK at a course that was being taught with Dr. Richard Meldener. They were likely victims of driving on different sides of the road in the UK… they must have forgotten

where they were after teaching in Leominster, and when they came onto the main road they stayed on the right and drove head on into a lorry. They were killed instantly.

Despite the lack of enthusiasm from AEEC, several chiropractors joined the osteopaths, dentists and renegade medical doctors in the early courses. Meldener had a special interest in the TMJ and one year attracted a particularly large body of dentists to learn AK.

Meeting Goodheart on one of his early visits to the UK was a great excitement. (Goodheart had been stationed in the UK as a young officer in the USAF during World War II where he showed his genius for lateral thinking in tweaking designs for aircraft weaponry).

The 50-hour courses each summer were stronger on some sections than others and it was still difficult to gather the whole scope of Goodheart's findings. The Atlantic was much "bigger" than it is today, so it was a great moment for many UK doctors, who knew they had discovered their life's work in his.

Around this time the Australian psychiatrist and AK enthusiast John Diamond MD appeared in London and taught his own Goodheart inspired ideas to an enthusiastic audience, but by the later 80's the more impenetrable, muscle-meridian-psychological side of AK was driving a few away from gaining a full mastery of the exciting but elusive treasure trove.

With first John Bandy DC and later, Alan Beardall DC, arriving to teach further complexities of manual muscle testing, a split started to appear in the small band of osteopathic AK enthusiasts. Some, like Richard Holding, became firm enthusiasts of Beardall's Clinical Kinesiology model, while others either drifted away or were a bit bereft as to how to take their PAK studies to fruition.

George J. Goodheart, Jr.
Major, US Air Force
1941-1946

Awarded Bronze Star

Already there were increasing inter-changes between the growing body of AK students across Europe, first as some pioneers came to London to hear Meldener, secondly with the newly founded ICAK-Europe chapter. But quite soon after this pioneering new Pan-European chapter was founded it was soon clear that separate national chapters would be needed to meet the differing needs of different professions attracted to Goodheart's findings across Europe. David Leaf was teaching his annual ski seminar in Switzerland, but these were often too costly for some of the younger clinicians in their early years of practice, with small children and big debts, but apart from Meldener there were no other resident European Diplomates.

George Goodheart demonstrating "reactive muscles" with David Leaf in Paris, 1990

By 1987 the ICAK-Europe Chapter was formed and started to hold annual conferences. After one in Switzerland in 1987 and Milan in 1988, the UK enthusiasts were strong enough to take on organising the International conference in London in 1989 under osteopath Mark Mathew's organisational drive and were very happy, and not a little star- struck at that time, to have both Goodheart and Walther as keynote speakers.

Dr. Chris Astill-Smith took time off from lecturing and seeing patients to hit the books and came back from America in 1988 as the first non-DC to be accepted as a Teaching Diplomate of the International Board of Applied Kinesiology. To the rest of his AK peers who had studied alongside him on those wonderful, if at times confusing, summer AK courses through the preceding four years with Richard Meldener, this seemed a quite remarkable achievement. AK teaching being less codified and standardized at that time.

Chris Astill-Smith's new Diplomate status, allied to his extensive experience of osteopathic education at the BSO, combined with his natural gift for making complex material understandable launched a remarkable flowering of PAK across Europe. He began teaching AK all over the continent along with ICAK-E's indefatigable expat President, Diplomate Joe Shafer DC, then based in Denmark. Drs. Astill Smith or Shafer were then running courses in the UK, Denmark, Germany, and Italy and by the early 1990's spreading the word to an enthusiastic core of Russian doctors not long out of the iron grip of the Soviet Union.

Drs. Wally Schmitt with Clive Lindley-Jones, Alison (+ baby CJ) Astill-Smith and Chris Astill-Smith, Bath UK, 1992

Astill-Smith, the first in the UK out of the block with teaching Diplomate status, almost single handedly set up and ran ICAK-UK in its early days, enthusiastically teaching the basic course in the UK, regularly travelling to what was regarded as 'the source' to learn new angles from Goodheart and others in the ICAK-USA, and sharing them with a growing body of AK aficionados at 'Up-date' weekends in Bath or Oxford back in the UK.

At the international ICAK Conference in Paris, 1990 the idea of a sub-Diplomate status was introduced by Astill-Smith, at the request of the Osteopaths in the UK: The Certificate Clinical Competence.

The following year at the International Conference in Copenhagen (organised by Shafer and a small but enthusiastic group of Danish AK students), the first two MD Diplomates, Wolfgang Gerz and Hans Garten from Germany passed the Diplomate exam and they started to take over from Astill-Smith much of the teaching in Germany and Austria.

The following year in 1992 two more UK osteopaths, Alison Astill-Smith (then married to Chris Astill-Smith) and Clive Lindley-Jones, took the Diplomate exams in Brussels, perhaps the only IBE exams to allow extra time for breast-feeding, as Alison with still nursing their first son!

Early female Diplomates -- UK Osteopaths Tracy Gates and Alison Astill-Smith – start to change the male-dominated European AK teaching scene

Throughout the early 1990's others in the UK, like the indefatigable Tracy Gates DO, Pauline Mathers, DO, and the innovative Simon King DC followed, gaining Diplomate status and joining the other new Diplomates around Europe starting to teach the now more organised teaching schedule of the original 100-hour AK course. At that time it was hoped that this small but growing torrent of Diplomates was going to carry on, and yet from there, at least in the UK, few more joined the ranks for many years. Despite many weekends of enthusiastic teaching and learning going on to the present day, the post-graduate teaching and learning world has changed and perhaps, despite the increasing demands for Continuing Professional Education hours, with the advent of the demands of Evidence Based Medicine (EBM) and ICAK's slow adaptation to these demands, along with the expansion of a myriad osteopathic and chiropractic post-graduate courses on offer, the red hot enthusiasm for all things "Goodheart", so exciting to earlier generations in the 1980s has not struck in the hearts of as many in the UK, as early promise might have lead us to expect. This slight dimming of the passions for AK however has not occurred with everyone or everywhere, as the German, Russian, Australian and Korean experience has shown.

Left to right: the late Jeff Farkas, Wolfgang Gerz, Clive Lindley-Jones, Hans Garten, Chris Astill- Smith, Richard Meldener, and Joe Shafer, at European Diplomates meeting Monte Carlo, 1995.

AK in the UK has however attracted a steady flow of students, each year, from those early days in the 1980's to the present, mainly osteopaths and chiropractors with a smattering of medical doctors looking beyond the prevailing medical model. The classes of first Chris Astill Smith, then Clive Lindley-Jones and later Tracy Gates, Pauline Mather and Simon King, kept a small but enthusiastic group going.

When in the late 1990's Chris Astill Smith stepped down from the Presidency, vice president Clive Lindley- Jones, by then busy trying to assist the Sunflower Trust in promoting an AK-based model helping children thrive at school, decided he did not have the time to run the chapter and assist the charity and so was happy to see Tracy Gates take over as President, a role she held very capably for many years alongside her work as secretary to the International Board of the ICAK. Eventually as the others dropped out from teaching the basic course, Tracy Gates was for many years left teaching the entire basic AK course in the UK.

There have been new and enthusiastic faces taking the diplomate exam in recent years in the UK, such as Karen Willis, Alan Jenks and Jim Townsend – however Alan and Jim moved to Holland!

Thanks to Dr. Joe Shafer's wisdom and tact (following Goodheart's aphorism that '*you only keep what you give*

away'), who encouraged and maneuvered ICAK to open its doors in Europe beyond the chiropractic profession, Astill-Smith's excellent teaching talents and unstoppable enthusiasm (if not for air travel, at least for teaching most weekends around Europe), soon saw PAK spreading rapidly across the continent from the Atlantic to the Urals.

But at this time a bigger shift was also underway. The high standards of German medical education were married to the Teutonic talent for organisation and practical efficiency.

One hot summer in the early 1990's a weekend meeting was convened at Clive Lindley-Jones' house in Oxford UK, to thrash out ideas for a combined European AK syllabus, to see if the largely UK needs, taken more or less wholesale, by osteopath Astill- Smith from the American chiropractic model, could be merged with the German syllabus that was being developed by the Drs. Gerz and Garten for the German speaking students, mainly coming from a medical-physiotherapy background, some with additional training in osteopathic or chiropractic skills and philosophies.

Despite much hard work and great argument this was not to be. Each country's chapter, coming as it does with its own historical and cultural differences, attracts a different body of clinicians with differing needs and professional focus. As mentioned above, most feel more comfortable being taught by colleagues of their own professional stripe. The freer, early pioneering days of AK in Europe in the 1980's, when a few enthusiasts were happy to cross professional boundaries, learn and share from each other, all united by their enthusiasm for AK hopefully could be sustained permanently in that form, at least in Europe despite a slight diverging of basic syllabuses.

However new pressures and a harsher, more government-controlled professional climate has not been kind to PAK except perhaps in Austria where it has been accepted as an accredited medical post-graduate course, but then that, sadly, has led to the Austrians leaving the international community of ICAK.

With most of the founding members gone, new and younger enthusiasts are in most of the ICAK chapters around the world, running with Goodheart's innovative genius. Outside the United States, the chapters with the most vibrant groups seem mainly in the Francophone Canadian, German, Russian, Australian and Korean Chapters. And yet across Europe from France and the UK in the west to Latvia and Russia in the east, passionate enthusiasts teach and share the knowledge with undimmed enthusiasm.

This is not to say that all has been plain sailing in PAK's first few decades, as it has spread across the world beyond the shores of its native USA. Like all passionate exchanges of scientific and medical insights, it has brought both heated debate and, at times, quite bitter conflict, argument and organisational difficulties. However it would not be stretching things too much to say that this joy in the exchanging of insights old and new based in the power of Goodheart's discovery has brought greater inter-professional and international friendship fostering mutual respect, where only a generation ago it was all out war. Some of that good will can be ascribed, not only due to Goodheart's vision and insights, but also to his example of old-fashioned 'Good Heart'. Goodheart was naturally most munificent, and grew more so as his influence increased in the world, accompanying what he gave with that courtesy and freedom which, to speak the truth, is necessary to make the benefit really compelling for his AK students around the world.

GJG with Early European Diplomates

Where the professions and countries it has settled in are a bit more open to ideas beyond drugs and surgery, PAK has thrived. Good examples are, in Europe, the extraordinary growth in Germany. Equally in South Korea exciting things are being done with PAK that just are never considered elsewhere, in a culture that gives parallel high status and demanding education to both western allopathic medicine as well as Traditional Korean Medicine.

Applied Kinesiology in Germany

Beginning in 1984 Wolfgang Gerz (MD), who had been a World Champion in the Finn Dinghy Sailing class, had participated in the Olympic competitions as a competitor. He had problems with his low back during this event and was treated by a Chiropractor who used Applied Kinesiology. He immediately became interested in what she was doing and bought one of the seminar handouts by Dr. David Leaf.

Drs. Gerz, Alikhan, and Goodheart

In 1985 he started his "Chirotherapy" training in Germany, a post-graduate training in manual medicine for medical doctors. At the training table he met Hans Garten, MD, who was doing his specialization in anesthesiology and, unhappy with the diagnostic tools this discipline offered for pain control, decided to undertake the same training. He had been a trained acupuncturist since 1981 and immediately became inspired by the opportunities Applied Kinesiology offered.

In 1985 Dr. Wolfgang Gerz organized the first 50 hours training in Applied Kinesiology in Munich Germany, which were taught by the first European Diplomate at that time, Dr. Richard Meldener. The second 50 hours were taught by the second Diplomate in Europe, Dr. Christopher Astill-Smith, in 1988, who taught another two series of 100 hours organized by Hans Garten in Hamburg.

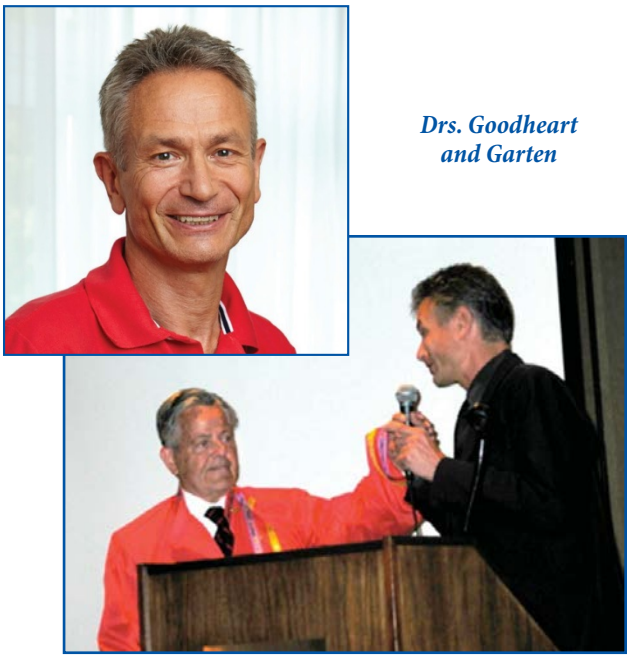
In 1991 at the ICAK European Meeting in Copenhagen, Hans Garten and Wolfgang Gerz passed the Diplomate exam, being the first medical doctors outside the United States to take this exam. From then on they started to teach medical doctors, dentists, Heilpraktikers and physiotherapists in Germany, which seemed to be logical, as there were only a handful of chiropractors in Germany.

In 1992 they founded the "Deutsche Gesellschaft für Applied Kinesiology" (DGAK), whose first Chairman was Gerz and had medical doctors, dentists, physiotherapists and Heilpraktikers. Heilpraktikers are a professional group in Germany, which has no defined education but who, after an exam before a medical board, is furnished a license to diagnose and is similar to the naturopathic profession in Germany. Unknowingly it had the same abbreviation as the association that had been founded by Heilpraktikers and laypeople in Freiburg, Germany, who had actually taken a "Touch for Health" training and called themselves the "Deutsche Gesellschaft für Angewandte Kinesiologie" (DGAK). The Freiburg group forced the medical group to change its name threatening it with a law suit, which was the origin of the German Chapter of ICAK: ICAK-D.

In 1993 the "Internationale Ärztegesellschaft für Applied Kinesiology" (IÄAK) was founded in Klagenfurt, Austria, which later changed its name to International Medical Society of Applied Kinesiology (IMAK) This group acted within ICAK as a profession specific "Inter-Chapter-Affiliate". In 1993 the Austrian Chapter was founded (ICAK-A), with members who are medical doctors, dentists and physiotherapists.

Drs Dieter Becker & Martin Brunck, teachers of Schmitt's Injury Recall Technique in Germany and beyond

In 1996 Garten founded the "*Deutsche Ärztegesellschaft für Applied Kinesiology*" (German Medical Association of Applied Kinesiology, DÄGAK) together with Jeff Farkas, an American chiropractor, working in Germany. This became the second German Chapter, which had medical doctors and dentists as members as well as physiotherapists as associate members. The structure copied the one of the Medical Manuel Medicine associations in Germany with the intent to bridge the gap between Applied Kinesiology and established manual medicine. DÄGAK ever since its foundation has sought to promote Applied Kinesiology as a scientifically based technique of Manual Medicine. The pre-requisite for acceptance of a technique should thereby be at least a credible model within the parameters of established science. The majority of this growth and activity was done with Dr. Goodheart's blessing.



Drs. Goodheart and Garten

The three German-speaking Chapters grew relatively fast as the acceptance of Complementary and Alternative Healthcare traditionally is quite important among both patients and health professionals in Germany, which after all is the country of origin of such methods as Homeopathy (Hahnemann), neural therapy (Hunecke) and electro acupuncture (Voll).

Helpful in this process has been the publication of the first textbook on Applied Kinesiology in German by Gerz in 1996, with a second edition in 2000, [17] a series of educational videos by Hans Garten in 1996, [18] another two textbooks in 2004 (now in its second edition) and 2007. [19-20] There are textbooks on AK and acupuncture [21] and AK and cranial osteopathy as well as three handbooks on manual muscle testing by Garten, Gerz, and Ramsak. [21-26]

In November 2004 the IMAK (Chairman Harald Stossier) obtained accreditation of the Diploma of Applied Kinesiology from the Austrian Medical Chamber for the Austrian Chapter, which has an important status in the European Union according to its legislation. It is the first and only certificate in Applied Kinesiology awarded by a Medical Board in the world.

ICAK International Conference in Vienna, 2006

Since 2008 DÄGAK and ICAK-A (under the roof of IMAK) developed their uniform teaching curricula with standardized handouts, which are compulsory for every teaching Diplomate. Diplomates who are IMAK lecturers exclusively teach the material which they have a specialized proficiency in. (chiropractic, osteopathy, orthomolecular medicine, acupuncture, etc.).

DÄGAK Conference Dresden in 2014 celebrates 50 years of AK

These Chapters published the MJAK (Medical Journal of Applied Kinesiology), the abstracts of which can be read in English language. The full text articles in German can be ordered at **www.DAEGAK.de**

Applied Kinesiology in Benelux

The first AK seminar in Benelux occurred in Antwerp in 1989, with seminars by Richard Meldener and Christopher Astill-Smith. In 1987 Dr. Geert Drenth had followed an AK seminar with Richard Meldener in London, and worked for a year at the osteopathic practice of Christopher Astill-Smith. He was so excited with the AK results that once he moved back to Belgium, he started a yearly returning 100-hour event. This seminar series has remained successful and has stimulated around a thousand practitioners in Belgium and Holland.

After Drs. Smith and Meldener, many diplomats have taught AK in Belgium and Holland: Wolfgang Gerz, Hans Garten, Jeff Farkas, Joseph Shafer, Clive Lindley-Jones, Tracy Gates, Dieter Becker, Ulrich Angermeier, Wally Schmitt, Phil Maffetone, Laurent Picard, Richard Belli and Steve Gangemi all delivered their own AK insights.

Senior members of the ICAK Benelux Board celebrate on the Royal Yacht Brittannia at the 2018 ICAK Conference in Scotland. Left to right: Bodil Petersen, Ivan Devos, Marielle Alewaters, Geert Drenth, Alan Jenks, Jim Townhill, and Eddy Deproft.

Because the ICAK-Benelux now has their own diplomats, Alain-Bruno Judicq teaches AK in French, Geert Drenth in Dutch, and Alan Jenks and Jim Townhill are teaching 100-hour AK modules in English. ICAK-Benelux was founded from the existing ICAK-Europe in 2006 by Geert Drenth, Ivan Devos and Hans van Beers and has been continued by Bodil Petersen, Marielle Allewaters and their teams. Ivan Devos started his AK education 40 years ago with James Durlacher during his chiropractic education in the USA, and was one of the first to go to the AK meetings in Paris. Dr. Devos also videotaped all the seminars with Chris Smith. He still has all the original audiotapes with Dr. Wally Schmitt.

In 1987 Geert Drenth was stimulated by Christopher Astill-Smith to start the AK seminar with Richard Meldener in London. It was here that he met Harry Stassen, a Dutch dentist who would became a board member of the ICAK-Europe and stimulated Geert to start organizing seminars in Belgium.

After the first 100-hour modules in 1989, Chris Smith continued teaching subsequently for years. In the beginning only chiropractors and osteopaths would attend the seminars. Then one year a physiotherapist named Christianne Crijns attended, which was not to the likings of the Dutch chiropractors who were following the 100-hour seminar. Because of her, Harry Stassen stimulated

the ICAK-board to accept the Dutch physiotherapists to be part of the ICAK-Benelux. Since this time hundreds of physiotherapists and manual therapists have successfully been educated in the basics of Applied Kinesiology.

In Belgium physiotherapy is a five-year Master degree at all universities, but the chiropractic and osteopathic professions are still not recognized by the Belgium government, despite their large numbers in the country. This is due to an old Napoleonic law, which states that only medical doctors are allowed to diagnose. In Holland both professions are regulated, although the DC and DO organizations still impugn the value and evidence-base for AK.

The first sponsor that helped organize the seminars in Belgium was Biodynamics, a company selling Nutri West nutrition products. The owner, Francis Maes, would personally come to every seminar and help in every way he could. In 1992, Francis was the one to organize the International Annual Meeting in Brussels. With Dr. Goodheart present, this became a successful International Meeting, and nothing was considered too much for the entertainment of ICAK delegates. It took some time before the ICAK finances were back to normal.

In 2008, Geert Drenth organized the International Meeting in Antwerp, "Back to Basics", which had a good turnout and especially the gala-party on Saturday evening. This adventure will hopefully be repeated in Bruges, June 2020.

Applied Kinesiology in Russia

Dr. Lyudmila Vasilova was the chair of post-graduate Manual Medicine in Novokuznetsk, Siberia (Russia), and asked Joe Shafer (a chiropractor) and Chris Astill-Smith (an osteopath) to bring the first AK courses to Novokuznetsk Russia in the fall of 1991. Dr. Lyudmila Vasilova was the driving force for the organized part of ICAK-Russia.

Lyudmila Vasilova with flowers, with Vasily Zagura, David Leaf, Olegs Suhorukovs and Latvian and Russian delegates. Riga ICAK Conference, 2016.

AK in Russia began in this way. Dr. Shafer went to a Russian International Sports Medicine Conference in Moscow. While there he gave a modicum '5 minute' presentation as they asked the group of chiropractors there if anyone could present something. No one was willing so Shafer thought that he might just demonstrate 'Gait' reflexes and facilitation and inhibition. Lyudmila Vasilova was present as the chair of Post-graduate Manual Medicine in Novokuznetsk, Siberia (Russia).

She was impressed and had heard of AK and craniosacral therapy. She asked Shafer if he could come to Russia and present craniosacral techniques. He told her that he was not a cranial osteopath, but an applied kinesiologist and that AK had techniques in the craniosacral discipline. So she asked him to come and do a 5-day course.

Having never done a 5-day course and only just putting together a 100-hour basic course, Shafer was terrified of going to Russia alone and attempting to give a 5-day lecture. So, he thought of Chris Astill-Smith, as he was an AK colleague and had classic cranial osteopathic training. Shafer contacted Lyudmila and she invited them to come in the autumn of 1991.

Dr. Sergey O. Pilyavskiy, MD, DIBAK is a Director of the Institute for Clinical Applied Kinesiology in St. Petersburg, Russia. In addition to teaching and clinical practice, he has successfully begun translating into Russian the textbooks written by the leading Western applied kinesiologists and publishing them throughout Russia. Sergey is also a Vice President of the ICAK-Russia.

That started AK in Russia. Lyudmila Vasilova has been the main driving force for the organized part of ICAK-Russia.

Dr. Sergey Pilyavskiy, MD, DIBAK

The History of ICAK in the Baltic States (Balticum)

The history of origins of ICAK Balticum dates back to the end of the 1990's, when Professor Lyudmila Vasilieva first visited Riga.

Lyudmila Vasilieva was one of the first graduates of the course, taught by ICAK diplomats Joseph Shafer and Christopher Astill-Smith in Russia in the early nineties.

Professor Vasilieva enthusiastically embedded the acquired knowledge into her medical practice, as well as widely advocated it.

Chris Astill-Smith and Joe Shafer receive warm acknowledgement for their role in bringing AK to Russia and the Baltic States, Riga 2016

A professor of rehabilitation, Zinaida Kasvande, organized her first introductory course in AK together with Professor Vasilieva in Riga. The course immediately became popular among doctors, specializing in manual therapy. Olga Ivanovskaya, Mikhail Petrov, Vladimir Sklyarevich, Anita Dyachenko, Valeriy Kudoyar, Oleg Sukhorukov, Visvaldis Bebrišs, Uģis Beķeris and many others were amongst the first researchers of a new scientific discipline – Applied Kinesiology. In order to continue their studies, Sklyarevich, Ivanovskaya, Kudoyar and Sukhorukov headed to Novokuznetsk and Moscow, and completed a course in manual therapy, specializing in basics of AK and muscle testing.

Thus, groundwork was laid for the following spreading of AK knowledge, as well as acquiring it in Latvia and the Baltic States. The doctors kept on visiting courses in Russia, brilliantly taught by Joseph Shafer, Chris Astill-Smith, John Diamond, Hans Garten.

A new impulse in the exploration and development of AK in the Baltics was the organization of a basic course in AK in the years 2004-2005 with the participation of German colleagues – Wolfgang Gerz and Karmen Kannengeizer. An off-site training course, which took place on the island of Rugen, Germany, rallied the Baltic colleagues based on a common interest in studying AK. In 2005, the foundation of the Baltic society of AK – ICAK Balticum, appeared to be a logical continuation.

With the participation of Estonian doctor Vasiliy Zagura, Lithuanian doctors Alfredas Marushko, Almantas Pocius, Dalus Barakauskas and others, it was possible to expand the geography of AK and create a department of ICAK of the whole Baltic region – ICAK Balticum. Wolfgang Gerz and Michel Allen were significantly involved, and so were John Diamond, Joseph Shafer and Tracy Gates, whose motivational performance helped found ICAK-Balticum.

The foundation of a regional organization in AK allowed a more active participation in ICAK conferences all around the world. One of the highlights is when Valeriy Kudoyar and Oleg Sukhorukov visited Detroit in 2007. The colleagues had an unforgettable time acquiring new experiences and studying emotional sides of the health triad, in a course taught by a prominent psychiatrist, one of Goodheart's first followers and closest allies, John Diamond, in his New York home.

The doctors were initially impacted by the founding father of AK, George Goodheart, in his home in Detroit, with the active participation of John Diamond. The communication and help of colleagues has supported ICAK-Balticum on its thorny path in mastering AK. On a conference in Amsterdam, Hans Garten, in a private conversation, offered Oleg Sukhorukov to take the ICAK diplomat exam. His offer was motivated by the fact, that, if Oleg, a Russian speaker, were to pass, it would be possible,

Baltic state doctors studying AK with Dr. Harald Stossier from Austria

AK doctors from around the world enjoy a beer with host, Oleg Sukhorukov, after the rigors of a traditional Latvian Sauna, Riga 2016.

with translations, for Russian- speaking specialists to pass the exam in their mother language.

A hard time started for Oleg Sukhorukov – a period of passing the diplomat exam.

Boston, Toronto, Berlin, Bordeaux, and Vienna – these were the geographical stages of passing the exam. Having passed it in 2010, Oleg Sukhorukov was accepted into IBE – the examination committee. The exam questions have since then been translated into Russian. Soon, there were new ICAK diplomats: Tatyana Chernishova, Sergey Pilavsky – they passed the exam in the Russian language. Once there are candidates in Latvia, who would want to pass the exam in their mother language, it will facilitate the translation of the exam questions into Latvian.

The organization of regular seminars with the participation of famous specialists, such as John Diamond, Tracy Gates, Joseph Shafer, Chris Smith, Harald Stossier, Jose Palomar and others contributes to the support of interest in AK among specialists in the Baltics on a high level. The success in medical work among the specialists, who have acquired AK, graphically demonstrates the advantages of this medical discipline. AK is being more and more popularized and it gives ground to hope that there will be a new generation of specialists, who would like to study AK, as well as that there will be new wonderful pages in the history of AK of ICAK-Balticum.

With the holding of the 52nd annual ICAK conference "Balance & Harmony" in Riga, Latvia in August 2016, ICAK-Balticum became truly on the international AK map.

International ICAK Conference comes to Riga, Latvia, 2016

Applied Kinesiology in Australia

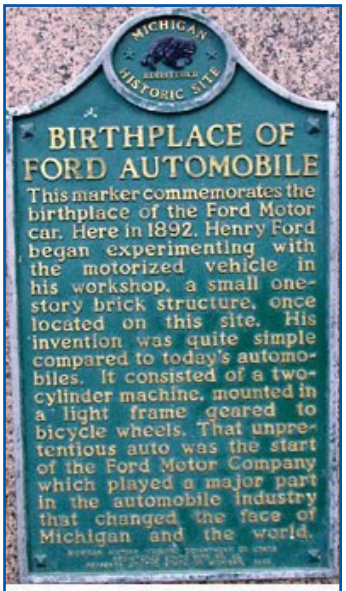
The very first Australian exposure to AK was to four undergraduate students at Palmer College in the early 1970's. They were Ian Hope, Mario and Henry Sabella and Donald McDowall. Dr. Goodheart instructed them during his presentations at local chiropractic association meetings. In their graduation year Mario, Henry and Donald felt confident enough in AK techniques to begin teaching small AK classes at the Palmer College in 1973 and 1974. Dr. Mario Sabella was involved in forming the very first AK Club.

Before graduating, Mario Sabella went on to work in Dr. Goodheart's Detroit practice in the Michigan Building, famous for where Henry Ford made his first car. Dr. Goodheart felt the environment of Henry Ford's creativity in this building inspired him to innovate.

While Ian Hope was waiting to graduate in 1974, Mario Sabella returned to Australia in 1973 and worked in Ian Hope's first practice, the Macquarie Chiropractic Clinic in Belconnen, ACT. There, Dr. Mario prepared an AK chiropractic practice for his friend Ian.

Donald McDowall returned home to Canberra in 1974. After working in his father, Keith McDowall's practice for 2 years, Donald purchased the Macquarie Clinic from Ian Hope in 1976. Henry and Mario moved to Newcastle, NSW to establish another AK practice.

Dr. Goodheart



The Michigan Building is built upon the site where Henry Ford began experimenting with the motorized vehicle in 1892.

In 1964, Dr. George Goodheart discovered Applied Kinesiology here.

gave Donald, Mario and Henry a letter of authority in 1976 to teach his work -- via the authority of Australian Chiropractors Association (ACA) and under academic approval of the Phillip Institute of Technology (PIT) -- prior to the Chartered Diplomat's meeting of the inauguration of the ICAK. All profits were given to the Institute to help establish the new chiropractic program. Mario Sabella was the only Australian able to travel to attend the 1976 ICAK foundation meeting in Dearborn, Michigan where he was awarded the Chartered Diplomat status.

Donald McDowall was able to travel to Dearborn, Michigan in 1977 and sat the first trial of the written section of the Diplomate exam. He sat and passed the practical section in 1978 for his Diplomate award. Donald McDowall became the first Australian to complete the Diplomate of the International Board of Examiners of the ICAK. Donald began teaching AK in Canberra in 1978 using the first official ICAK approved Walther Seminars' materials upon their release in 1978. Dr. Mario Sabella used these same resources to teach AK in Sydney. Henry Sabella practiced AK but didn't take on the teaching duties.

Both Drs. Donald McDowall and Mario Sabella were responsible for lighting the flame of interest in AK, which grew rapidly over the next few years.

Not unlike themselves, Donald and Mario's early teaching at Preston Institute sparked the interest of many students to investigate AK further. One student at the time, Victor Portelli, began taking the 100-hour courses offered by Drs. McDowall and Sabella concurrently. Victor completed 4, 100-hour sessions with Dr. Sabella and 3 with Dr. McDowall from 1978.

The first AK seminars were sponsored by and coordinated through the Post Graduate division of the International College of Chiropractic in Australia (ICC) beginning in 1976-79.

Dr. Portelli taught an unofficial AK introductory class to around 40 students of the Preston Institute Technology (PIT) in 1984-85 for no fee and among those first exposed were the people that would eventually form the local association.

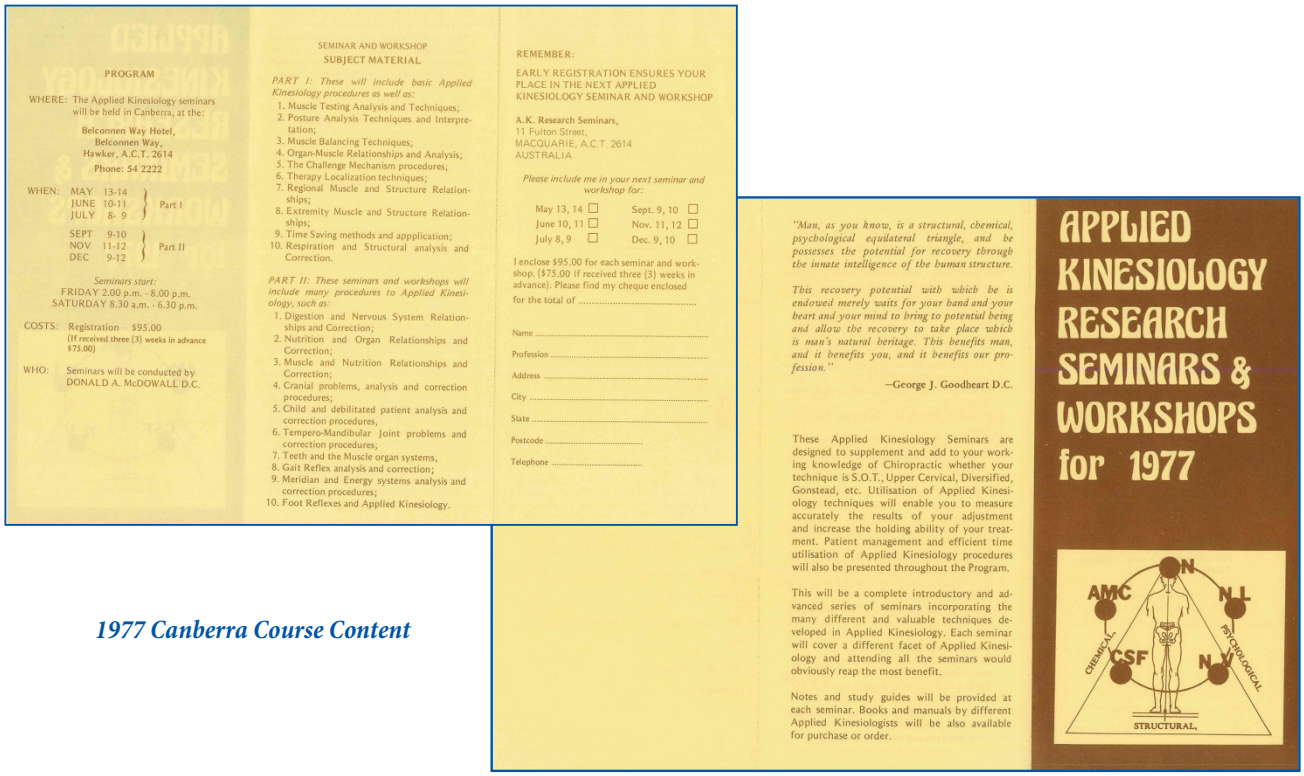
One of these students did further courses with Dr. Sabella and became the first student from PIT to pass the Diplomate exams in Washington DC in 1987.

During a week-long skiing trip to Falls Creek in the Victorian Highlands in the early to mid-1980s, a dedicated group of young enthusiastic doctors keen on AK thought it a great idea to form a exclusively chiropractic AK Association. These hearty souls included, Robert Peacock, Victor and Peter Portelli, Keith Maitland, Joe Krawec, Barry Decker, Andrea Bisaz and a few chiropractic students from PIT. During the morning they thrashed their bodies on the slopes and in the afternoon and evening they thrashed their brains trying to work out how to start up an organization from scratch.

With little experience of how associations or committees worked, they forged ahead seeking legal advice largely paid for by Victor Portelli and they decided to form an exclusively chiropractic association to be named *The Chiropractic Applied Kinesiology Association.* (CAKA)

Dr. Portelli was elected the inaugural president with Robert Peacock as his vice president and a few enthusiastic people who formed the bulk of the committee including Joe Krawec, Andrea Bisaz, Barry Decker, and Keith Maitland but without any formal structure. The group grew exponentially over the first couple of years in the mid 1980's to around 200 members, who had a strong interest in this new and exciting technique and wanting to know more.

In 1987 Keith Maitland became the first Australian trained chiropractor to successfully pass the diplomate exams in Washington DC and soon after his return to



PROGRAM

WHERE: The Applied Kinesiology seminars will be held in Canberra, at the:

Belconnen Way Hotel,
Belconnen Way,
Hawker, A.C.T. 2614
Phone: 54 2222

WHEN: MAY 13-14, JUNE 10-11, JULY 8-9 } Part I
SEPT 9-10, NOV 11-12, DEC 9-12 } Part II

Seminars start:
FRIDAY 2.00 p.m. - 8.00 p.m.
SATURDAY 8.30 a.m. - 6.30 p.m.

COSTS: Registration — $95.00
(If received three (3) weeks in advance $75.00)

WHO: Seminars will be conducted by DONALD A. McDOWALL D.C.

SEMINAR AND WORKSHOP
SUBJECT MATERIAL

PART I: These will include basic Applied Kinesiology procedures as well as:

1. Muscle Testing Analysis and Techniques;
2. Posture Analysis Techniques and Interpretation;
3. Muscle Balancing Techniques;
4. Organ-Muscle Relationships and Analysis;
5. The Challenge Mechanism procedures;
6. Therapy Localization techniques;
7. Regional Muscle and Structure Relationships;
8. Extremity Muscle and Structure Relationships;
9. Time Saving methods and appplication;
10. Respiration and Structural analysis and Correction.

PART II: These seminars and workshops will include many procedures to Applied Kinesiology, such as:

1. Digestion and Nervous System Relationships and Correction;
2. Nutrition and Organ Relationships and Correction;
3. Muscle and Nutrition Relationships and Correction;
4. Cranial problems, analysis and correction procedures;
5. Child and debilitated patient analysis and correction procedures,
6. Tempero-Mandibular Joint problems and correction procedures,
7. Teeth and the Muscle organ systems,
8. Gait Reflex analysis and correction;
9. Meridian and Energy systems analysis and correction procedures;
10. Foot Reflexes and Applied Kinesiology.

REMEMBER:

EARLY REGISTRATION ENSURES YOUR PLACE IN THE NEXT APPLIED KINESIOLOGY SEMINAR AND WORKSHOP

A.K. Research Seminars,
11 Fulton Street,
MACQUARIE, A.C.T. 2614
AUSTRALIA

Please include me in your next seminar and workshop for:

May 13, 14 ☐ Sept. 9, 10 ☐
June 10, 11 ☐ Nov. 11, 12 ☐
July 8, 9 ☐ Dec. 9, 10 ☐

I enclose $95.00 for each seminar and workshop. ($75.00 if received three (3) weeks in advance). Please find my cheque enclosed for the total of .....

Name .....
Profession .....
Address .....
City .....
State .....
Postcode .....
Telephone .....

"Man, as you know, is a structural, chemical, psychological equilateral triangle, and he possesses the potential for recovery through the innate intelligence of the human structure.

This recovery potential with which he is endowed merely waits for your hand and your heart and your mind to bring to potential being and allow the recovery to take place which is man's natural heritage. This benefits man, and it benefits you, and it benefits our profession."

—George J. Goodheart D.C.

These Applied Kinesiology Seminars are designed to supplement and add to your working knowledge of Chiropractic whether your technique is S.O.T., Upper Cervical, Diversified, Gonstead, etc. Utilisation of Applied Kinesiology techniques will enable you to measure accurately the results of your adjustment and increase the holding ability of your treatment. Patient management and efficient time utilisation of Applied Kinesiology procedures will also be presented throughout the Program.

This will be a complete introductory and advanced series of seminars incorporating the many different and valuable techniques developed in Applied Kinesiology. Each seminar will cover a different facet of Applied Kinesiology and attending all the seminars would obviously reap the most benefit.

Notes and study guides will be provided at each seminar. Books and manuals by different Applied Kinesiologists will be also available for purchase or order.

APPLIED KINESIOLOGY RESEARCH SEMINARS & WORKSHOPS for 1977

1977 Canberra Course Content

Queensland he began teaching AK certification series using Walther's materials which included manuals and slides.

The first official seminar of the fledgling association was held in Melbourne on December 5th, 1987 and featured both Donald McDowall and Keith Maitland as the speakers and was very well attended with many travelling from all over the country to attend.

Victor Portelli served 2 terms as president and was succeeded by Robert Peacock.

During Robert Peacock's presidency and the fast expansion of the group it had become clear that a formal structure to the committee was becoming a requirement, especially as they were seeking recognition as a subchapter of the ICAK. A name change of the organization to better reflect the true direction of AK which was being embraced by other non-chiropractic professionals internationally, getting away from an exclusively chiropractic organization, also became a priority.

Eric Pierotti and George Goodheart relax downunder

Dr. Eric Pierotti, the education officer for the Australian Chiropractors Association (ACA) in South Australia and with many years of committee and seminar experience, was himself an avid fan of AK, had staged several 100-hour basic courses for Mario Sabella. He had also successfully brought Dr. David Walther to Australia for seminars in both Adelaide and Sydney, and was recruited to the board as secretary in early 1988 and mandated with getting the house in order.

Robert Peacock and Eric Pierotti, spent 2 days in Melbourne rewriting the association bylaws and formulating a formal board structure using the ICAKUSA board as a template and the recruitment of likeminded people to fill the board roles.

One of the earliest boards consisted of:

President ..... Robert Peacock
Vice President ..... Keith Maitland
Secretary ..... Eric Pierotti
Treasurer ..... Ian Niven
Collected Papers ..... Braden Keil
Newsletter editor ..... Frank Marcellino
Sub Editor Newsletter ..... Victor Portelli
Seminars ..... Joe Krawec
Committee Members ..... Keith Keen, Andrea Bisaz

The decision was taken in 1988 to make the name change to the ICAK-A and forward our bylaws to the US and become an official chapter of ICAK, which was accepted making Australia the second official chapter after Europe. In 1987 Eric Pierotti was the first elected international representative to ICAK and travelled to Chicago in 1989 to represent the Australian interests at his own expense, at the now famous Super 25 meeting. He is still the Australasian representative and has not missed an international meeting since.

John Wittle and Tracy Gates, the former and next President of ICAK, enjoying the International Meeting in Cairns Australia, 2013.

By 1990, the association had grown on the strength of providing AK seminars as well as AK certification series taught by the new Diplomates on the block, Victor Portelli and Robert Peacock.

During this time Victor Portelli in collaboration with Frank Marcellino, were researching and developing their new *Visceral Biomechanics* techniques which have gone on to be lauded internationally. Robert Peacock's interest and expertise in clinical biochemistry saw him develop and teach his very successful Chiropractic Ecology seminars. Keith Maitland was no longer teaching a basic course. This left a rather large hiatus in terms of teaching of the basic course. There was of course a veritable smorgasbord of weekend seminars of all manner of topic from this very active group of Diplomates and other non-Diplomates busily developing techniques and protocols using AK methods.

This void was filled by Keith Keen who was awarded his diplomate in 2001 and took up the teaching mantle and worked tirelessly on providing the basics to hundreds of willing students single handedly for the next 6 years. Eric Pierotti in 2007 passed the exams and together with Susan Walker a couple of years later began to teach the basic course and together formed the so-called "Three Musketeers" teaching team. This was the first time in Australia that the basic course was taught using the very same manuals, PowerPoints and teaching aids and providing the exact same information so that if a student missed a session they could do a catch up at another time in another city. This has set a precedent for the rest of the world to follow. The trio is still working together sharing the load of basic courses all over Australia 10 years later. Trevor Chetcuti and Stephen Sassinis Shashan and Tracey Ladermann who look after Melbourne and Michael Hooker who now teaches in his homeland, New Zealand, have now more recently joined them.

Key players in the Australian chapter workingout

Donald McDowall presents Scott Cuthbert and his new AK textbooks, Cairns International Conference, 2013

Robert Peacock served 3 terms as President and was succeeded by Keith Maitland in 1991 and served to 1992.

Eric Pierotti was elected president in 1993 and held that position up to and including 2000 when Australasia became only the second chapter to host an International meeting outside of the US, after Munich in 1997.

He was succeeded by Richard Cheyne from New Zealand, Keith Keen and then Donald McDowall, who all served multiple terms with distinction and brought their own unique expertise and style to steer the board.

Our current president (2018) is Mary Papatheocharous who has held the position for 2 terms now and has brought a new freshness and direction to the board after serving as a committee member for some time.

The current board (2018) also includes Eric Pierotti, Vice President/ International Representative; Ara Amai, Registrar; Leesa Payne, Treasurer; Catherine Langford, Secretary; Andrew Powell, Newsletter Editor; Trevor Chetcuti, Graham Taylor, committee members.

The association now boasts 10 Diplomates (after the tragic passing of Robert Peacock, after a long illness), 8 of whom are certified teachers, and are held in very high regard by the AK community.

Australian AK Diplomates have always been actively involved in international affairs with Keith Keen and Donald McDowall working with the IBE for many years, Eric Pierotti has served on the IC since 1989 and was chairman for 9 years from 1999-2000, and 19 years and counting as Australasian international representative, IBE procedures chair, vice chair of the IEC, and chair of the Dispute Resolutions Committee. Trevor Chetcuti took over as chair of the IBORs in 2016 and is highly regarded for his work with research.

Australia has had the privilege of hosting 2 international meetings, the first in Sydney 2000, which is still considered a benchmark and a model for how an international meeting should be staged. The second in Cairns in 2013 was also a great success and ICAKA-A is proudly hosting their third in Brisbane in March 20-24, 2019.

Today, under the guidance of some new and enthusiastic young bulls and a few of the experienced old stagers that refuse to ride off into the sunset, the association has over 214 active members in a variety of categories, and include members from Japan, New Zealand and Hong Kong, They boast a healthy bank account and are providing the highest quality seminars with home-grown talent as well as hosting renown international speakers biannually.

Academic interest in AK became "official" for the first time internationally in 1977 when the ICC included AK in its Research and post-graduate programs. This interest may have resulted in a publication by Lines et al on neurolymphatic reflex treatment. [27] In 2006 the post-graduate section of the Chiropractic Division of the Health Sciences section of RMIT University in Melbourne Australia accepted the ICAK's International Board of Examiner's Diplomate as a suitable entry requirement for its Musculo Skeletal Management (Applied Kinesiology) degree. This program was launched at the Annual Conference of the ICAK in Vienna Austria on May 28, 2006. The RMIT University sees a strong future in supporting the direction that Applied Kinesiology is moving while recognizing the work of the ICAK as it teaches and examines new Diplomates. The positive outcomes for this program include the first support of a chiropractic specialty system in the chiropractic division of a government-sponsored University in the world. [28]

At one time AK methods had been taken up by approximately half of chiropractors in Australia. [29]

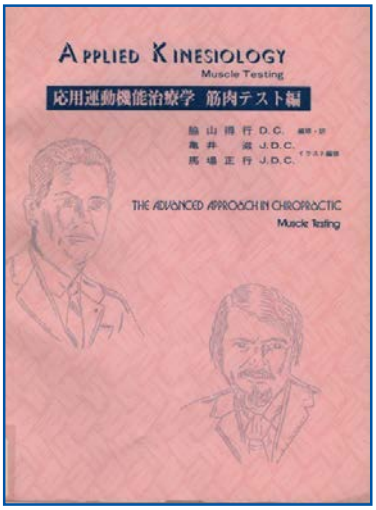
Australian delegates enjoy the Seoul, International Conference with Korean friends,2015

Applied Kinesiology in Japan

The Chukyo College of Chiropractic in Nagoya, Japan held the first International Post-Graduate Seminar in Japanese history, with Drs. Goodheart and Walther as lecturers. In 1982 the Chukyo College began technique courses between the college and Drs. Goodheart and Walther, and both were installed as Professors Emeritus. [2] Numerous teaching trips to Japan, Europe, Australia, Canada, and all over the United States were a part of Dr. Goodheart's and Walther's Applied Kinesiology peripatetic life for decades.

Victor Portelli and other AK Diplomates have travelled from Australia and Europe to teach the Japanese AK community over several years establishing an enthusiastic AK community in Japan.

The Goodhearts and Walthers take on Japan's sartorial splendor



Clive Lindley-Jones teaching a weekend seminar in Tokyo, Japan, 2013.

Applied Kinesiology in Korea

In early 1990, some chiropractors were invited to teach seminars for the medical physicians in Korea. Two of them were Rene Espy and Nancy McBride, who were Applied Kinesiologists who demonstrated manual muscle testing diagnosis and treatment, including joint manipulation. Mr. Hongmo Yang, who was a promoter of chiropractic and tried to legislate it in Korea, invited them to Korea a second time, but was not successful. Two of attendees of those seminars decided to enter Parker College of Chiropractic in the United States in 1994.

One of them was Dr. Seung-Won Lee, an orthopedic surgeon, and the other was Dr. Seung-Il Youn, an Oriental Medical Doctor. While at the Parker College they attended a 100- hour Applied Kinesiology course in Dallas TX in 1995, taught by Dr. Tom Rogowskey, a Diplomate of AK. They also attended the seminars of chiropractic neurology by Dr. Ted Carrick.

After graduation from the Parker College of Chiropractic, Dr. Seung-Il Youn had practiced chiropractic, Applied Kinesiology and Oriental medicine in Dallas, TX while attending AK, chiropractic neurology, and nutrition seminars. Dr. Seung-Won Lee had returned to Seoul Korea to open his clinic to practice a combination of chiropractic and medical approaches. They attended the AK seminars of Drs. Goodheart, Blaich, Schmitt, Leaf, Sprieser, and Lebowitz. In 1997, they became Diplomates of the American Chiropractic Neurology Board. Dr. Lee taught chiropractic neurology to Japanese chiropractors and Korean medical physicians for 4 years since 1998. Dr. Lee is also on the faculty of American College of Functional Neurology, a trainer in Neuro Linguistic Programming and Hypnosis since 2010. He is also an associate professor of the Carrick Institute (lecturer of functional neurology in Seoul and Tokyo), and an instructor at the medical college of Busan National University. Since 1997 he's been in private practice of a multi-disciplinary clinic (AK, functional neurology, orthopedics, functional medicine, NLP, and hypnosis) in Seoul, Korea.

In 2002, both of these doctors achieved Diplomate status with the ICAK (DIBAK) and had started to hold 100-hour essential courses in Applied Kinesiology for the first timein October 2002. At the first seminar ofAK, about 150 medical and Oriental medical physicians attended. This is

because many Korean physicians are interested in the field of complementary and alternative medicine. The attendees of these seminars were from various medical fields such as orthopedic surgeons, neurologists, neurosurgeons, rehabilitation physicians, anesthesiologists, familymedicine practitioners, oriental medical doctors, and chiropractors. ICAK-Korea has provided 100-hours courses of AK every year since 2003.

Drs. Lee, Youn, Chang-Sik In, and Jae-Woon Lee had translated Dr. Walther's synopsis into Korean, which was the first book of Applied Kinesiology published in Korea. The official members of ICAK-Korea had translated Dr. Goodheart's book "You'll Be Better: The Story of Applied Kinesiology" into Korean in 2009.

ICAK-Korea was founded in March of 2003, and Dr. Lee was elected as the president and Dr. Youn as the vice president. In 2004, at the ICAK-International Annual Meeting in Boston, ICAK-Korea was approved an official member of ICAK.In 2013, 6 doctors have achieved the DIBAK. Those are Jae-Won Jung, MD, Won- Bae Moon, MD, Se-Hyung Park, MD, Eun-Sang Ko, OMD, Soo-Young Choi, OMD, and Dong-Ha Baek, OMD. The seminars of AK have been enriched by the participation of these Diplomates. In January 2013, Dr. Lindley-Jones held the lecture regarding 'How to Unscramble Hidden mechanical problems with Applied Kinesiology' for the Korean physicians.

In 2014, ICAK-Korea had translated Dr. David Leaf 's textbook '*Applied Kinesiology Flow Chart*' into Korean.

In 2016, Dr. Scott Cuthbert presented AK at the Jangheung International Integrative Medicine Expo, the largest integrative medicine conference in the country, as well as at Kyung Hee University in Seoul.

Dr. Scott Cuthbert presented AK and was the sole chiropractic representative at the Jangheung International Integrative Medical Conference, 2016

The ICAK-Korean board welcomes Clive Lindley-Jones,2013

Applied Kinesiology in Canada

In Quebec, the history of Applied Kinesiology (AK) began in 1978, when Dr Georges Goodheart D.C. charmed the Canadians at its first conference in Montreal at the invitation of Dr Réal Choinière D.C. and Hervé Lafleur D.C..

AK's first 100-hour basic course was taught in Montreal in 1980. Invited by doctors Judith Houk DC and Gabriel Tassé DC, brothers Rod and Dan Gleason DC from Thunder Bay, officially Canada's first DIBAK, offered their knowledge during 2 years. They are the founders of the Canadian chapter of ICAK, which unfortunately will go out quickly in the shadows.

Richard Roy DC, was the first DIBAK in Quebec in 1980. He also participated in teaching a basic 100 hours course. It was in the Spring of 1982 that David Leaf DC presented himself at Spa Eastman, at the invitation of Réal Choinière DC. Already armed with his algorithmic diagrams, he charmed the audience, but especially Dr. Raymond Cyr DC, who became a faithful disciple, then a friend, and went on to organize for 28 years the seminars of Dr. Leaf DC in Montreal. For her part, Sharon Reid will be organizing Dr. Leaf's presence in Toronto for more than 10 years. A special word of thanks to Monique Chardonnault-Leaf DC, who supported those seminars for so many years. In Ontario, Dr. Emile Zmneck DC and Dr. George Milne DC, ND were among the first to get their DIBAK. Dr. Hans Boehnke DC, obtained his DIBAK in 1989, and taught the introduction to AK at the Canadian Memorial Chiropractic College for several years.

In those same years, a group of hard-working Ontarians met every month to share the knowledge they learned and applied in the past few weeks. These were Hans Boenke DC, DIBAK; John Thyret DC; Bill Dronyk DC, ND; Bob Dronyk DC, ND; Jim Crews DC; Rod Johnson DC, ND; John Schwarz DC; Cam Colquohoun DC, and John Millet DC.

In 1993, Gilles G. Brisson from Quebec and Cameron Colquhoun DC from Ontario had the same idea at the same time to structure the AK and revitalize ICAK-Canada, which no longer exists, without even knowing each other! This group of motivated doctors succeeded in pooling their efforts to formally re-establish the Canadian Chapter of Applied Kinesiology. He would be recognized by the ICAK in July 1994 in Chicago.

In 1994, a meeting at Château Frontenac welcomed Georges Goodheart and was a great success. At this point, the Canadian chapter of ICAK had a new start with more than 70 members and the regular publication of an information letter and research papers. The chapter has members from across Canada: Quebec, Ontario, Alberta, British Columbia, and New Brunswick.

The first board of directors of 1994 who worked hard to structure the AK:

- Gilles G. Brisson DC, President
- Pierre Deraîche DC, Vice-President
- Cameron Colquhoun DC, Secretary-Treasurer
- Free Members: Hans Boehnke DC, DIBAK; Brian Blower DC ; Jean-François Lafleur, DC; Michel Lefebvre DC
- Regional Representatives: Michel Lefebvre OC (Quebec); Jacques Bédard OC (Ontario); Nikhil Bair-Patel, DC (Ontario); Brian Blower DC (Center).

In 1996 a new meeting of ICAK-Canada took place in Saint-Sauveur, then in 1998 in Laval and in 1999 in Toronto. During the 2000s, David Leaf continued to teach several generations of doctors. In 2004 Dr. Chris Astill-Smith presented a series of functional biochemistry courses in Toronto.

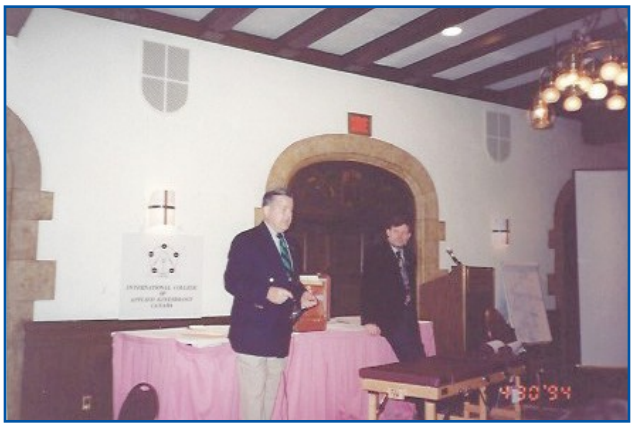
Divisions within the organization led to the withdrawal of Quebec from the Canadian chapter for five years between 2000 and 2005. 2005 is a pivotal year when Canada, supported by Quebec having reinstated the training, held an international meeting in Toronto. Dr. John Millet DC, hosted the event and was involved since 2000 in both the Canadian and international organization.

The same meeting of 2005 was a milestone in the teaching of AK in Quebec: Dr. Charles Héroux DC, the youngest chiropractor to obtain his DIBAK, began the following year teaching his first 100 hour basic course. Thirteen years later, he now teaches AK in several countries. A few years later, the rest of the «French connection», a group of motivated young chiropractors who would travel across America to gather relevant information and learn from the wise ones, also got their DIBAK. Of those, Anne-Eugénie Simard DC and Jean-Sébastien Bernier DC became teachers. New teachers have been constantly added: François Fortin DC, Sébastien Houle MSc, DC; Geneviève Gagné DC, and Frédéric Rancourt DC.

In 2011, Jayson Grossman DC, ND went to swell the ranks of the Ontario DIBAKs. With his great expertise in teaching, he managed to join both the ND and the DC, walking between British Columbia and Ontario.

In 2012 the ICAK-International Meeting was held in Montreal. Thanks to our close ties with many of the AK's greats, an impressive selection of guests were received on stage.

ICAK-Canada today has 98 members including 20 DIBAK and the first honorary DIBAK received in 2018 by Raymond Cyr DC.



Meeting in Château Frontenac 1993.

Meeting in Château Frontenac 1993.

ICAK International in Toronto 2005

Many generations of chiropractic doctors studying with David Leaf DC.

Charles Héroux DC and Sébastien Houle MSc, DC with their students

ICAK International 2012 in Montreal. Growing crowd of AK doctors !!!

Applied Kinesiology in Chiropractic

In early 1990, some chiropractors were invited to teach seminars. Convinced that he had been led to a discovery that belonged to the entire chiropractic profession, Goodheart sought to interest others in this form of diagnosis and treatment.

Goodheart's research was published yearly from 1964-1998 in research manuals, articles, chapters in books, monthly research tapes, and more. A bibliography of his published work is available from the *International College of Applied Kinesiology*, the organization Goodheart founded in 1976.[30] In his seminal work (1992), the chiropractic historian Dr. Joseph Keating [31] applauded the ICAK:

> **"Unfortunately few chiropractic membership organizations in the U.S. can claim to have been founded or to function primarily for scholarly or scientific purposes. (The Association for the History of Chiropractic (AHC) and the International College of Applied Kinesiology (ICAK) are exemplary of these few.)...There are few organizations of field doctors which can make a similar claim."**

Many members of ICAK have done great work to further the standing of chiropractic in the world, but perhaps no history of AK in Chiropractic would be complete without a mention of Dr. Kathy Conable.

Not only does she run a busy practice and is a professor at Logan University, Missouri, USA, teaching undergraduate chiropractic students, she is also one of the longest serving members, on all the boards, who has in the service of AK crisscrossed the world for so many years, to nearly all the International conferences, more recently as a long serving President of the International Board of Examiners.

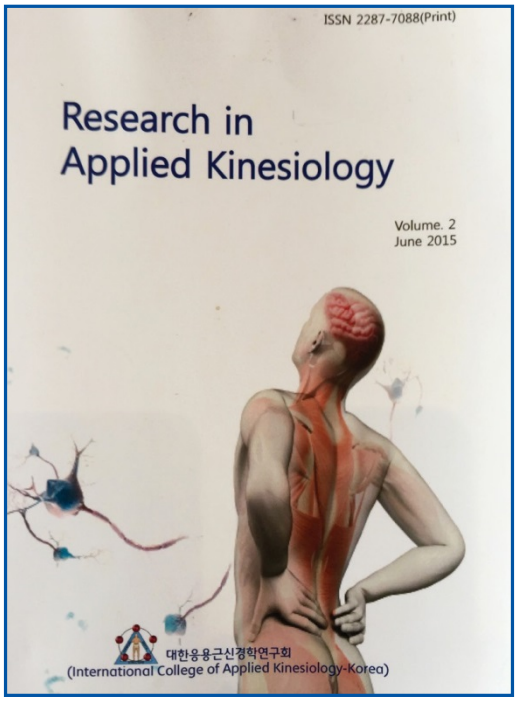
She brings both an intimate knowledge of the lived history of AK from its early days along with an academic's rigor, respect for details, good administration and sound practice.

Dr. Katherine Conable

ICAK Research

The first book to describe the value of AK to other professions -- "AK and the Stomatognathic System" -- was authored by Gelb, a dentist, and Goodheart in 1977. [32]

Goodheart set the peer-review trend for AK by publishing a discussion of dentistry and AK in 1976. [33] Scopp published the first research paper discussing the AK approach to a functional organic disorder with allergy testing in 1979. [34]

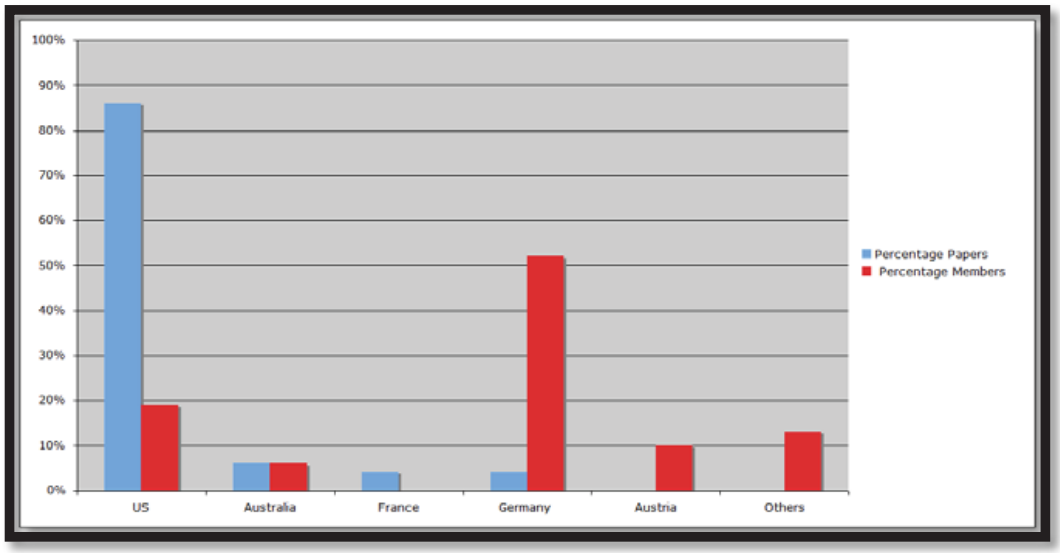


There are now over 100 papers published in peer-reviewed journals on the methods and outcomes of AK.[35-36] Few chiropractic therapeutic methods have been investigated or written about as extensively as AK. There have been 40 separate books published about AK methods since 1964.

In support of the ICAK's common purpose of increasing access to AK, and continuing further development, Dr. Goodheart encouraged all ICAK members to "promote research to show AK works…" This was always an important point for the leadership of ICAK, and Dr. Goodheart was very happy that within ICAK, there was an ongoing dedication of time and resources to research. This has been documented in the "AK Compendium of Research".[35]

The **Applied Kinesiology Research and Literature Compendium (AKRLC) 2018** provides a theoretic foundation for understanding the clinical mechanisms that link Applied Kinesiology manual muscle testing methods with human health and disease. The functional mechanisms of manual muscle testing are explored, and links between the status of the muscular and nervous systems are demonstrated.

Country	US	Australia	France	Germany	Austria	Total
No of Papers	43	3	2	2	0	50
Percentage	86%	6%	4%	4%		100%
No of Members	671	205		1826	335	3500
Percentage	19%	6%		52%	10%	87%



Percentage of quality research papers published according to ICAK Chapters

This enlarged edition of the AKRLC encompasses the following topics:

- Research supporting the reliability of the manual muscle test
- Research correlating MMT outcomes with other instruments measuring muscle function
- Research related to treatment effects using AK methods: clinical series and case reports
- Research studies examining the clinical relevance, predictive validity and accuracy of MMT
- Research support for therapy localization method in AK

The Compendium presents an exhaustive review of the research literature about AK's clinical methods in peer-reviewed scientific journals, that *summum bonum* of 21st century research validity. Publishing this research is a high priority as it helps protect the future of AK. These studies include research from chiropractic, biomedical, acupuncture, physiotherapy, nutritional, craniosacral and osteopathic literature and cover the diagnosis, treatment, reliability, and outcome measurements of AK methods. Applied Kinesiology's relevance to neuroimmunology, pediatric, and emotional health is also documented here.

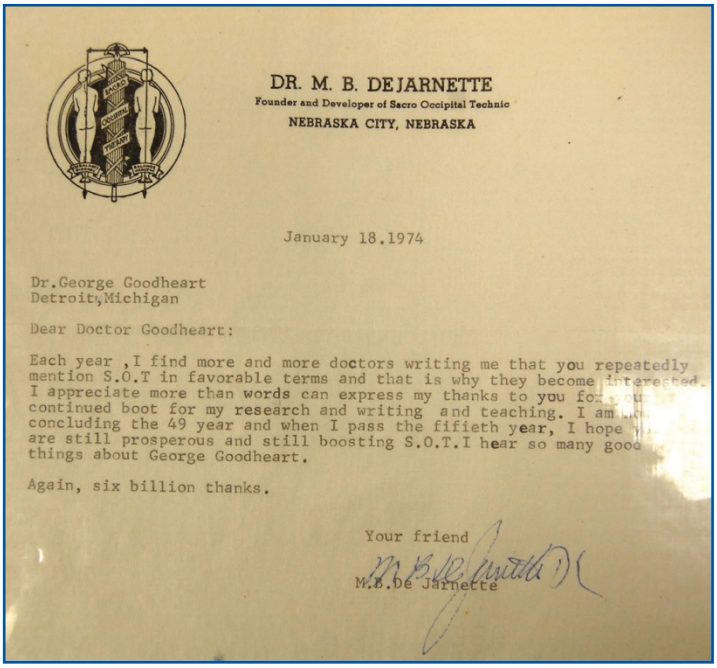
Applied Kinesiology methods now enjoy the highest public visibility and patient utilization rate in its history. [1] Part of its new status in the health care marketplace is the result of various studies demonstrating the effectiveness and patient satisfaction using AK, CAM, and chiropractic adjustment procedures in the management of pain, functional organic ("Type O") disorders, and improvement in quality of life for patients of all ages. The somatovisceral aspects of chiropractic and osteopathic treatment have often been given short shrift by the research community, and research papers included in the Applied Kinesiology Research and Literature Compendium show how Applied Kinesiology may make unique contributions to the general health of the public.

As AK professionals continue their emergence into mainstream health care and as the opportunity for multidisciplinary health care partnerships expand around the world, the importance of research exploring the role of Applied Kinesiology therapy in the management of spinal and systemic health disorders will increase. Understanding the published research allows us to grow, learn and modify our technique and diagnostic methods to match our discoveries and to stay current in the scientific community worldwide.

McDowall observed[28] that the great majority of methodologically useful AK Research papers (from 1974-2007) have come from the United States.

It is true that the evidence that supports Applied Kinesiology has some holes in it. However, the suggestion that Applied Kinesiology methodologies not be used because of these vacancies in the scientific support would be to deprive thousands of patients of their chance to heal. All of us use electricity and gravity even though we have gaps in our understanding of how they work.

Applied Kinesiology, when practiced by a physician who is adequately trained and with a mild degree of prudence, is virtually risk-free, and it possesses the potential for great help.



DR. M. B. DEJARNETTE
Founder and Developer of Sacro Occipital Technic
NEBRASKA CITY, NEBRASKA

January 18.1974

Dr.George Goodheart
Detroit,Michigan

Dear Doctor Goodheart:

Each year ,I find more and more doctors writing me that you repeatedly mention S.O.T in favorable terms and that is why they become interested. I appreciate more than words can express my thanks to you for your continued boot for my research and writing and teaching. I am concluding the 49 year and when I pass the fifieth year, I hope you are still prosperous and still boosting S.O.T.I hear so many good things about George Goodheart.

Again, six billion thanks.

Your friend
M.B.DeJarnette

Major Bertrand DeJarnette, DO, DC

After suffering a severe injury (an explosion), DeJarnette was treated by an osteopathy and later enrolled in the Dearborn College of Osteopathy in Elgin, Illinois. While there he met and studied with William Garner Sutherland, the founder of cranial osteopathy. After graduation he returned to his home state of Nebraska, where he received chiropractic care from the head of the Nebraska College of Chiropractic, and enrolled in this college as well, from which he graduated in 1924 at the age of 25.

Dr. Goodheart wrote and spoke about Dr. DeJarnette throughout his career with special admiration (particularly about DeJarnette's cranial, pelvic, and somato-autonomic- visceral discoveries) and called him a "five-star general" of chiropractic research. Dr. Goodheart's father was also a student of DeJarnette. The influence of both doctors upon the other's work is evident.

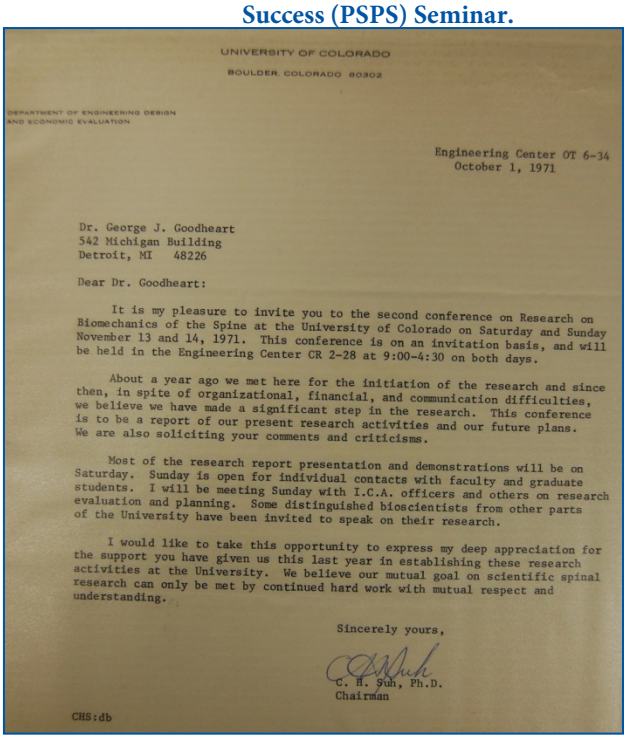
C.H. Suh, PhD

Dr. Suh has done essential research for the chiropractic profession and invited Dr. Goodheart to the second *Research on Biomechanics of the Spine* at the National Institutes of Health (NIH).

Drs. George J. Goodheart, Jr. and John Triano confer during the FCER's 1989 research conference. Triano was an editor of Walther's Applied Kinesiology Volume 1 textbook.

Major Bertrand DeJarnette, DO, DC
Founder of Sacro-Occipital Technique

Dr. George Goodheart gave his full Applied Kinesiology course at the 200th Parker School for Professional Success (PSPS) Seminar.



UNIVERSITY OF COLORADO
BOULDER, COLORADO 80302

DEPARTMENT OF ENGINEERING DESIGN AND ECONOMIC EVALUATION

Engineering Center OT 6-34
October 1, 1971

Dr. George J. Goodheart
542 Michigan Building
Detroit, MI 48226

Dear Dr. Goodheart:

It is my pleasure to invite you to the second conference on Research on Biomechanics of the Spine at the University of Colorado on Saturday and Sunday November 13 and 14, 1971. This conference is on an invitation basis, and will be held in the Engineering Center CR 2-28 at 9:00-4:30 on both days.

About a year ago we met here for the initiation of the research and since then, in spite of organizational, financial, and communication difficulties, we believe we have made a significant step in the research. This conference is to be a report of our present research activities and our future plans. We are also soliciting your comments and criticisms.

Most of the research report presentation and demonstrations will be on Saturday. Sunday is open for individual contacts with faculty and graduate students. I will be meeting Sunday with I.C.A. officers and others on research evaluation and planning. Some distinguished bioscientists from other parts of the University have been invited to speak on their research.

I would like to take this opportunity to express my deep appreciation for the support you have given us this last year in establishing these research activities at the University. We believe our mutual goal on scientific spinal research can only be met by continued hard work with mutual respect and understanding.

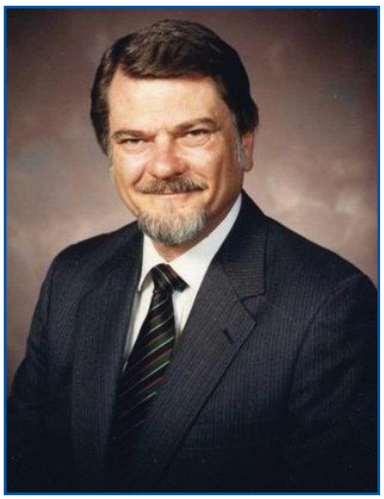
Sincerely yours,

C. H. Suh, Ph.D.
Chairman

CHS:db

Correspondence from Dr. Suh to Goodheart, 1971

David S. Walther, DC, DIBAK



David S. Walther, DC, DIBAK

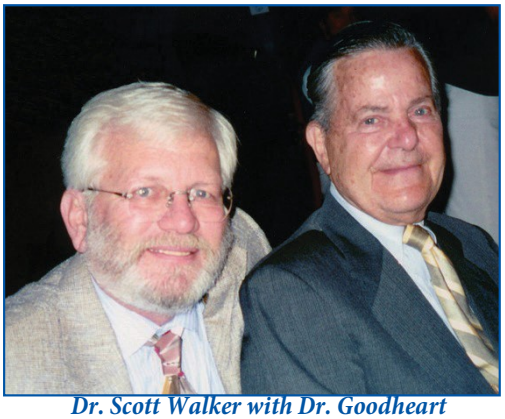
Dr. Walther wrote textbooks and teaching workbooks about Dr. Goodheart's research – these books have been purchased by over ½ of the chiropractic profession alone. [38] Walther subsequently created six textbooks and four chapters for other textbooks spanning numerous disciplines including AK and dentistry, AK and complementary and alternative medicine, as well as educational materials about AK for the general public. These textbooks have been translated into Italian, Japanese, Korean, French, German, and a Chinese translation of his Applied Kinesiology: Synopsis is underway. Walther also produced over 60 patient-education pamphlets covering separate clinical subjects that have been sold to clinicians for several decades. Walther is cited as the primary reference in hundreds of peer- reviewed articles on AK. [38]

Dr. Scott Walker

Dr. Scott Walker (founder of Neuro-Emotional Technique) considered Dr. Goodheart an essential resource. [39] Many variables influence pain behaviors and include the biological, physiological as well as the psychological. After several decades of clinical research by AK physicians, these factors appear to be interrelated and provide a basis for a holistic biopsychosocial approach to the management of pain in a patient-centered approach to care. It is only with the appropriate inclusion of mind-body approaches to management that the full impact of pain and disease may be addressed.[40]

A recent summary discusses the importance of **"The Goodheart Effect"** upon the chiropractic profession and principle: [41]

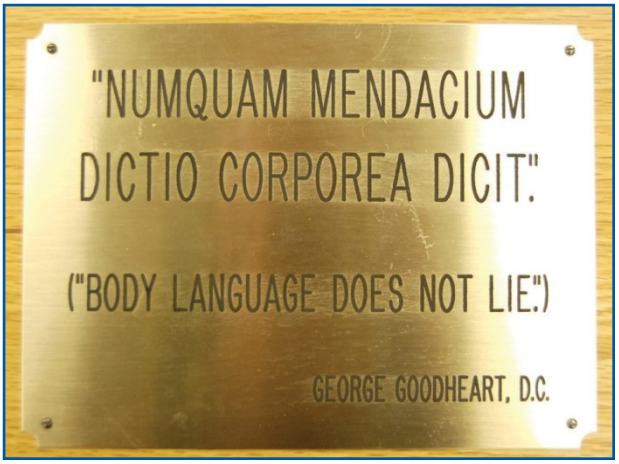
> *"Goodheart's AK technique offers an important diagnostic tool to supplement those already in place. In considering how acupuncturists focus upon meridians, physiotherapists upon rehabilitative exercise, naturopaths upon nutrition, and chiropractors themselves may in some instances devote their attention to the articulations, Applied*



Dr. Scott Walker with Dr. Goodheart

Kinesiology does not overrule the concept of subluxations but rather implies that subluxations may be attributed to areas in addition to the spine. This allows for an integrative model of chiropractic healthcare to be developed:

- It frees the profession from having to limit the concept of subluxations strictly to the spine or to joint aberrations.
- It helps to overcome popular conceptual limitations of chiropractors as merely practitioners who administer only high-velocity thrusts.
- It accommodates the application of physical modalities outside of the spine and, as such, invites closer collaborations of chiropractors with osteopaths, dentists, physiotherapists, massage therapists, physiatrists, and acupuncturists. By returning the focus to neurological imbalance, it immediately allows such major determinants of health as nutrition and stress to become integrated with the clinician's central tenet and message. No longer do nutrition and emotional elements appear as adjunct (and possibly alien) concepts which are difficult to rationalize with the more traditional chiropractic concepts of subluxation."



Goodheart Maxim posted in his clinic: "Body Language Does Not Lie"

Applied Kinesiology in Osteopathy

Osteopathy has been defined as "a comprehensive system of diagnosis and therapeutics based on the interrelationship of anatomy and physiology for the study, prevention and treatment of disease." Certainly, no system of diagnosis and treatment can be called comprehensive unless all the body is included.

Dr. Andrew Taylor Still (1828-1917) included the entire body in his thinking. He defined osteopathy as "a science and art including a knowledge of anatomy, physiology, biology, chemistry and pathology." Then he went on to say in his autobiography, "I expect to continue searching… where I find so much to interest me—in the brain of man with its... spinal cord and sets of nerves, branching off, completing the machinery which controls the telegraphy of life."

Dr. William Garner Sutherland (1873-1954) was an avid osteopathic student of Dr. Still and followed his lead. He further investigated the cranial and cranio-sacral areas, which were picked up by Dr. Goodheart's father (also an osteopath) and Dr. Goodheart himself, and this area of diagnosis and treatment has been deeply influential within Applied Kinesiology.

Osteopathy has had a different development outside the United States than inside.

While inside the United States the successful development of osteopathic medicine to gain a full medical license has paradoxically lead to its unique identity being blurred and obscured within the medical field, leaving chiropractic, albeit with a more tangential public orthodox status, holding the ground, once the province also of osteopathy. Within the mixed blessings of the embrace of osteopathy by orthodoxy, American osteopaths openness to or interest in Goodheart's new found Applied Kinesiology, coming as it did from the rival chiropractic camp, fell largely on stony ground within the American osteopathic profession. In the UK however, the osteopathic Diplomates, who stumbled upon AK at osteopathic post-graduate AK courses in the 1980's, have largely driven the growth of AK. By the 1960's the lure of wealth, status and position ensured all but the boldest US osteopaths turned from their manual medical roots in the face of the powerful mid-century allopathic (drugs and surgery) hegemony.

In the great majority of countries that osteopathy has developed in, beyond its home in the United States most osteopaths like chiropractors, work primarily in the realm of musculo-skeletal medicine, focusing most of their skills on non-surgical maladies of the neuro-musculo-skeletal system and do not usually have a full medical license, even if, as in the United Kingdom, they are like chiropractors, a closed, state registered profession.

Sadly for those who have gained so much clinically from its study, manual therapeutics is still a minority clinical interest within the United States osteopathic profession. Why this might be so, is unclear. However, all clinicians tend towards conservatism, more easily taking and learning from their peers, with more suspicion for systems outside their home domain. The historic distrust that arose between some osteopaths and chiropractors in the United States tended to spill over onto other lands too. The considerable journey of study required to fully master the vast range of Goodheart's scope of exploration, may also be a dissuading factor, along with a blurring of public and professional understanding of Professional Applied Kinesiology and other "Kinesiology" spin offs.

However, here we will focus on the advantages of integrating such ideas, rather than possible reasons for this still appealing to a minority.

Osteopaths are proud of their hard won palpatory skills. To develop the ability to distinguish between subtle variations of tissue texture and often obscure variations of motility of bony, organ or soft tissue structures is a skill that requires many years of earnest and daily application. This is a hard-won attribute, not easily neglected.

AK Enhances Diagnostic Tools and Scope of Osteopathy

AK offers the osteopath a wide variety of enhancements. First is that it offers an alternative means to evaluate and confirm palpatory diagnostic findings and for measuring the outcomes of therapeutic endeavor.

With the growth of Sutherland's ideas within osteopathy, a mild split grew up between those interested in and prepared to undergo the arduous journey of proficiency in palpating the Involuntary Mechanism of the craniosacral system, as outlined by Sutherland, and further developed by others, since his initial insights versus those who wanted to follow a more musculoskeletal model.

Sutherland's extremely subtle palpation left some wondering whether this was a case of operator's prejudice, and giving up on the whole idea of manipulation with the cranial mechanism from their frustration in trying to sufficiently master the subtle levels of palpation required to effectively master this approach. [42-43] This has left a rather barren argument within some quarters of osteopathy as to the validity of two sometimes opposing approaches, leading many osteopaths to see themselves in some way on one of two sides of a false dichotomy between so called 'structural' and 'cranial' approaches to treatment. Still's original insights and approach were themselves subtlety itself, which is why those who came after him had difficulty always conveying what "The old Master" had been trying to teach them.[44]

Enter Goodheart – unbeknownst to the great majority caught up in this false dichotomy, and his adaptation of the ideas from Sutherland and others -- to the new-found tools of challenge and therapy localization and the functional manual muscle test (fMMT) into diagnosis and treatment of the stomatognathic and craniosacral system.

With Goodheart's insights and techniques comes the refutation that the relationship of structure and function stops at the atlas vertebra. At the same time, while it may seem heretical to the adherents to Sutherland's subtle

approach to diagnosis, Goodheart's novel insights open up the whole cranial field to other ways of diagnosis and treatment using his tools of challenge, therapy localization and the fMMT.

It can be readily shown – using the AK approach to cranial osteopathic diagnosis – that muscular dysfunctions as far away from the head as the feet are immediately responsive to cranial treatment. For instance it is frequently demonstrated by AK cranial practice that functional compression of the vagus nerve (at its exit from the skull at the occipito-mastoid suture) will produce a host of vagal symptoms throughout the body. Reproducible patterns of stomach-related muscle inhibition (the pectoralis major-clavicular division) will be found which immediately respond to the proper cranial treatment at the occipito-mastoid suture. AK permits the assessment of the dynamic inter-relationships between a patient's digestive, endocrine, immune, and hepato-biliary systems by isolating and testing their associated external muscle groups that immediately respond to "cranial challenges" at the foramen of the vagus nerve.

For the clinician struggling with micro-disturbances in the cranio-sacral mechanism, once the methods of AK cranial diagnosis are mastered, the whole field opens up and the division, so vehemently argued about in osteopathic circles, dissolves into irrelevance.

An important example of a world-famous osteopath explicitly influenced by Dr. Goodheart and AK is Dr. Leon Chaitow. Before his recent death, Dr. Chaitow was a practicing osteopath, naturopath and acupuncturist in the United Kingdom with over forty years clinical experience, as well as Editor-in-Chief of the *Journal of Bodywork and Movement Therapies* (The official journal of the *International College of Applied Kinesiology*).

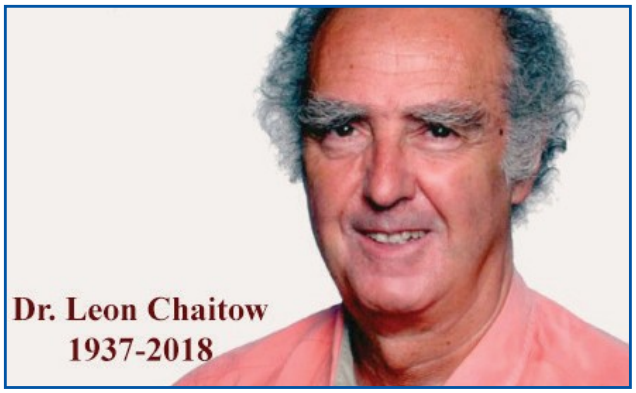
In Chaitow's books, Goodheart's and Applied Kinesiology's methods are seen as precursors to a "universal manipulative approach" that Chaitow suggests will cross professional boundaries and offer the safest and most versatile methodology for the treatment of patients with acute and chronic illness.

In at least 5 of Dr. Chaitow's books the work of Goodheart and Applied Kinesiology is presented and praised.

- Clinical Application of Neuromuscular Techniques, Volume 1, 2nd Edition: The Upper Body **(2008)**
- Naturopathic Physical Medicine **(2008)**
- Cranial Manipulation: Theory and Practice, 2nd Edition: Osseous and Soft Tissue Approaches **(2005)**
- Clinical Application of Neuromuscular Techniques, Volume 2:The Lower Body, 2nd Ed. **(2002)**
- Soft-Tissue Manipulation **(1988)**

Dr. Chaitow was also invited to lecture to the ICAK USA in Detroit, 8 months before Dr. Goodheart passed in 2008.

Perhaps the greatest usefulness of AK diagnosis is in the area of subtle mechanical disturbance. With the insight of the 'Body into distortion' idea, Goodheart opened up



Dr. Leon Chaitow

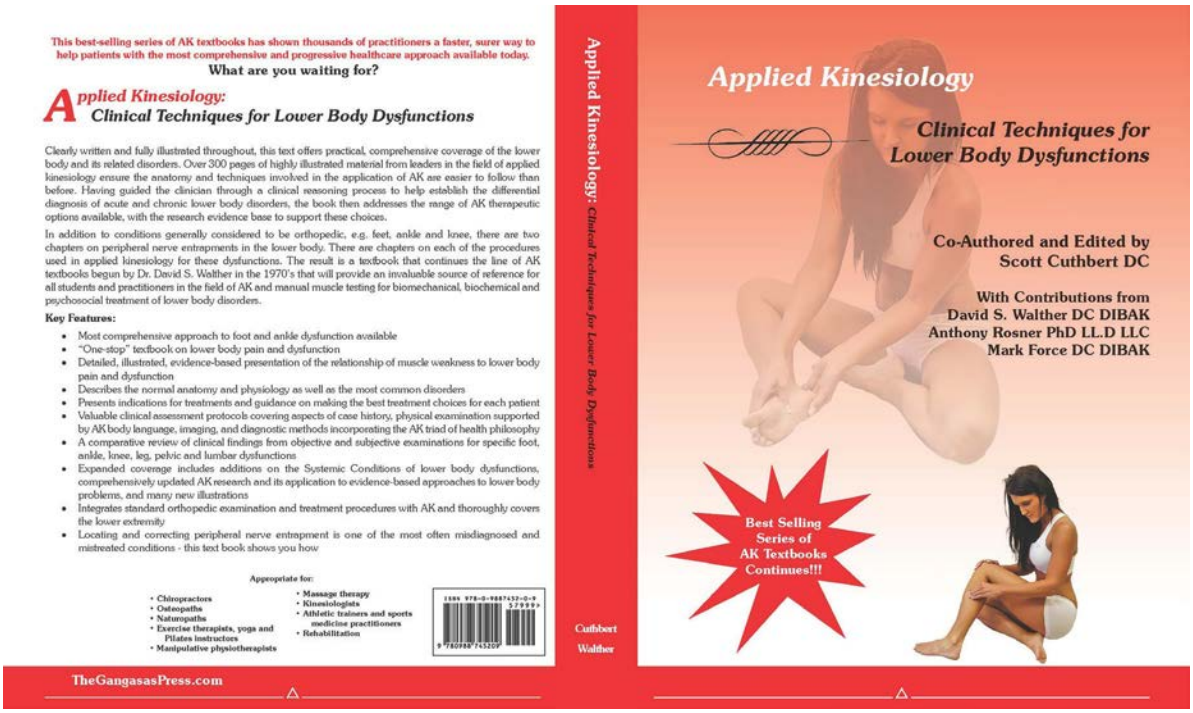
the common sense idea that patients do not always display their signs and symptoms conveniently for us, while lying comfortably supine on a treatment table, but rather must sometimes be placed into a more challenging position to reveal their patterns of dysfunction. Nowhere is this more obvious than in the field of hidden nerve entrapment. Hidden in the sense that they are often subtle and inaccessible to instant diagnosis – except with the use of the MMT.

Peripheral nerve entrapment was introduced into Applied Kinesiology in Goodheart's discussions of the carpal tunnel **(1967)** and tarsal tunnel syndromes. [30] **(1971)** Walther's early review of peripheral nerve entrapment in 1982 broadened the subject in Applied Kinesiology, and served as an outline for a comprehensive AK textbook on this subject, with over 200 pages covering peripheral nerve entrapments of the lower body. In this text standard orthopedic examination and treatment procedures are integrated with AK and thoroughly cover the lower extremity. [45]

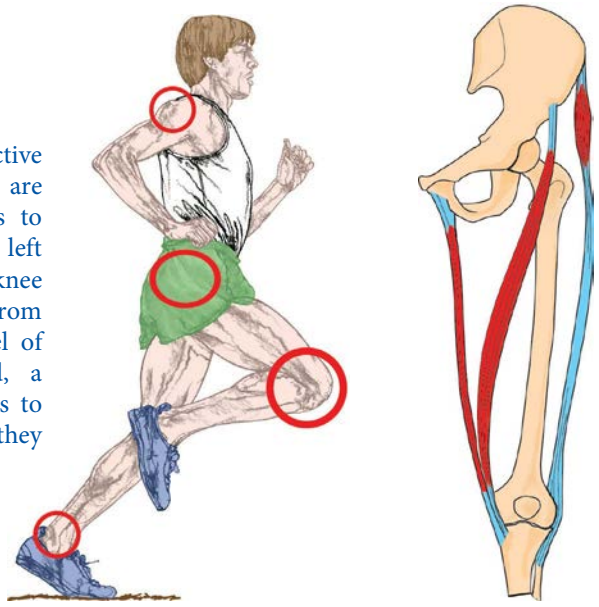
Cranial nerve entrapment syndromes, treated with Applied Kinesiology methods, have also been discussed in the recent peer-reviewed literature. [46] Since muscular weakness found in routine Applied Kinesiology examination may be due to peripheral nerve entrapment, it is particularly important that the physician be aware of and able to differentially diagnose different types of the condition. Failure to return muscle weakness to normal function may result from undetected peripheral nerve entrapment. Because applied kinesiologists routinely test muscles to evaluate function, it is not uncommon to come across the more subtle types of peripheral nerve entrapment. Subtle entrapment may cause major symptoms to the patient that interfere with normal function and create remote problems.

MMT offers newfound precision to clinical examination by uncovering what is often hidden from view if palpation alone is used, and that is the dynamic evaluation of muscle function and its effect on structures that must pass through areas of nerve entrapment or irritations.

Goodheart's insights into the extraordinary potential power of the MMT to uncover hidden dysfunction and link it to a wider vision of the whole, through the potential of AK to see the broader picture, the delicate richness of potential overlap and interpenetration in the triad of health, gives the clinician a new found access to the holism, often aspired to but less often truly accessed without AK.



***Applied Kinesiology: Clinical Techniques for Lower Body Dysfunctions* covers the AK approach to peripheral nerve entrapments like never before**



To perceive and then to verify through accurate and objective dynamic assessment the way in which structures such as the knee are highly dependent on full normotonic muscle function, leads to uncovering a treasure trove of discrete malfunction that, if left unresolved, may set up the body for later breakdown. Many knee problems are the direct result of improper support to the knee from the muscles that attach above and below it. Without the level of sophistication in application of MMT that Goodheart introduced, a myriad of hidden factors are going to be missed. AK attempts to identify these altered states of integrative function insofar as they impact on the person's condition.

Applied Kinesiology in Functional Medicine

The majority of doctors in the healing arts have directed their attention toward pathology and trauma which are demonstrated by significant abnormalities observed in the laboratory, on X-ray, and by standard physical diagnosis. The great strides that have been made in these fields are commendable, yet there remains the patient who complains of headaches, chest pain, or joint disturbance – among numerous other "lifestyle" or "stress-related" symptoms – but who is pronounced "healthy" after a thorough diagnostic workup. These subjective symptoms are often diagnosed as psychosomatic or frankly ignored because no objective findings are present. Limited diagnostic procedures in modern general medicine cause the physician to only occasionally be able to evaluate the cause of these symptoms.

There is frequently an absence of laboratory findings because these conditions are usually functional rather than pathological. Although it has been difficult to evaluate this type of condition in the past, systems of diagnosis for these functional patterns of body malfunction have arisen. Applied Kinesiology has been picked up and used by more and more medical doctors around the world because it enables physicians to find the basic underlying cause of these previously enigmatic symptom complexes about which a large percentage of the population complains.

Most illnesses in industrialized societies are due to functional rather than pathological processes; most pathological illnesses are preceded by a chronic period of functional illness. Health is not an accident; it is the outcome of the interaction of an individual's genetic constitution and environment. Many people "get by" throughout their lives without optimal organic or biomechanical function and yet remain asymptomatic. This may depend on the goddess Fortune as well as the world-view and impulses of the person in addition to their inherited characteristics, nutritional status, psychosocial factors, life history and more – in other words, the entire context within which the Applied Kinesiology triad of health is experienced and embraced. If one of the objectives of work in this field is to prevent illness and ameliorate the burdens of the living patient and to help them realize their full potential, then what has been discussed in this chapter will become a part of the health care approach physicians and knowledgeable patients around the world embrace.

From the beginnings of Applied Kinesiology, practitioners have observed an association between muscle-joint function and visceral-autonomic dysfunction. It is exciting to see accumulating research and developing models from a wide range of academicians and clinicians converging toward concurrence with the field of Applied Kinesiology. This development will, ideally, lead to more coordination with physicians from other fields and backgrounds to work synergistically with clinicians utilizing Applied Kinesiology methods in the treatment of patients with functional illnesses. In fact, it was Dr. Astill- Smith who invited Dr. Jeffrey Bland, the father of Functional Medicine, to an early AK/Functional medicine seminar in Bath, UK in the early '90's after which Astill-Smith was invited to present AK to the first International Conference of the Institute of Functional Medicine in America.

Evidence-based medicine, basic science and clinical outcomes data now exists to support the assessment and treatment (frequently co-treatment with other specialist physicians) for patients with disorders of the nervous, autonomic, neurohormonal, immune, respiratory, circulatory, and lymphatic systems using Applied Kinesiology methods. The objective of this work is to prevent illness, ameliorate suffering, and to help patients reach their full potential.

Janet Travell, MD

Myofascial trigger point (MTrP) weakness occurs when a muscle cannot fully activate all of its contractile fibers because of the presence of a trigger point. The importance of this observation, that motor dysfunction and particularly muscle inhibition are present in muscles housing MTrPs cannot be over-estimated. The weakness results from reflex motor inhibition and may occur without atrophy of the affected muscle, emphasizing Travell's insight that the MTrP is directly influenced by the CNS and vice versa. A few investigators have reported on the effects of MTrPs on muscle activity using newer online computer analysis of EMG amplitudes. These reports indicate that MTrPs not only influence the muscle in which they reside, but that their influence can be transmitted through the CNS to other muscles. [47] According to Simons and Travell "the motor effects of MTrPs may be the most important influence they exert, because the motor dysfunction they produce may result in overload of other muscles and spread the MTrP problem from muscle to muscle."

Critically important is that according to Travell and Simons, *an active trigger point will inhibit the function of the muscle in which it is housed as well as those which lie in its target zone of referral.* [47] Therefore the weak muscle may be where the MTrP resides or in a muscle which experiences referred pain from the MTrP, or both. "Although weakness is generally characteristic of a muscle with active myofascial trigger points, the magnitude is variable from muscle to muscle, and from subject to subject. EMG studies indicate that, in muscles with active myofascial trigger points, the muscle starts out fatigued, then fatigues more rapidly, and finally becomes exhausted sooner than normal muscles." [48]

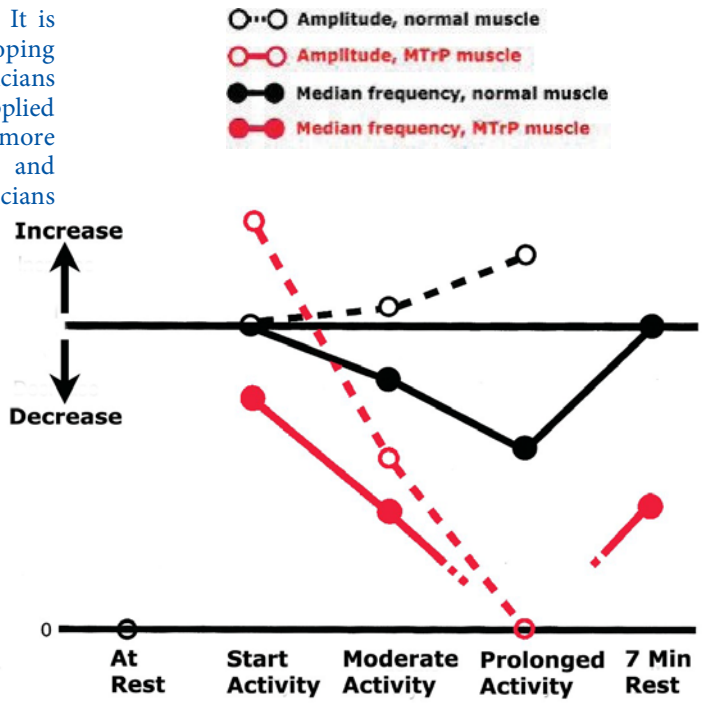
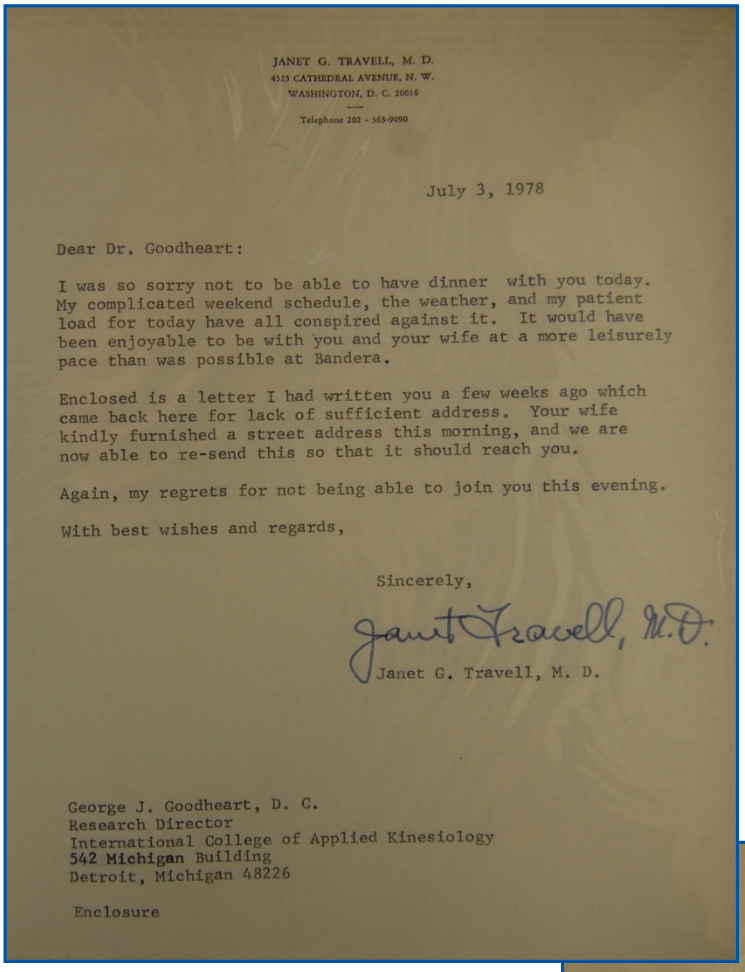


Figure 2.3. Comparison of surface electromyographic response to fatiguing exercise of normal muscle (*black lines*) and muscle with active myofascial trigger points (*red lines*). The averaged amplitude (*open circles*) and mean power frequency (*solid circles*) of the electromyographic record from the muscle with trigger points start out as if the muscle is already fatigued and show that the muscle reaches exhaustion more quickly (and is slower to recover) than normal muscle. These changes are accompanied by accelerated fatigue and weakness of the muscle with trigger points.

Figure above illustrates schematically the EMG changes observed in exercised muscles with TrPs. The involved muscle shows a degree of fatigue at the beginning of a repetitive task, with accelerated fatigability and delayed recovery. These features are hallmarks of the motor dysfunction of muscles containing MTrPs. Using electromyographic evidence **(Simons, 1993)** has shown that myofascial trigger points *"cause reflex spasm and reflex inhibition in other muscles, and can cause motor incoordination in the muscles with the trigger point."*



JANET G. TRAVELL, M. D.
4323 CATHEDRAL AVENUE, N. W.
WASHINGTON, D. C. 20016
Telephone 202 - 363-9090

July 3, 1978

Dear Dr. Goodheart:

I was so sorry not to be able to have dinner with you today. My complicated weekend schedule, the weather, and my patient load for today have all conspired against it. It would have been enjoyable to be with you and your wife at a more leisurely pace than was possible at Bandera.

Enclosed is a letter I had written you a few weeks ago which came back here for lack of sufficient address. Your wife kindly furnished a street address this morning, and we are now able to re-send this so that it should reach you.

Again, my regrets for not being able to join you this evening.

With best wishes and regards,

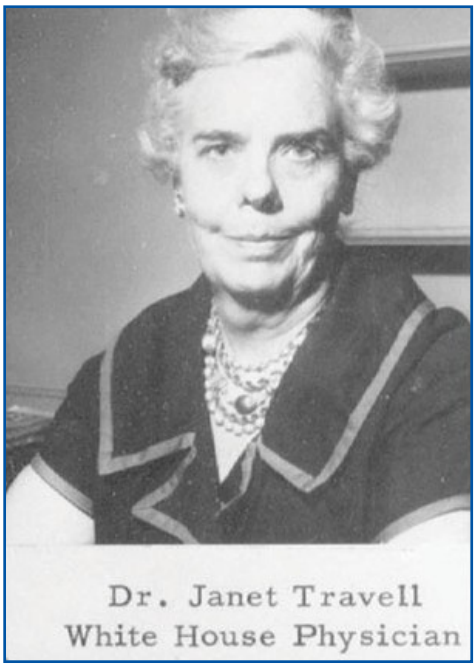
Sincerely,

Janet Travell, M.D.

Janet G. Travell, M. D.

George J. Goodheart, D. C.
Research Director
International College of Applied Kinesiology
542 Michigan Building
Detroit, Michigan 48226

Enclosure



Dr. Janet Travell
White House Physician

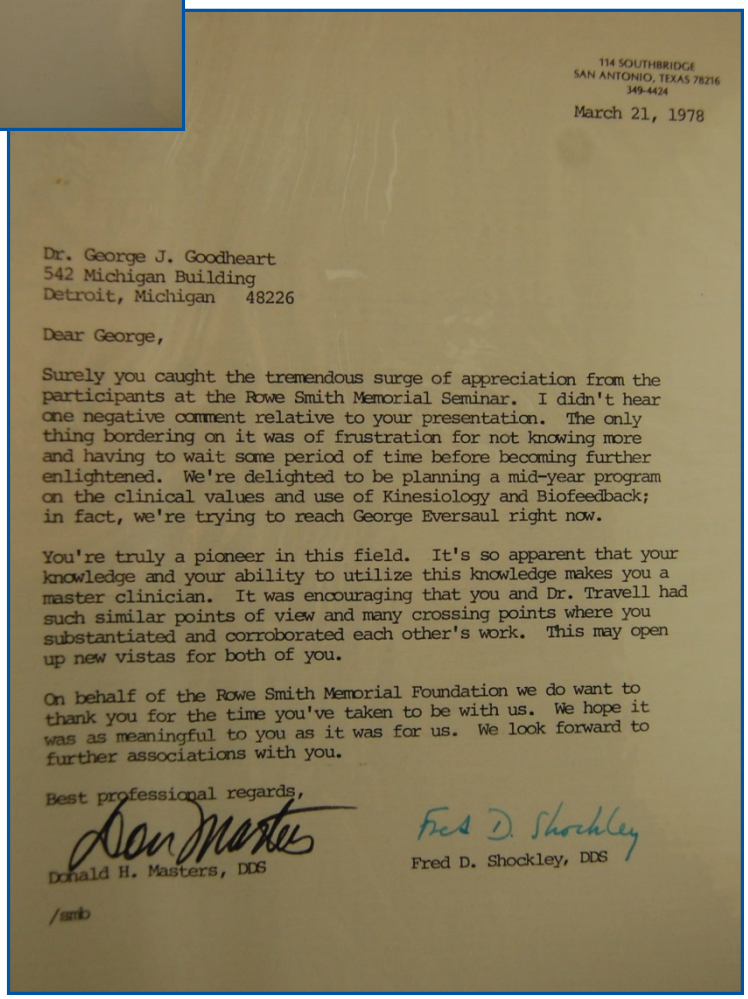
Simons et al [47] also suggest that the weakness resulting from MTrPs must be evaluated both statically and dynamically, confirming the suggestion of Goodheart for the diagnosis of MTrPs in AK, the "muscle stretch reaction".

Dr. Goodheart was a speaker with Dr. Travell at the Smith-Rowe Memorial Seminar in San Antonio Texas in March 1978.

In the Rowe Smith seminar both Drs. Travell and Goodheart faced a patient with temporomandibular disorder. The patient could open their mouth on a very limited basis. Dr. Travell treated the patient and helped him with pain reduction and mouth-opening, but the patient's mouth was still somewhat painful on opening and limited in ROM. Dr. Goodheart then treated the patient; after his assessment and treatment, the patient could open their mouth fully and without pain.

Dr. Travell and Goodheart were then given enthusiastic applause from the crowd, with Dr. Travell offering a curtsy to Dr. Goodheart and Goodheart returning a curtsy to Dr. Travell.

Dr. Travell told the audience (mostly dentists) that Dr. Goodheart had found another method for the diagnosis of myofascial trigger points in muscles using the Applied Kinesiology manual muscle test method.



114 SOUTHBRIDGE
SAN ANTONIO, TEXAS 78216
349-4424

March 21, 1978

Dr. George J. Goodheart
542 Michigan Building
Detroit, Michigan 48226

Dear George,

Surely you caught the tremendous surge of appreciation from the participants at the Rowe Smith Memorial Seminar. I didn't hear one negative comment relative to your presentation. The only thing bordering on it was of frustration for not knowing more and having to wait some period of time before becoming further enlightened. We're delighted to be planning a mid-year program on the clinical values and use of Kinesiology and Biofeedback; in fact, we're trying to reach George Eversaul right now.

You're truly a pioneer in this field. It's so apparent that your knowledge and your ability to utilize this knowledge makes you a master clinician. It was encouraging that you and Dr. Travell had such similar points of view and many crossing points where you substantiated and corroborated each other's work. This may open up new vistas for both of you.

On behalf of the Rowe Smith Memorial Foundation we do want to thank you for the time you've taken to be with us. We hope it was as meaningful to you as it was for us. We look forward to further associations with you.

Best professional regards,

Don Masters

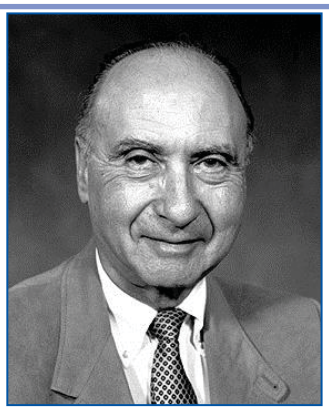
Donald H. Masters, DDS

Fred D. Shockley

Fred D. Shockley, DDS

/smb

Abram Hoffer, MD, PhD



Father of Orthomolecular Medicine

(Letter to Dr. Goodheart)

1201 CN TOWERS • FIRST AVENUE SOUTH • SASKATOON, SASKATCHEWAN, S7K 1J5 • TELEPHONE (306) 653-4933

A. HOFFER, M.D., PH.D.

June 10, 1974

Dr. G.J. Goodheart
DC 542 Michigan Building
DETROIT, Michigan 48226

Dear Dr. Goodheart:

Many thanks for letting me see the material that you have written and also for letting me have, on loan, a copy of the article from Science which I have now reproduced for myself. I therefore return to you the Science reprint. It so happens that I do know Dr. Morley Kare personally having met him several years ago and Ihave also seen that that he has written. It was a very good study indeed.

I was very pleased to meet you and to realize that you have been so interested in this work for such a long time and I do think that the contribution that you have made is a good one and may be extremely significant in helping us treat our patients.

Best regards,

A. Hoffer, M.D., Ph.D.

AH:slc
Enc.

Emanuel Cheraskin, MD, DMD

(Letter to Dr. Goodheart)

the University of Alabama in Birmingham / UNIVERSITY STATION / BIRMINGHAM, ALABAMA 35294
the Medical Center / SCHOOL OF DENTISTRY

4 August 1976

Doctor George J. Goodheart, Jr.
542 Michigan Building
Detroit, Michigan 48226

Dear George:

It was indeed a pleasure of meeting you in Pasadena. I regret only that time did not allow more leisurely conversation. Because of your obvious interest and activities, you will note enclosed a current file of reprints and an updated curriculum vitae along with other materials. I call your particular attention to the just released paperback version of PSYCHODIETETICS. We think that this should serve the chiropractic physician well. Additionally, it is an excellent and simple accounting of the tenor and philosophy of our program.

I trust that one day soon our paths may cross. In the meanwhile, my very personal regards.

Sincerely,

Cheraskin

E. Cheraskin, M.D., D.M.D.
Department of Oral Medicine

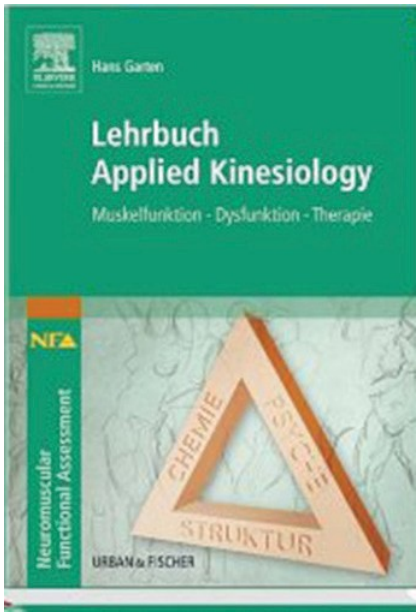
Ec/bf

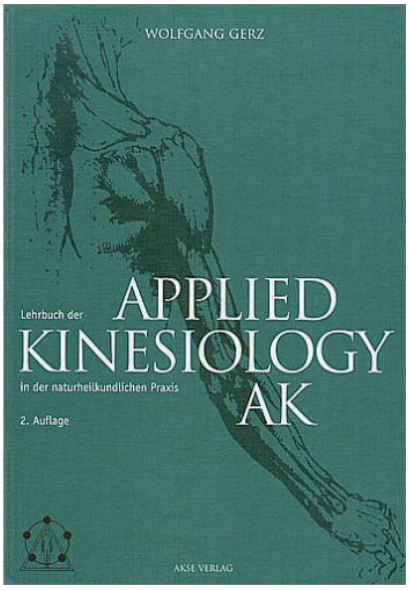
Enclosures

AN AFFIRMATIVE ACTION / EQUAL OPPORTUNITY EMPLOYER

Hans Garten MD & Wolfgang Gerz MD

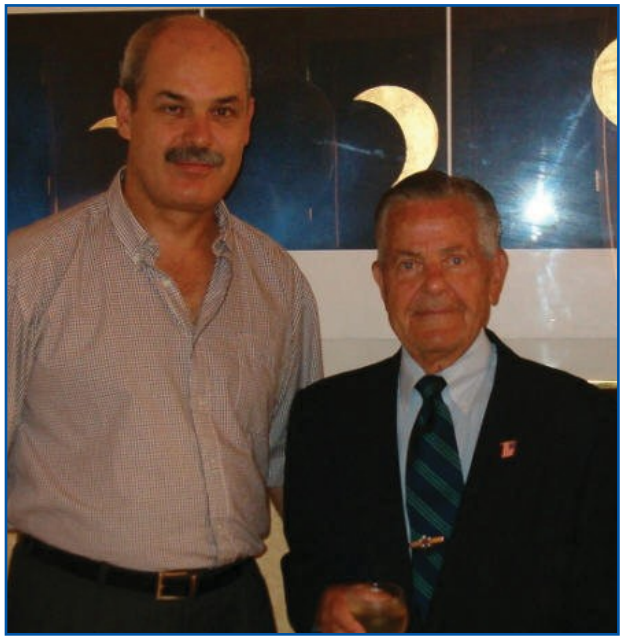
Hans Garten, MD and Wolfgang Gerz, MD have both written textbooks on Applied Kinesiology (in German) for manual medicine students in Europe.[17-20, 22-24]





Jose Palomar, MD

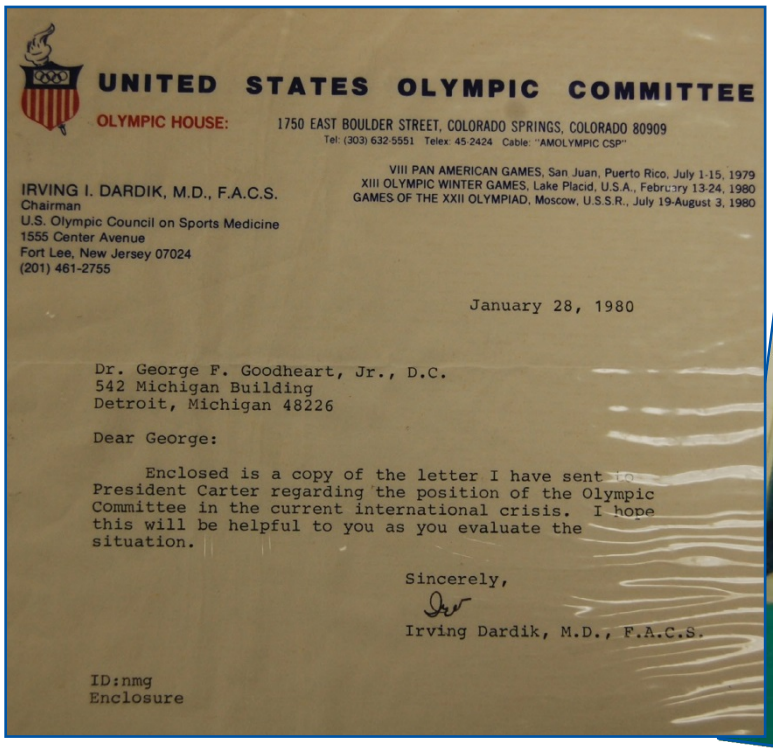
The method of Proprioceptive-Deep Tendon Reflex (P-DTR) was found and developed by Dr. Jose Palomar and has been successfully used in clinical practice for several years. It's evidence-base is growing as are its published outcome studies.[49] Dr. Palomar created a unique system of neurological provocations and discovered rules about how the CNS reacts to particular stimuli – both functionally and dysfunctionally. Those types of manual effects (stimulus) can be produced in a form of light swiping (to stimulate the receptors of touch), stretching (to stimulate Golgi receptors), deep pressure (Paccini) and many more. Today PDTR works with most of the exteroceptors, interoceptors and proprioceptors.



Drs. Palomar and Goodheart

Applied Kinesiology in Olympic & Professional Sports

Dr. Goodheart was invited as the first chiropractor to be part of the U.S. Olympic Sports Medicine Committee. The first official appointment of a chiropractor to the US team began with the 1980 Winter Olympic Games in Lake Placid, when Dr. George J. Goodheart, Jr's name was given to Irving Dardik, MD (then chairman of the United States Olympic Committee (USOC) Sports Medicine Committee) by Dr. Stephen J. Press.[50] Dr. Goodheart treated some 15 athletes and "their response to treatment was great. Some of the ski-jumpers moved up four places after treatment, although I grant that might have happened regardless," as Dr. Goodheart modestly pointed out.



UNITED STATES OLYMPIC COMMITTEE

OLYMPIC HOUSE: 1750 EAST BOULDER STREET, COLORADO SPRINGS, COLORADO 80909
Tel: (303) 632-5551 Telex: 45-2424 Cable: "AMOLYMPIC CSP"

VIII PAN AMERICAN GAMES, San Juan, Puerto Rico, July 1-15, 1979
XIII OLYMPIC WINTER GAMES, Lake Placid, U.S.A., February 13-24, 1980
GAMES OF THE XXII OLYMPIAD, Moscow, U.S.S.R., July 19-August 3, 1980

IRVING I. DARDIK, M.D., F.A.C.S.
Chairman
U.S. Olympic Council on Sports Medicine
1555 Center Avenue
Fort Lee, New Jersey 07024
(201) 461-2755

January 28, 1980

Dr. George F. Goodheart, Jr., D.C.
542 Michigan Building
Detroit, Michigan 48226

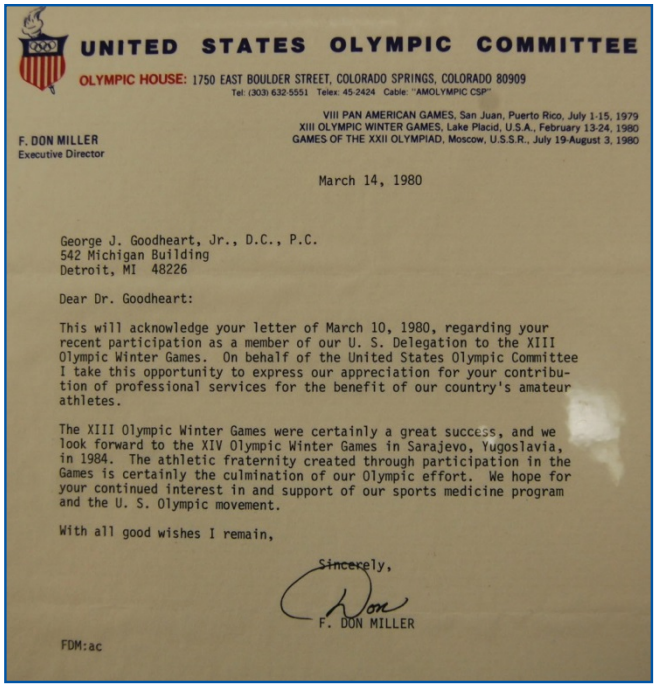
Dear George:

Enclosed is a copy of the letter I have sent to President Carter regarding the position of the Olympic Committee in the current international crisis. I hope this will be helpful to you as you evaluate the situation.

Sincerely,

Irving Dardik, M.D., F.A.C.S.

ID:nmg
Enclosure



UNITED STATES OLYMPIC COMMITTEE

OLYMPIC HOUSE: 1750 EAST BOULDER STREET, COLORADO SPRINGS, COLORADO 80909
Tel: (303) 632-5551 Telex: 45-2424 Cable: "AMOLYMPIC CSP"

VIII PAN AMERICAN GAMES, San Juan, Puerto Rico, July 1-15, 1979
XIII OLYMPIC WINTER GAMES, Lake Placid, U.S.A., February 13-24, 1980
GAMES OF THE XXII OLYMPIAD, Moscow, U.S.S.R., July 19-August 3, 1980

F. DON MILLER
Executive Director

March 14, 1980

George J. Goodheart, Jr., D.C., P.C.
542 Michigan Building
Detroit, MI 48226

Dear Dr. Goodheart:

This will acknowledge your letter of March 10, 1980, regarding your recent participation as a member of our U. S. Delegation to the XIII Olympic Winter Games. On behalf of the United States Olympic Committee I take this opportunity to express our appreciation for your contribution of professional services for the benefit of our country's amateur athletes.

The XIII Olympic Winter Games were certainly a great success, and we look forward to the XIV Olympic Winter Games in Sarajevo, Yugoslavia, in 1984. The athletic fraternity created through participation in the Games is certainly the culmination of our Olympic effort. We hope for your continued interest in and support of our sports medicine program and the U. S. Olympic movement.

With all good wishes I remain,

Sincerely,

F. DON MILLER

FDM:ac

DC RECEIVES OLYMPIC APPOINTMENT

Dr Goodheart

Dr George Goodheart, Detroit chiropractic educator, has been appointed to the Commission on Sports Medicine Modalities of the US Olympic Council on Sports Medicine.

The announcement, following Dr Goodheart's attendance at a commission meeting, January 4, was made by Dr Irving I. Dardik, chairman of the sports medicine council. Other members of the commission, in addition to Dardik as chairman, are Drs Murray Goldstein, Peter Jokl, Ronald Lawrence and Bertram Zarins, all MDs.

Dr Goodheart is the **first** DC to hold a position on the policy-making bodies of the Olympic Committee. Dr Dardik announced that the commission will seek two additional DCs through interviews.

Dr Goodheart, an ACA member, is presently a director of the National Chiropractic Mutual Insurance Company (NCMIC).

Speaking of his appointment, Dr Goodheart said: "I welcome the opportunity to provide chiropractic services to our Olympic athletes. The addition of chiropractic services by the Olympic sports medicine council will doubly serve our national athletes. Many people have contributed to this healthy situation and, since the athletes deserve the best of all types of health care, all the health professions can contribute to their well being and maximum performance. Chiropractic is uniquely related to the nervous system and the musculoskeletal system and can provide therapeutic and preventative support as well as improved performance potentials."

Dr Goodheart's appointment is the end result of negotiations with the Olympic sports council to include chiropractic care in treatment of US Olympic athletes.

The second meeting of the commission was held in Boston on February 29, and the third will be in Colorado Springs, April 6. □

The ACA Journal of Chiropractic/March 1980

Goodheart felt the inclusion of a chiropractor on the Olympic Medical Staff was a must. "I think it's an important thing. Chiropractic is uniquely related to the nervous system and the musculoskeletal system and can provide therapeutic and preventative support, as well as improved performance potentials." The efforts of Dr. Goodheart and the chiropractors who followed after him have played an essential part in the success of the United States' Olympic athletes, helping the US win more than 1,000 medals since 1980, including 467 gold medals.

Dr. Goodheart was an invited speaker at the USOC's "Conference on Biomechanics and Kinesiology in Sports" four years later (1984), and was elected a member of the American College of Sports Medicine the same year.

The historic importance of the appointment of Dr. Goodheart to the Olympic Team in Lake Placid in 1980 was emphasized in the journal ***Chiropractic History***:

> "Since the days when Dr. Goodheart established good relationships with the medical staff during the 1980 Winter Olympics and the creation of the chiropractor intern selection program in 1984, few problems have arisen between the chiropractors and orthodox physicians." [50]

The letters below are from Dr. Irving Dardik, Chairman of the U.S. Olympic Council on Sports Medicine.

Goodheart's Report About the Olympic Games

After the Olympic Games, Dr. Goodheart gave a review of his Olympic experiences for ***Chiropractic Economics***.

> "I got to Lake Placid Sunday Night and the US Olympic Committee had a station wagon pick me up. We were lodged at the Whiteface Inn, a very fine resort in the very famous Adirondacks. I reported for processing as per Colonel Miller's orders on February 11th. The processing basically consisted of going through a series of stations. We were fitted with Olympic and athlete delegate clothing, estimated to be worth $1,500.00 and $2,000.00. The winter gear consisted of boots, several types of pants and ski pants, a shearling sheep jacket, a ten-gallon hat, sweaters, T-shirts, turtlenecks, underwear, a camera, and even a hair dryer. The gear received was of the top quality and it was a pleasure to receive and use them. The Levi Strauss Company was on hand to fit and make any alterations necessary-these accomplished in record time. I received my clothing allotment and the processing circuit at around 10:00 and by 4:00 o'clock the alternations have been accomplished. The Levi Strauss Company was very efficient.
>
> Credentials were obtained at the Olympic Village and the credential committee surveyed your relationship to the US Olympic delegation. You were given glorified dog tags encased in plastic with your picture and description of your activity and also a certain code number. In the event you did not live in the Olympic Village, these were exchanged at the reception area by the New York State police for a visitor's pass which you had to wear around your neck at all times. The security

Photo by Dean Brierly

Dr. Goodheart, back home

maintained by the New York State police included checkpoints at the initial penetration into the Olympic Village area and also the actual input to the Olympic Village. The security was very high.

The area for the US Olympic Committee was at the periphery of the Olympic Village and consisted of a number of trailers that had been erected by a Canadian concern who low bid the project. The Olympic medical and medical therapy trailer was housed in half with the press section and there was no way for a chiropractic treatment table to be placed in the section. Dr. Dardik was kind enough to find another trailer which had been used for TV viewing for the Olympic athletes and had been divided into two sections. I was given the use of half a section of the trailer and through the good graces of Skip Goggin, President of Williams Manufacturing Company, Elgin, IL, where they manufacture the Zenith table and Mark Feld, distributor of Zenith and other chiropractic products in New York, we got the table installed. They made the long trip to New York to the Olympic Village with many difficulties trying to get the table past the security. The contents of the vehicle were "sanitized" which meant sniffed by dogs who were trained to seek out high explosives but finally installed in the trailer adjacent to the sports medicine trailer. This was accomplished on Thursday of the first week and we began seeing patients on Friday.

Interestingly enough the first patient I saw was a world cupper on the Canadian ski team, Dave Irwin, who was a patient of a good friend, Dr. Dan Gleason in Thunder Bay, Ontario. Soon after, I saw Dave Murray, another Canadian skier

with a very high performance level. He was followed by the manager of the Canadian ski team who himself had been an Olympic skier in Poland; he is now a Canadian citizen. We also saw the physician for the Canadian ski team, Dr. Bernie La Long, who was very interested in the chiropractic care of the athletes under his supervision. We saw a number of US athletes and took pictures during treatment. We saw Gary Crawford and Kerry Lynch, both who are ski jumpers in the combined Alpine events and did very well; and we saw briefly Lisa Marie Allen, a very fine figure skater from California who had some difficulty with an anterior thoracic on her very first days. The manager of the Canadian ski team was a former Polish Olympic skier, Andrzej Kozbial. Most of these patients had structural faults as well as muscle imbalances and they were very interesting to treat, I also treated John B. Kelly, vice chairman of the US Olympic Committee, who was extremely interested in chiropractic care for our United States athletes and who may very well be the next president of our US Olympic delegation. (Editor: He was!) I saw a member of the United States luge team, John Fea. These patients responded very well.

I was present at the time Randy Gardner (partner to Tai Babilonia) was examined and treated and my opinion was requested (Editor's note: after the fact) as to how I would have treated him but the initial agreement that was made by Dr. Dardik, Dr. Dailey and myself was a fair one I feel; if the Olympic athletes requested chiropractic care it would be given to them and there would be a fine level of cooperation between the Olympic medical staff and my own section. This I think should change in the future so that the athletes are given the opportunity for a good diagnostic examination and treatment, by all physicians on staff, that this initial beginning required at least this type of activity. The facilities and services afforded by the Williams Manufacturing Company, manufacturer of the Zenith table which was the electric model with the drop pelvic section, was invaluable and their assistance in securing transportation was also extremely valuable in a time when transportation was difficult in the first 3 or 4 days.

I established good relationships with Dr. Tom Daley a superb physician, Dr. Cal Abley, a very fine physician from Alabama, and Dr. George Stedman who I think should have received a silver medal for his orthopedic activities in helping Phil Mare, the silver medal skier of the United States. I also established a good relationship with the trainers and at an upcoming meeting in Boston and in Colorado Springs in the future as a post-Olympic wrap- up, I am making some suggestions as to procedural patterns that may be followed to insurebetter care for the athletes in future US Olympics.

I welcomed the opportunity to provide chiropractic services to our Olympic athletes. The addition of chiropractic services by the Olympic sports medicine committee will doubly serve our national athletes. Many people have contributed to this healthy situation and since the athletes deserve the best of all types of heath care, all the health professions can contribute to their well-being and maximum performance. Chiropractic is uniquely related to the nervous system and the musculoskeletal system and can provide therapeutic and preventative support, as well as improved performance potentials by some of its more recent developments in Applied Kinesiology.

Chiropractic on the sports medicine council has been a tremendous breakthrough. We were asked to visit the laboratory training center for the American athletes preparing to compete in the 13th Olympic Winter games at the Lake Placid sports medicine center by Dr. Robert Burns Arno, M.D. who is the director. Many doors have opened and are opening and it's a matter of building personal relationships on mutual trust and confidence and as time goes on I am sure that the inclusion of chiropractic at this level will precede the inclusion of chiropractic in many other levels of our daily activity. I received a call while on duty at the chiropractic center from Dave Diles of ABC to do a TV film spot on chiropractic and treatment but it was the opinion of Dr. Dardik and also Dr. Daley that this would re-kindle animosities that were being put to rest and despite the effort on the part of Dave Diles, I did not attempt to effect that type of liaison; and as I said to Dr. Daley when I left and we spent many an hour talking waiting for athletes not to hurt themselves, I felt this was a very strong beginning and although the publishing would have been favorable it would have come at the wrong time and in the future. I'm sure we will get the proper public recognition we need.

The care of Olympic athletes is unusual in that you have to check athletes during active motion. Many of them have reactive problems unique to applied kinesiological techniques and

many of them require very subtle investigation of the relationship of muscles, one to another, as well as the more straightforward techniques. In kinesiology we are developing these techniques and with the aid of many of the men and Applied Kinesiology at different levels, we will be able to provide chiropractic care at the training center level for the Olympics.

The transportation problems as you read were enormous for the first 4 or 5 days. The food at the Olympic Village was fantastic. The overall activity of the New York State police was the most efficient I've ever seen. The hospitality and good will that was evidenced by all members of the staff toward me is very much appreciated and I welcome this opportunity to give the readers of *Chiropractic Economics* a little bird's eye view on a very interesting 2 weeks in my life and a very strong event in the history of chiropractic services for our nation.

Treating Olympic athletes who are in superb condition and superbly trained is a little different than having a regular practice and a great deal of time is spent in waiting in a paradoxical situation in which you hope the athlete does not hurt himself but if he does you hope you can be of service and the Olympic medical staff which is obviously far more enormous than the single chiropractic member was busy, but when compared numbers we had about the same number of active patients. The athletes need reassurance and repeated treatment, something a little different than one would practice in ordinary general practice; but I was very pleased with the response, as was Dr. Dardik, and certainly the ability to provide a good chiropractic and future potential."

– Dr. George J. Goodheart, Jr. 1980

Dr. Leroy Perry was an essential early figure in the AK and Sports Chiropractic movements, and he worked with numerous Olympic and professional athletes and teams. [51] He treated such world famous athletes as Dwight Stones, Bruce Jenner, Tracy Austin and Stan Smith. Many other AK physicians have worked with professional athletes and sports teams as well. Dr. Evan Maldenoff for example was with the Kansas City Chiefs for 13 years.

Dr. Jean-Pierre Meersseman was the leader of the sports physicians taking care of the professional football (soccer) team AC Milan. Dr. Meersseman created the MilanLab that served AC Milan and dozens of very high profile professional football players. At AC Milan there was a 43% reduction in days off from injuries; a 70% reduction in drugs and an overall reduction of injuries by 80%. In the long term (three years), the physical performance average of the AC Milan players had increased by 50%. Meersseman and Milan Lab also enabled Paolo Maldini and Alessandro Costacurta to play into their 40s, with Serginho and Cafu not far behind. David Beckham was also served by Dr. Meersseman at Milan Lab, and "responded exceptionally well to what we did." After AC Milan Dr. Meersseman then began working with Premier League footballers in London. [52]

Dr. Jean-Pierre Meersseman, Founder of MilanLab

Tens of thousands of world-class athletes around the world have optimized functional performance using AK methods to maximize their performance. Dr. Wayne Steiner helped Michael Johnson, track-and-field star. Thanks to chiropractic and AK, Johnson won the European Grand Prix by a margin of 4 meters.

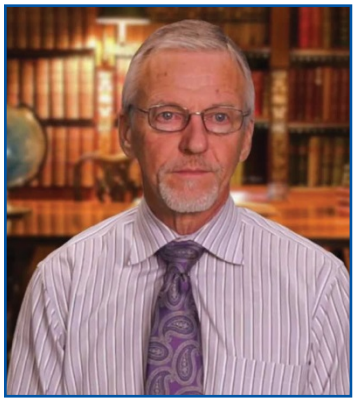
Michael Johnson, European Grand Prix winner

Dr. Don McDowall and Ivan Lendl

Dr. David Leaf was also with AC Milan and served individual New England Patriot players. Dr. Tom Roselle was with the Washington Mystics for 3 years and treated individual Washington Redskin players and Olympians. Dr. Tom Palic is a former U.S. Ski Team chiropractor and a medical provider for Red Bull Athletics. Dr. Kirk Johnson

was the personal chiropractor for professional tennis star Jack Sock, and traveled the world with him. Sock was a member of the 2016 USA Olympic Team and won a gold medal in mixed doubles and a bronze medal in men's doubles.[53] Dr. Don McDowall was Ivan Lendl's chiropractor.

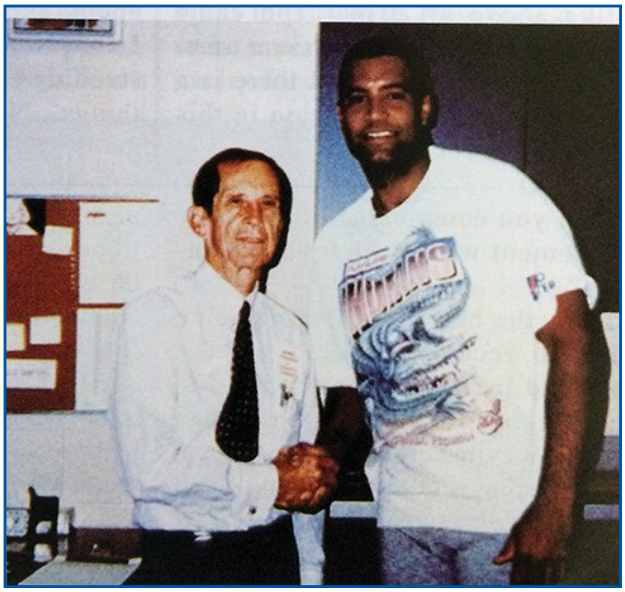
Dr. Craig Buhler was the AK chiropractic physician for the professional basketball team Utah Jazz for 26 years. "As a result of his techniques, the team had the lowest player missed games due to injury (PMGI) rate in the NBA — 61 player-missed games due to injury within a 20-year long span, compared to the league average of 171 in the same timeframe.



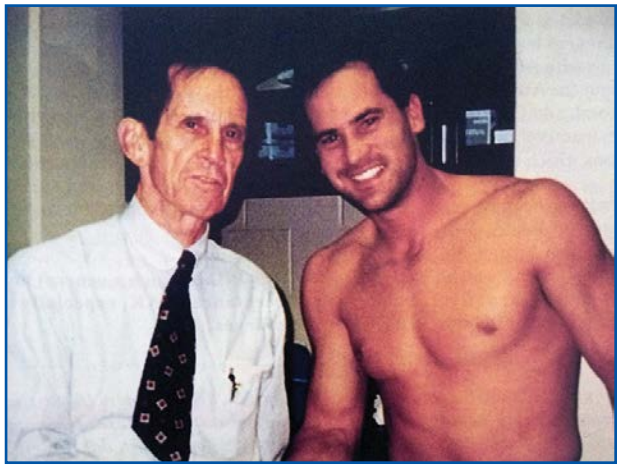
Dr. Craig Buhler interviewed about AK

"Then, between 2001 and 2006 when I stopped having access to the players, we had the most rapid increase in player missed games due to injury rates in the league in the 25-year period," he says. "It validates what happens when you use the technique and integrate it with good quality medical and training care." [54]

Dr. Dan Duffy worked with the Cleveland Indians Professional Baseball team and recounts, "In 1997, the best of sports medicine failed to recover Albee Lopez, a Cleveland Indians pitcher on the disabled list for 15 days. Since I had relieved Kevin Seitzer of his career long knee and shoulder pain and fixed Orel Hershiser's (LA Dodger Pitcher) groin problem, they both advised Mike Hargrove to call me in to see if I could turn the trick. So I drove 50 miles to Jacob's Field to treat Lopez there. I explained every move I made to the orthopedic surgeon and the two physical therapists, who were worriedly watching me. These are good people, genuinely concerned about the players under their care, but viewing the world from a totally different perspective. When I was done, Lopez demonstrated full range of motion with no pain, and subsequently went back to work. This created quite a stir in the clubhouse, encouraged by Seitzer and Hershiser, I also relieved Chad Ogea of a long-standing elbow problem, among other things."



Dr. Dan Duffy and Robby Alomar



Dr. Dan Duffy and Omar Visquel, shortstop

Kevin Seitzer's (former 3rd baseman in Major League Baseball) open letter for the Cleveland Indians to applied kinesiologists everywhere (1999).

"To whom it may concern:

I am writing this testimony on behalf of all applied kinesiologists in the world who are experts in this field.

I am a retired major league baseball player of eleven years. I played from 1986 to 1997 with the Kansas City Royals, Milwaukee Brewers, Oakland Athletics, and Cleveland Indians. Over the course of my career, I endured many injuries, some of which knocked me from the lineup, but most of them I played through. As my career went on and my years in age go "up there", it became increasingly more difficult to stay on the field because of nagging injuries. One part of my body would flare up, which would cause something else to break down because I would start favoring something, and it seemed as though I could not stay injury (pain) free. Rarely did I come off the

field because of these; only broken bones and surgery limited my action at times throughout my career.

I had five knee operations over the course of my career and also was born with a disc problem in my back, which caused me to see chiropractors on a regular basis since high school. All this brings me to my point – my first introduction to Applied Kinesiology (AK). It was in spring training of 1996 (I think…it may have been '95; baseball does that to the memory) that I first experienced someone in the field of AK. Dave Nilsson, who is from Australia, brought his own personal AK guy over for part of the season. I had a terrible ankle sprain that happened just before spring training (about three days before I left…stupid me, playing basketball), and Nilsson suggested that this guy take a look at me. His name was Eril and his last name I should not even attempt to pronounce or spell. It was something like Americazerra (Eril, if you read this article. I apologize for butchering your name). He was a real nice guy, too. Anyway, he got me back on the field in a matter of days. I should have missed about two weeks with this sprain. Needless to say, from that point on, I was a believer in AK. He went to Milwaukee with us that season and worked on several of the players. I never felt so good during a baseball season. The only problem was that when I couldn't get an adjustment for a long time, I blew out pretty easily. So, we took him on the road with us a few times. He was great!

From that point on, I was no longer looking for chiropractic help. I was looking for someone in AK. This is not to "bag" on chiropractors because they really helped me a lot throughout my career. Life was not always easy in baseball, from a physical standpoint. Also, just to make a point, I took very good care of myself from about 1989 on. I was on a very structured lifting program and biked almost every day or did some sort of running. I tried to eat right (as much as a guy who lives in restaurants on a daily basis can) and in 1988 turned my life over to Christ and received Him as Lord and Savior. Because of this, I was able to completely stop drinking. I used to pull and strain muscles and just be tight all the time. I had a terrible drinking problem dating back to college. Thankfully, I have been "dry" since that point in my life. This really has nothing to do with AK, but I thought I would share this because it is really important to me. Thanks!

In 1996, in September, I was traded to the Cleveland Indians. It was here that I met Drs. Dan Duffy, Sr. and Jr. These guys are the best! Doc Sr. has got to be a legend in the AK field. If there is anyone better at this stuff than this guy, I want to meet him. I never knew I could feel so good. I saw these guys all through 1997 and felt great all year. Doc Duffy challenged me to start eating "properly" (this word means something totally different in the field of AK). It has to do with combining your foods properly. Ask the pros for the manual; that's what I had to do. I dropped about 3-4 pounds and about 5% body fat during the course of the season. I never felt so good and had so much energy (I just wish I could have stayed with that program. I like candy too much. Sorry, Doc!).

I just want to say that I am a HUGE believer in Applied Kinesiology and would recommend to everyone to find a good AK guy near you and give them a try. You won't regret it. Even if you think you feel pretty good, you have no idea how good you can really feel. I have never written anything this long since college, which was many moons ago, and really had a hard time with writing then, but this was kind of fun.

Well, congratulations if you made it to this point. My teammates will never believe I was capable of putting this many sentences together at one time."

***** Kevin Seitzer, 3rd Baseman, Major League Baseball***

Another AK physician who successfully treated Olympians was Dr. John Moore who treated Jenny Thompson at the 2000 Sydney Olympics (one of the greatest relay swimmers of all time). Dr. Moore worked with the Stanford Women's Swimming team for nearly a decade, and was invited to work with the US Olympic team in Sydney. He also was invited to work with Olympians from Brazil, Sweden, Spain, Mexico, Canada and Trinidad. He observes that athletes from non-American countries seem to be more open to AK methods of treatmentthan athletes from the United States, "probably because they haven't been brainwashed by as much advertising from drug companies.

Dr. John Moore and Olympian Jenny Thompson

Jenny Thompson told *The International Journal of Applied Kinesiology and Kinesiologic Medicine* (2001):

> "AK has helped me in my career by keeping my muscles balanced and strong. I have had nagging shoulder and neck pains that have been totally controlled and cured through AK; it has helped to keep my body functioning maximally for the past 7 years. I am a 27 year old who trains up to six hours per day. For me to stay injury free for so long is pretty amazing."

Dr. Robert Blaich (ICAK USA Diplomate) began working with World Class and Olympic level bicyclists in 1982. The Colorado Chiropractic Association chose him to be the first Doctor of Chiropractic on the Medical Staff of the Coors International Bicycle Classic. The Coors Classic was a rugged and demanding two week long bicycle race through the Rocky Mountains and many cities throughout Colorado.

It was much like moving to a new town and starting a practice when no one knows who you are or what you do. His reception was mixed from other members of the Medical Staff, but Dr. Blaich built quite a following by using AK to treat the cyclists. Word of his successes spread among the riders, such that by the end of the 1982 race, he had performed more treatments than the rest of the Medical Staff combined, which included 5 M.D.'s and several physical therapists.

While he dealt with many structural problems, especially back, knee, neck, it was enlightening to see the extent of metabolic problems that are common among cyclists in an endurance event such as this. It was also surprising how little was known about healthy diets and nutritional supplements.

After the 1982 race, Dr. Blaich was invited to return to the Coors Classic on a permanent basis. He came prepared for the 1983 with nutritional supplements that he was able to test and provide for many of the riders. At a time when athletes were mostly on high carbohydrate and low fat diets, AK testing revealed that most of the riders were deficient in essential fatty acids. The supplementation with specific nutrients added an additional dimension to their performance. He wasn't just treating them for pain, he was helping them to ride faster, longer, and stay healthy in the process.

The 1984 Coors Classic was unique in that it was held in the weeks preceding the 1984 Olympic Games, and the only participants were the Olympic teams from each country, using it as preparation for the Olympics. During the first week of the Classic, he treated the Dutch and Irish teams, a variety from other countries, and numerous Americans. Dr. Blaich's policy was that as the Olympic Road Race got closer, he would only treat American riders. He was working closely with an American rider from Aspen, Colorado, named Alexi Grewal. Alexi had a history of asthma, and Blaich was able to help him considerably in 1983 and 84 with AK tools.

In the week before the Olympic Road Race, which took place in Mission Viejo, California, Alexi was having difficulty with his breathing. The air quality was not the best plus there and had been a huge stressful event in the later stage of the Coors Classic where Alexi was disqualified and unable to finish the race, due to an illegal substance that was found in his urine. A massage therapist had recommended an herbal tea to Alexi, which he consumed not knowing it contained an amphetamine.

The race was on Sunday, the opening day of the 1984 Olympic Games. The Friday treatment was extensive, involving many AK procedures for structural, biochemical, and emotional factors. He exhibited a unique adrenal pattern, which Blaich was able to resolve with a suggestion from Dr. Goodheart.

When Blaich rechecked Alexi on Saturday, he tested much improved and only required some minor treatment. He was taking the supplements exactly as recommended, and was in great condition for the following day's race.

Sunday's Olympic Road Race was about 120 miles, 10 laps of a 12 mile course that had numerous hills and steep climbs, with the temperature in the 90's. As the race progressed, Alexi positioned himself well and was consistently able to stay in the lead group of riders. While other riders were consuming traditional candy bars and soft drinks for fuel during the race, Alexi consumed rice cakes and diluted apple juice. Several hours into the race that lasted almost 5 hours, many of the top contenders were dropping out of the race from overheating. Dr. Blaich had done Dr. Richard Shroeder's technique to prevent overheating and Alexi was enduring the heat fairly well.

The final lap of the race was a duel between Alexi and a Canadian rider, Steve Bauer, who was in the lead. In the final 100 meters, Alexi was able to outsprint Steve to the finish line and win the Gold Medal for the United States. This was the first medal of and kind for the US in men's cycling since 1912, and very special that it was Gold.

Alexi's asthma did not interfere with his brilliant performance and his Gold Medal Victory. Immediately after the medal ceremony, Alexi gave Dr. Blaich a huge hug and said, "Thanks, I needed your help."

When Blaich visited Alexi the following day, Bliach was hoping to get a picture of the two of them with the gold Medal. Before he even got to ask, Alexi put the Gold Medal around my neck and said, "Let's take some pictures!"

Blaich said "if we look happy here, it's because we felt like we conquered the world….and we did."

Alexi was very grateful to Dr. Blaich and gave a tremendous amount of credit to Applied Kinesiology for his spectacular performance. For Blaich, Alexi's victory was especially sweet. It was a day when AK, proper use of legal supplements, and healthy eating all came from being considered "fringe" to the mainstream.

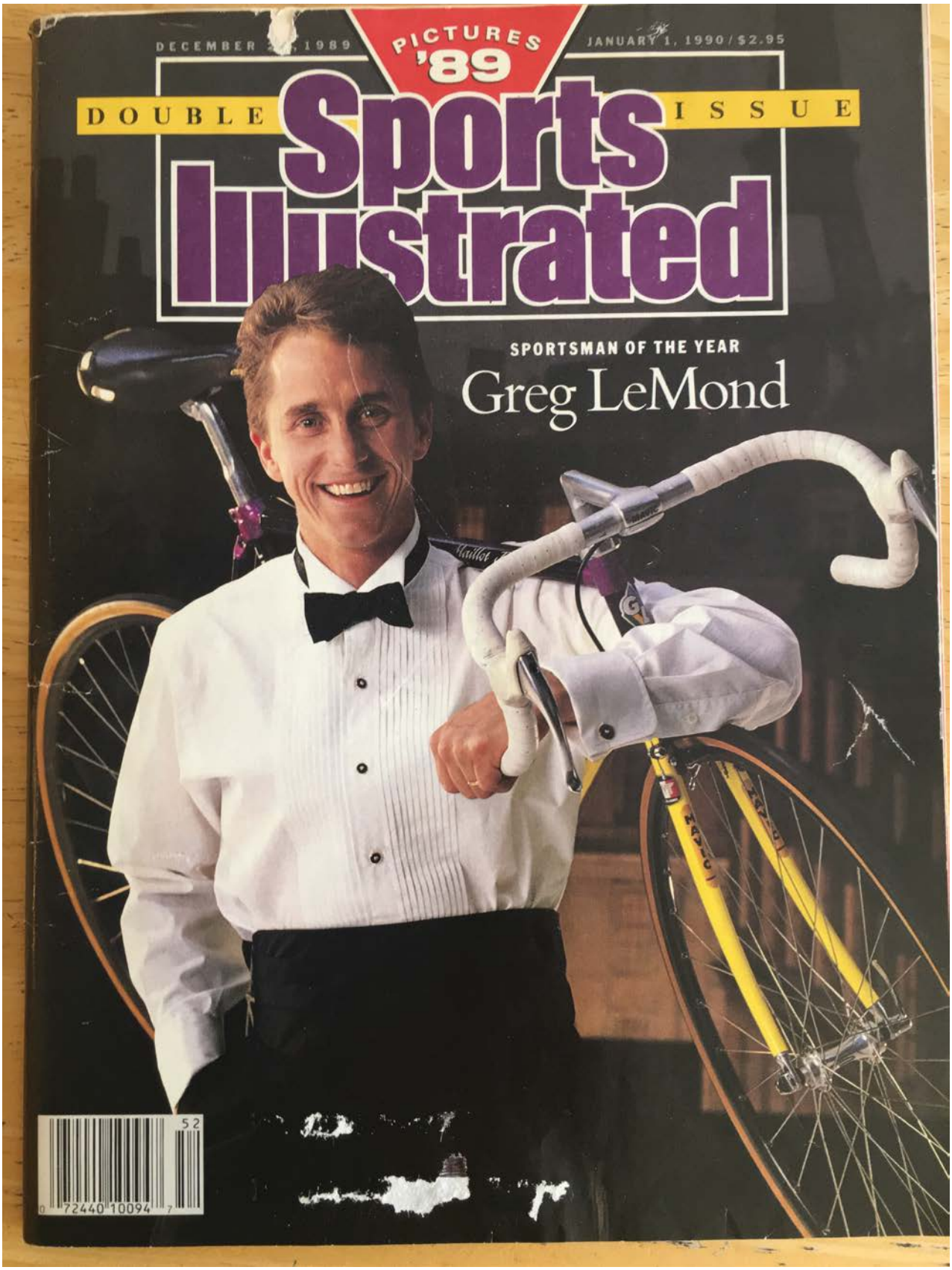
Blaich continued on the Medical Staff of the Coors Classic from 1985 through 88, the final year of the event. Through Blaich's efforts in 1985, the Medical Staff got restructured and renamed. It became the "Health Services Team" with 3 branches, the Doping, Medical, and Chiropractic divisions.

In 1987, Blaich was invited by the coach of the US Cycling team to the training camp to give a presentation on AK and to treat many of the younger, up-and-coming Olympians.

In 1989, Blaich was invited to become a team doctor for the Coors Lite Team. This was especially exciting, because the team consisted of Alexi, several of the other top cyclists in the world, and Greg LeMond, the first American to win the Tour de France. Greg won the Tour in 1986 and was unfortunately shot in a hunting accident in the spring of 1987. He recovered from this near-fatal accident and tried to make a come-back in 1988, but was plagued with inflammatory problems.

In May of 1989, Blaich treated Greg several times, using AK to do major re-sets on his nervous system. He also put him on a regimen of 5 supplements, which he continued to take for the next several months.

At the Tour de France in July of 1989, Greg truly made the come-back of the century when he went into the final day of the race 30 seconds behind and made up enough time to win the 22 day race of over 2,000 miles by a margin of 8 seconds.


DECEMBER 1989
PICTURES '89
JANUARY 1, 1990/$2.95
DOUBLE ISSUE
Sports Illustrated
SPORTSMAN OF THE YEAR
Greg LeMond
72440 10094 7

Applied Kinesiology in Dentistry

Applied Kinesiology offers dentistry substantial reasons for incorporation of this practice into dental practice because it is able to show substantial effects on the total health and function of the individual owing to minute changes within the oral cavity.

Applied Kinesiology and Dentistry in Europe (by Dr. Rudolf Meierhöfer)

In the early 1990s, ICAK Diplomates Dr. Wolfgang Gerz, from Munich and Dr. Hans Garten founded the ICAK–D (Germany).

Dr. Gerz included dental applications like material testing, structural analysis in cranio-mandibular dysfunction in his teaching program.

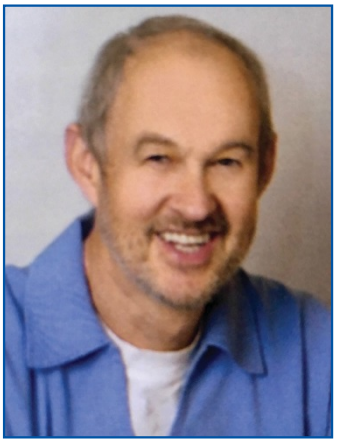
Shortly thereafter, an engaged group, coming from different sections of dental medicine (oral-surgeons and TMJ specialists), orthodontists and general dentists discovered the new AK possibilities. These dental physicians were inspired not only by the ideas of AK but also by the positive results of this new method. Over the next few years these new methods of examination were discussed in professional meetings and were researched in ever larger numbers of clinical seminars.

This movement in European medicine was confirmed in 1993 with the founding of the "International Medical Society of Applied Kinesiology (IMAK)", and created an important push for Applied Kinesiology's integration into medicine and dental medicine.

Their task was now to manage the recognition of an official additional training in AK by the Austrian medical and dental Council.

In 1997 Dr. Rudolf Meierhöfer (a charter AK Dental Diplomate in Germany) passed the Clinical Competence Test as first dentist, taught, trained and examined by the Diplomates Wolfgang Gerz, Jeff Farkas and Hans Garten.

Continuously encouraged by Dr. Wolfgang Gerz, AK dental research went forward, e.g. oral testing of dental material, developing different methods of examination for dental foci and their consequences on the whole body function, and above all the structural consequences of craniomandibular dysfunctions. Physiotherapists, medical doctors and dentists formed these working teams.



Dr. Rudolf Meierhöfer

The developing clinical techniques from Drs. Goodheart, Walther, and Meersseman regarding AK dental diagnostics were checked by these European clinical-scientists. If possible to reproduce it was integrated into the diagnostic and therapeutic spectrum of AK and also further developed.

Dr Meierhöfer experimented with therapy localization to inflamed gum pockets, and carried out laboratory studies that reproducibly confirmed the possibility of several AK testing methodologies. With this method he could treat periodontal sickness better with oral tested orthomolecular medicine which is today standard in many dental practices and also in the dental AK teaching material.

A decade after AK was introduced to this group of engaged dentists in Europe, many new ideas, clinical finesse and practical knowledge arose.

The questions came up:

a) How to teach all the future applicants on the base of the same source?
b) How to examine all the new dentists and "create" new diplomats since the knowledge did not yet exist in tested examination questions?

The first AK textbook in German "Lehrbuch der Applied- Kinesiology" written by W. Gerz, summarized all the knowledge of that time and was a good solution to the problems seen above.

The popularity of the AK in dentistry was noticed internationally, and so Dr. Rudolf Meierhöfer received the title "Charter Dental Diplomate" in Melbourne 2002.

Dr. Meierhöfer was the one who worked on 100 new AK Dental examination questions, and revised them with AK experts and so created a new basis for dental AK examination. Dr. Meierhofer was helped in this project by intensive mail exchange the commitment of Dr. Cecilia Duffy – the former secretary of ICAK International Board of Examiners – the basis for exams of Dental Diplomates -- ICAC was created.

The interest in Applied Kinesiology in dentists groups grew further in Europe in the 1990s. Government accreditation of Applied Kinesiology as an independent health specialty has begun in Austria. Drs. Meierhöfer, Gerz, and the new Austrian Diplomates started to organize courses in Germany, Austria and Switzerland. The number of dentist members with ICAK-D training increased during that time in to over 300 members.

From the increased number of AK candidates Dr. U. Angermaier (Roth) and DDr. Margit Riedl-Hohenberger (Innsbruck) showed extreme engagement in AK and consequently both passed 2006 their dental diploma examination.

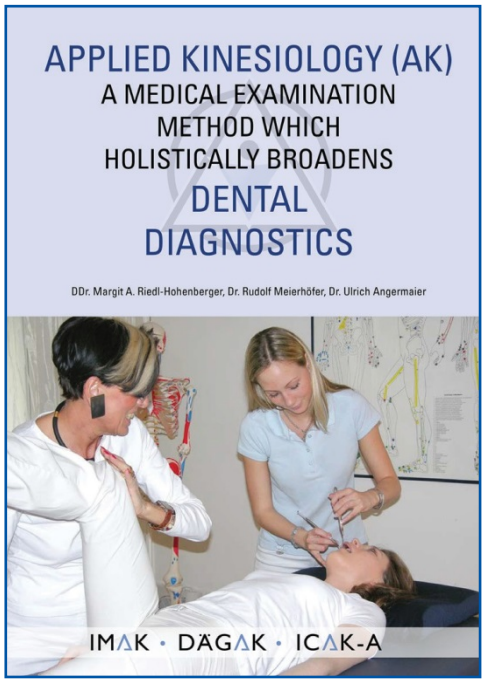
DDr. Riedl-Hohenberger and Dr. U. Angermaier

DDr. Riedl-Hohenberger worked successfully on lab-based studies of reproduction of AK testing of dental materials. This research was published continuously in the Austrian Trade Press.

A little later the results of this fast development of AK technology in dental medicine were published for the ICAK meeting in Berlin with the article "AK Dental Diagnosis" in German and translated into English as well.

For many years these dental Diplomates organized in different German cities and in Austria AK seminars which offers trainees the AK dental-medical diploma of IMAK. As mentioned, the medical and dental associations of Austria recognized this diploma.

In 2010 IMAK and the "German medical society of Applied Kinesiology" (DÄGAK) joined forces and the new group of Diplomates brought in a lot of ideas and worked together for a uniform curriculum in AK for all German speaking countries -- and potentially in the future for all AK courses in Europe.



From Riedl-Hohenberger, Meierhofer R, Angemaier U. Applied Kinesiology (AK): Amedical examination method which holistically broadens dental diagnostics. DAGAK.

The aim of present dental AK representatives in the German world is to spread this positive development from the German speaking area and to attain international recognition.

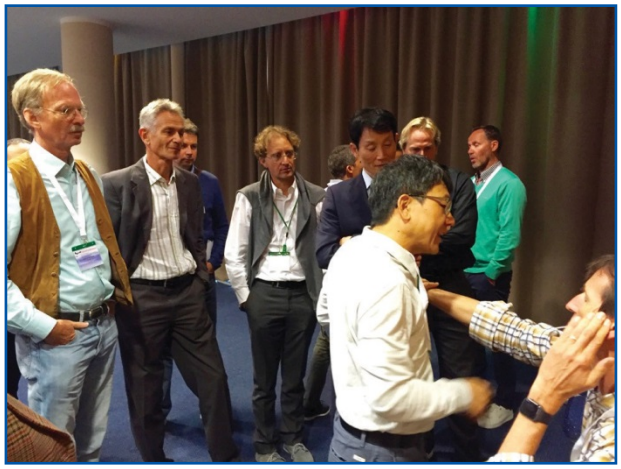
The number of patients showing vague symptoms, suffering from unclear complaints, which have been existing chronically for years and are resistant to therapy, has increased steadily over recent years. Many of these patients with chronic diseases do not show a clear pattern that could be categorized according to mainstream medicine. Many treatment methods which have been successful over many decades don`t work as effectively as they once did, in spite of using better materials and improved instruments.

Standard diagnostics, such as inspection, palpation, x-ray, laboratory tests, etc. are not sensitive enough to deal with chronic diseases. Therefore the amount of unanswered clinical questions grows steadily. This is as unsatisfying for dentists as for patients.

Especially in dentistry most of the knowledge is the result of "trial and error". For example, when dealing with inflammation, the dentist prescribes an antibiotics which he thinks will work and if it doesn`t he prescribes another one and so on.

Therefore it is now more necessary than ever to make use of complementary, bioenergetic examination methods. Here Applied Kinesiology is an ideal diagnostic method. It enables us to examine the basic state of the body`s reactions to various forms of sensoriy-motor stimulation without using invasive, potentially toxic, and expensive medical equipment. Using different challenges, we can expand as well as refine the standard diagnostic possibilities underlying our patient's problem. Once we have translated the patient symptoms into muscle language, we are able to find the best remedy. So we are able to decide which among a host of treatment options is the most valuable therapy.

Few groups of medical practitioners introduce as many different materials into the human body as dentists. Experience has shown that every field of medicine deals with symptoms that have their origin in incompatible



Korean orthodontist demonstrating AK use at the ICAK International Conference in Riga, Latvia, 2016

dental materials. Material incompatibilities are caused by immune mechanisms, primarily type 1, that is acute responses and type IV, that is delayed responses. It should be an essential motive for the responsibly practicing dentist to clarify in advance whether a patho-physiological reaction can be expected to a newly introduced dental material, or already incorporated, in order to save the patient unwelcome consequences through immune responses. It should be taken into account that every incompatible material can constitute a trigger for chronic inflammations, as it will interact with the organism itself as well as with all foreign materials already present in the body. In this way, inflammatory irritations may be triggered or already existing complaints accelerated and amplified.

Applied Kinesiology provides us an expedient, inexpensive, and reproducible method to predict the reaction of the patient`s immune system to a dental material before incorporating it. First we need small pieces of each material that should be introduced. These test bodies have to be produced exactly the same way they are introduced later into the patient`s mouth. That means acrylics have to be prepared with all bonding agents and then polymerized in the same way they will be polymerized chair side. Metal alloys have to be casted and processed with ceramics or acrylics and color painted the same way as they will be introduced. The same applies to zirconium, ceramics, temporary materials and cements.

Amalgam incompatibility using AK is easily done with different types of MMT. [55] For the pre-test the patient gets the test substance on his tongue for about a minute. If a normoreactive indicator muscle stays normoreactive after that time the material seems to be compatible to the patient`s immune system. Any dysreaction hints at intolerance. To exclude a type IV allergy on a high level of validity (over 90%), the patient has to take the material into his mouth for 5 to 10 minutes each day for a period of one week (in patients with many allergies even two weeks). After that period of exposure, the clinician repeats the muscle test. If the normoreactive indicator muscle stays normoreactive, the material is considered compatible for the patient and can be used. But no test (not even the laboratory test) can predict what will be in the future.

Dental materials which are already present in the patient`s mouth and which are suspected to be causing problems can only be tested by use of homeopathically processed test substances (potentized dental materials).

First it is necessary to check the muscles that are functionally correlated with the estimated problem for inhibitions in the clear. If there aren`t any you have to check the associated neurolymphatic reflexes by therapy localization or challenge. In case of dysreactions, bring the potentized dental material into contact with the patient`s skin and test the muscle again. If it becomes normoreactive the suspicion that the dental material is intolerant is confirmed. For forensic reasons the result has to be confirmed by a laboratory test. But this becomes much easier now that you know now what you are searching for.

Depending on the dental material there can be immunological or toxic problems. Toxicological problems are verified best by saliva, blood or urine tests. Immunological problems are verified best by lymphocyte transformation test or basophile degranulation blood tests.

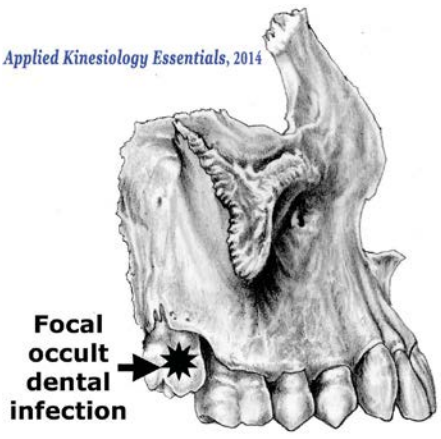
Testing for infections and pathologies (foci)

The theory that focal occult infections can mediate systemic inflammatory and degenerative effects was first proposed in the 1920s.[56-57] Though discounted for many decades, the focal infection theory of systemic disease is becoming once more better established.[58] The most recognizable example here is periodontal disease being a risk factor for systemic inflammation and related degenerative diseases, such as cardiovascular disease.[59]

One study of periodontal disease indicated a causative role for systemic inflammatory markers through the lowering of CRP, interleukin-6 (IL-6), and LDL cholesterol levels from baseline after two months of periodontal therapy. [60] It is possible to trace bacteria recovered from peripheral blood to occult focal infection in tooth apices after a root canal, and it has been suggested that the resultant bacteraemia and circulating endotoxins may have systemic effects. [61]

The *Medical Journal of Applied Kinesiology* [62] published reports from dentists and other clinicians in the German-speaking world on this subject and has produced an impressive compendium of the AK diagnostic findings in cases of focal occult infections and their treatment.

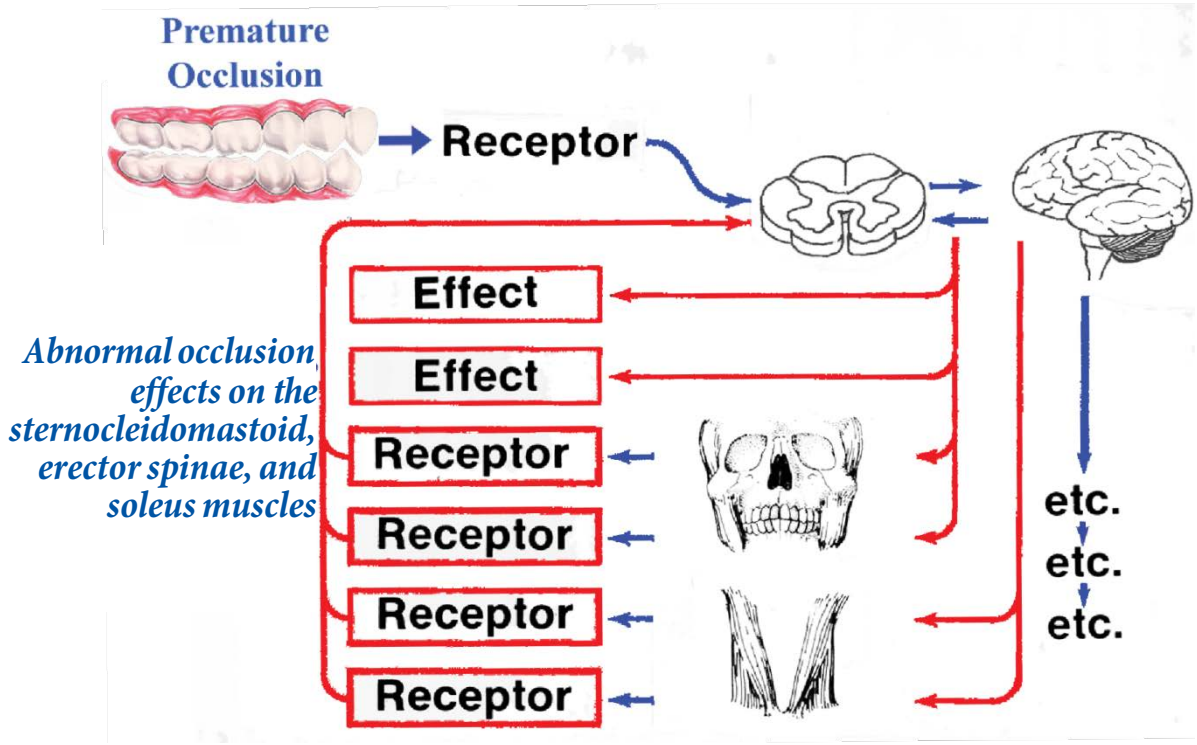
The problem is that almost all chronic inflammations in the dental area stay silent for a very long period. Even radiological changes caused by these inflammations get visible only at a certain stage of osseous destruction. Add to this some foci have no radiological signs. So in many cases Applied Kinesiology is the only method to detect these silent inflammations and the only method which is able to detect correlations between foci and symptoms which can be located over the whole body (double therapy localization). First you test one muscle belonging to each meridian in the clear. All unilateral dysreactions, which are not caused by local muscular problems, are under suspicion to be caused by a focus. Then using a normoreactive indicator muscle you have to check all the suspicious dental areas by therapy localization or challenge. If the indicator muscle gets dysreactive there is something wrong at this area. To find out what it is you have to use homeopathically processed test substances (i.e. Kieferostitis D6) or allopathic remedies (antibiotics). Bring them onto the skin (homeopathy), or into the mouth (antibiotics) of the patient and retest if there is a normoreaction again.



Applied Kinesiology and Craniomandibular Dysfunction (CMD)

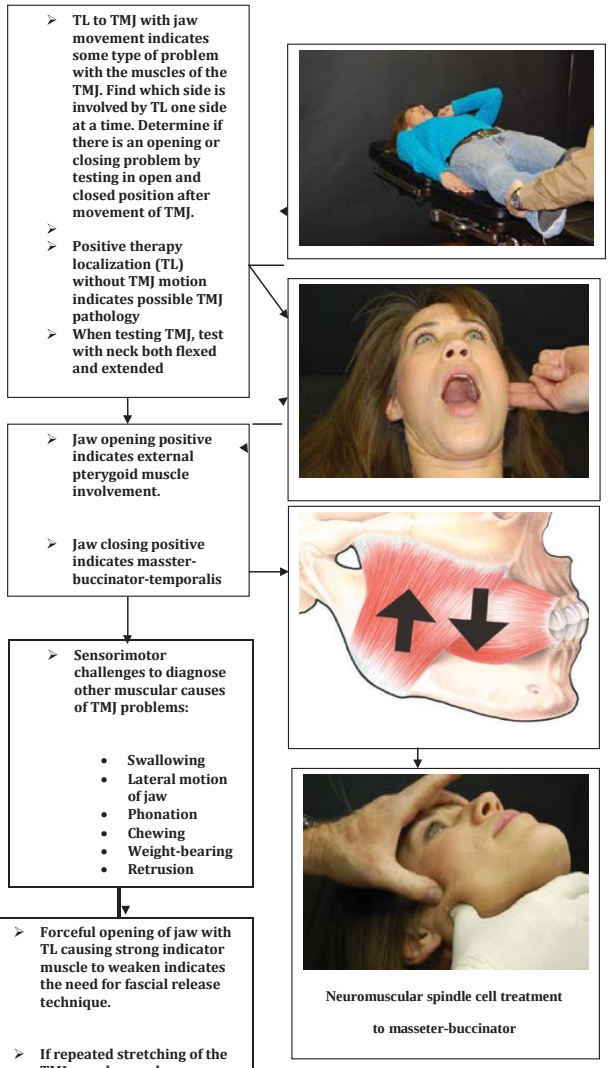
The stomatognathic system and the rest of the body exist as integral components of our neuromuscular system and cannot function without the influence of muscle agonists and antagonists. The use of AK helps to diagnose the disruptive influences present within the stomatognathic system.

Malocclusion is always associated with altered cervical neuromuscular function and postural mechanics. Craniomandibular problems result in a tendency for neck problems, such as a cervical subluxation or fixation: for holistic treatment, both elements of a patient with craniomandibular dysfunction (the dental and the musculoskeletal) mustbeaddressedforimprovedoutcomes. Bergamini et al showed the specifics of the integration of the stomatognathic system with the craniomandibular muscular system.[63-64]



An AK Clinical Algorithm for Managementof Temporomandibular Joint Disorder [65]

Starting with a comprehensive medical history, inspection, palpation and an orthopedic examination, Applied Kinesiology enables the clinician to find out if patient`s symptoms are caused by a weight bearing (ascending) problem, or a bite (descending) problem or a mixture of the two. Moreover it is very easy to check if the TMJ itself has a problem and if the mandible is in a 3-dimensionally correct position. If not, you have to fix the mandible in the correct position with a dental splint. This correct position can be found and then confirmed to be effective by Applied Kinesiology.



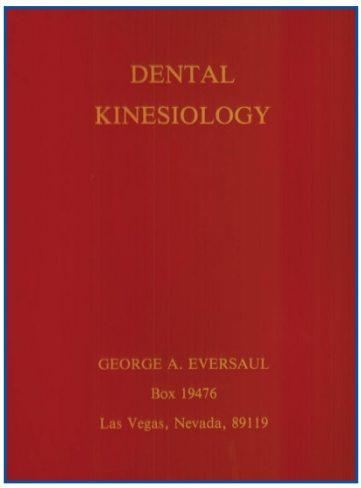
Applied Kinesiology and Peridontal Disease

More and more studies prove that periodontal disease is not only a problem of bacteria but also an immune problem. And it is well known that vitamins, minerals and trace elements have positive effects on the immune system. With Applied Kinesiology you don`t have to give them all as is so frequently done with trial and error. You are able to test which substances the body needs to rebuild bone and periodontal tissue.

AK remedy test during probing of a parodontal pocket

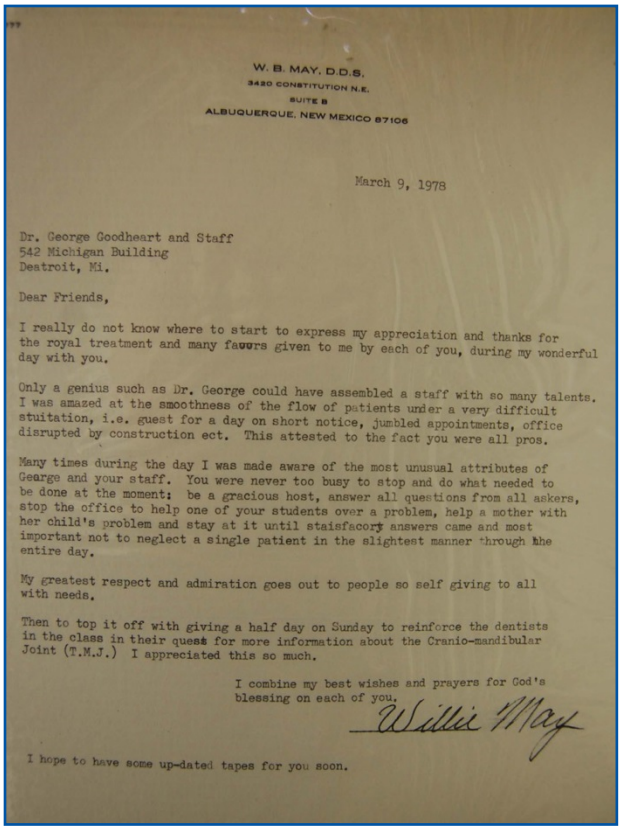
Dr. George A. Eversaul published "Dental Kinesiology" in 1977, and listed 7 reasons that dentists should employ AK procedures in their dental practices.

1. Increasing accessibility to the oral cavity. AK procedures allow the doctor to increase the degree of mouth opening.
2. Decreasing muscle spasm and pain following treatment.
3. Reducing jaw clicking and/or bruxism.
4. As a prepping procedure for prosthodontic appliances.
5. Increasing patient endurance
6. Increasing patient motivation.
7. Identification of bad tooth endodontically.



Willie May, DDS

Dr. Goodheart brought Dr. May's work (for "increasing the vertical" with a dental appliance, that coincidentally helped many patients with systemic health disorders) to wider attention.



W. B. MAY, D.D.S.
3420 CONSTITUTION N.E.
SUITE B
ALBUQUERQUE, NEW MEXICO 87106

March 9, 1978

Dr. George Goodheart and Staff
542 Michigan Building
Deatroit, Mi.

Dear Friends,

I really do not know where to start to express my appreciation and thanks for the royal treatment and many favors given to me by each of you, during my wonderful day with you.

Only a genius such as Dr. George could have assembled a staff with so many talents. I was amazed at the smoothness of the flow of patients under a very difficult stuitation, i.e. guest for a day on short notice, jumbled appointments, office disrupted by construction ect. This attested to the fact you were all pros.

Many times during the day I was made aware of the most unusual attributes of George and your staff. You were never too busy to stop and do what needed to be done at the moment; be a gracious host, answer all questions from all askers, stop the office to help one of your students over a problem, help a mother with her child's problem and stay at it until staisfacory answers came and most important not to neglect a single patient in the slightest manner through the entire day.

My greatest respect and admiration goes out to people so self giving to all with needs.

Then to top it off with giving a half day on Sunday to reinforce the dentists in the class in their quest for more information about the Cranio-mandibular Joint (T.M.J.) I appreciated this so much.

I combine my best wishes and prayers for God's blessing on each of you.

Willie May

I hope to have some up-dated tapes for you soon.

Harold Gelb, DDS, MS

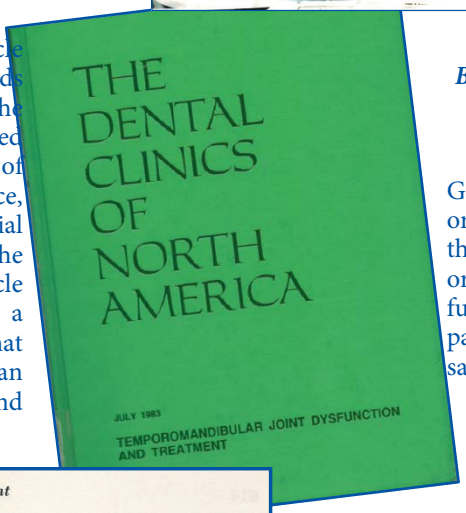
In 1985 Dr. Harold Gelbfoundedthe Craniomandibular Pain Center at Tufts University College of Dental Medicine in Boston, Massachusetts. He was Clinical Professor at the Department of Restorative Dentistry in the University of

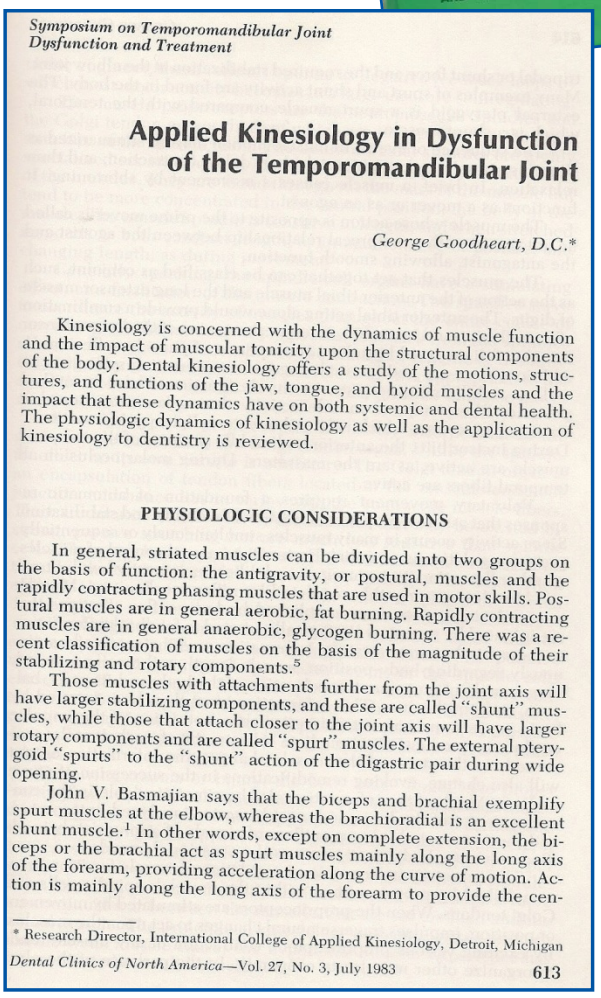
Medicine & Dentistry of New Jersey, from 1971 to 1991. He was the director of the Temporomandibular Joint Clinic at the Department of Otolaryngology, in the New York Eye and Ear Infirmary from 1958 to 1979.

Dr. Gelb invited Dr. Goodheart to write about Applied Kinesiology's usefulness for temporomandibular disorders (TMD) in 1977. This was one of the first inter-professional offers for a chiropractor to write for a medical and dental journal.

Dr. Gelb and his team at Tufts University have been using manual muscle testing and the methods developed by Goodheart and the International College of Applied Kinesiology in the evaluation of patients with TMD ever since, and have published a substantial body of research on the relationship between muscle imbalances and TMD.[66] In a seminal paper they showed that correction of the TMJ can enhance muscular strength and athletic performance.[67]

Harold Gelb and Norwegian and British Dentists at the 1995 International ICAK Conference, Monte Carlo





Symposium on Temporomandibular Joint Dysfunction and Treatment

Applied Kinesiology in Dysfunction of the Temporomandibular Joint

*George Goodheart, D.C.**

Kinesiology is concerned with the dynamics of muscle function and the impact of muscular tonicity upon the structural components of the body. Dental kinesiology offers a study of the motions, structures, and functions of the jaw, tongue, and hyoid muscles and the impact that these dynamics have on both systemic and dental health. The physiologic dynamics of kinesiology as well as the application of kinesiology to dentistry is reviewed.

PHYSIOLOGIC CONSIDERATIONS

In general, striated muscles can be divided into two groups on the basis of function: the antigravity, or postural, muscles and the rapidly contracting phasing muscles that are used in motor skills. Postural muscles are in general aerobic, fat burning. Rapidly contracting muscles are in general anaerobic, glycogen burning. There was a recent classification of muscles on the basis of the magnitude of their stabilizing and rotary components.[5]

Those muscles with attachments further from the joint axis will have larger stabilizing components, and these are called "shunt" muscles, while those that attach closer to the joint axis will have larger rotary components and are called "spurt" muscles. The external pterygoid "spurts" to the "shunt" action of the digastric pair during wide opening.

John V. Basmajian says that the biceps and brachial exemplify spurt muscles at the elbow, whereas the brachioradial is an excellent shunt muscle.[1] In other words, except on complete extension, the biceps or the brachial act as spurt muscles mainly along the long axis of the forearm, providing acceleration along the curve of motion. Action is mainly along the long axis of the forearm to provide the cen-

* Research Director, International College of Applied Kinesiology, Detroit, Michigan

Dental Clinics of North America—Vol. 27, No. 3, July 1983 613

These issues often confound the difficult task relating both to craniomandibular function. Gelb eagerly embraced the wide-ranging diagnostic abilities of AK.

Gelb saw the advantages for using Goodheart's advances in MMT to assist the orthodontist in the difficult task of diagnosis in the oral cavity. Here a millimeter of dysfunction or malocclusion is a great expanse and functional challenges of movement and fit, particularly once the motility of the cranio-sacral system is taken into account.

In 1994 Gelb invited Dr. Walther to contribute a chapter to his book "New concepts in craniomandibular and chronic pain management", and it was titled "Applied Kinesiology and the Stomatognathic System".

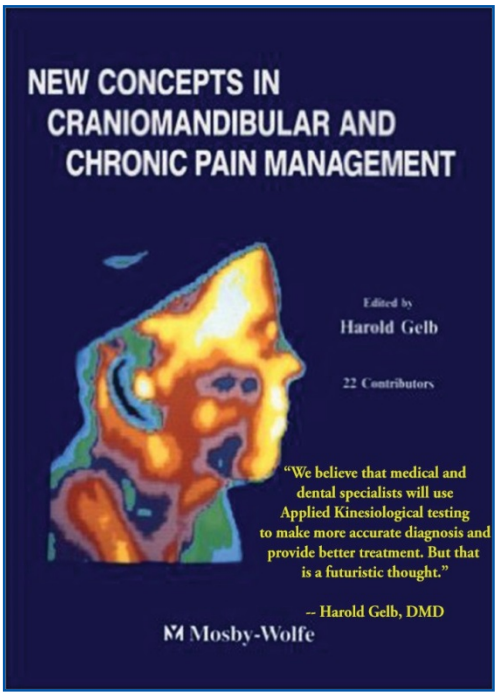
Drs. Aelred Fonder and Robert Ricketts, DDS contributed to Walther's Volume II on the stomatognathic system. Dr. Fonder demonstrated the influence of the stomatognathic system on body balance and the spine by changing the occlusion and mandibular position. He contributed dozens of full spine x-ray images to Walther's textbook showing how spinal x- rays taken before and after the equilibration and mandibular repositioning show specific postural improvements.[68] Clinical changes are often seen throughout the body after making changes in the masticatory system. This shows how the structures within the stomatognathic system are integrated with each other, and how the system is related to total body activity.

Echoing the discoveries made in AK regarding the importance of the stomatognathic system, Hans Selye, MD stated in his introduction to Fonder's book, "I fully support his plea to dentists to realize that they are treating persons who are united wholes, not simply a complex of dental and periodontal tissues."

According to the orthodontist Gerard Smith, DDS: "Entering the field of physiologic dentistry, the dentist must become knowledgeable of the reciprocal inter-relationships between the jaw and the Cranio-Sacral mechanism. The dentist must also learn the effects functional appliances have on the Cranium and Cervical Vertebrae. Discerning these major faults guide the order of treatment and the type of appliances to be used". [69]

Finally, Dr. Gelb offers these glowing words on the promise of AK for the dental profession: [70]

> ***"We believe that medical and dental specialists will use Applied Kinesiological testing to make more accurate diagnosis and provide better treatment. But that is a futuristic thought."***



Applied Kinesiology in Traditional Chinese Medicine

The relationship between internal glands and organs of the body to the external muscle groups and acupuncture meridians opened whole new vistas for AK therapeutics and has been one of the most popular aspects of AK in the wider world.

While the study of energy movement in the body has gone on for thousands of years in the Orient, recent discoveries in the West have added to these tools of diagnosis and treatment. Muscle testing has a special feature to bring to the acupuncture field. Out of all the recent refinements (electro-acupuncture, laser acupuncture, computer diagnosis, etc.), MMT is unique in that it requires no electricity or instruments. This offers simplicity in the office, and ease when away from it. Muscle testing for this reason has become a normal part of many acupuncturists practice. [71-76] It is because muscle testing interacts with the acupuncture meridian system that the usefulness of the Applied Kinesiology approach for acupuncture diagnosis is presented.

How does this new tool enable us to broaden our understanding of the ancient art of Chinese diagnosis? What are the practical applications? TCM, as with any complete system, is large enough so that within itself it contains its own contradictions. For instance, often there is a reluctance to learn and use the 5-Element law in acupuncture practice due to the uncertainty that exists around pulse diagnosis. While pulse taking offers many of the body's secrets in TCM thinking, it takes years to become proficient in order to be able to hear those secrets. Long before the subtleties can be appreciated, however, the basic pulse at the wrist must be read. This informs the TCM clinician of a state of too much or too little energy, or the relative balance of energies in the body. This pulse diagnosis is done for each of the meridians.

Regarding pulse point technique, the current pulses were not introduced until the Han Dynasty in the great text the *Nan Jing*. Before this the pulses were taken at different acupoints with multiple points for each meridian. The newer pulse points are locations on the radial artery, not actual acupoints, where the pulses are palpated to determine their nature for diagnosis.[77] Thus, some AK practitioners prefer to go directly to alarm points to determine which one strengthens an inhibited muscle if it has an acupuncture relationship. With basic knowledge of meridian dynamics this is still very rapid.

Another way to diagnose the meridian energies pulsing through the wrist is through the simple technique of muscle testing. Through systematic testing and comparison of individual muscles, the clinician who understands the positions of the pulse points at the wrist can estimate the flow of Qi along separate meridians. MMT offers *immediate feedback for the doctor and the patient* so that one can already begin using the many complex approaches in TCM like the 5-Element law while, at the same time, learning pulse diagnosis. This method of incorporating the complexities of TCM into the contemporary practitioner's use of CAM is common. [74]

Muscle testing offers a simple tool to read the energetic from the physical. In reading the pulses with the MMT, the current energetic and meridian state of the organism is reported, only in a new form. The pattern of muscle-organ/gland association of the meridians often parallel the relation previously noted with Chapman's and Bennett's reflexes, thus enhancing all of the viscerosomatic relationships. This, along with many associated clinical observations, established the muscle-organ/gland association of Applied Kinesiology. The discovery of the relationship between meridians and meridian points to muscles and muscle groups and their shared visceral connections serve to further support the muscle-organ correlations developed in AK.[46, 78]

Dale lists the six principal clinical methods of diagnosing an aberrant acupuncture point, two of which include the MMT: [73]

1. Tenderness and response to palpation (traditional TCM)
2. Observation of changes in skin color or texture (traditional TCM)
3. Significant change in the electro-permeability of the acupuncture point (Voll, Nakatani, Motoyama)
4. A sudden increase in vascular response at the radial artery when the acupuncture point is aroused (Nogier's vascular-autonomic signal)
5. A significant alteration of muscle testing strength when an acupuncture point is therapy localized, that is, touched (the Applied Kinesiology's approach), and
6. The bi-digital O-Ring test, a scientifically investigated variation of the AK MMT, specifically employing the opponens pollicis muscle (Omura, 1981)

Goodheart introduced meridian therapy into the AK syllabus and wider chiropractic profession in 1966, [79] after noting that imbalances in the meridians could influence the function of the muscular system. Many principles and philosophies from TCM were then added to AK, and AK approaches were added to TCM diagnosis and management, to complement the existing procedures.[13] It is important to note that Goodheart incorporated concepts from TCM that were most important to the AK paradigm and chiropractic profession. For example methods of point stimulation such as acupressure, teishin and manual tapping, are promoted instead of needling techniques. In fact most AK doctors do not use needle acupuncture in practice, but many of them were found to use non-invasive acupuncture treatment. [80]

Medical scholars of the western world believed chiropractic to be little more than a simple biomechanical application with an instinctive (or placebo, ideomotor) action.

However, the work of Goodheart continued to grow over the next 50 years with astounding results to become one of the most used diagnostic techniques in alternative medicine. If the clinical results remained genuine, theories

accepted by the most distinguished and established medical authorities would have to be questioned or discarded. After all, chiropractic and osteopathy are just gaining some recognition of legitimacy in the scientific world after 116 years of clinical history and efficiency.

Controlled clinical trials have discovered that, when a muscle is weak, it can sometimes be strengthened by stimulating the classic acupuncture tonification point for a certain meridian. [81] If the muscle is hypertonic, stimulating the sedation point of the same meridian will bring the muscle back to normal. Moncayo & Moncayo are endocrinologists trained in AK musculoskeletal and endocrinology, who have published a number of papers showing that the AK MMT can diagnose and properly guide acupuncture treatment for patients with endocrine dysfunctions as detected by musculoskeletal examination findings and confirmed by blood testing.[82]

Costaand Araujo [83] demonstrated one of the approaches used in Applied Kinesiology for decades in evaluating the meridian system. They showed that stimulation of the sedation point for the Bladder meridian (acupuncture point Stomach-36) induced decreased strength in the tibialis anterior muscle as measured by electromyography. The tibialis anterior muscle corresponds to the Bladder meridian in AK.

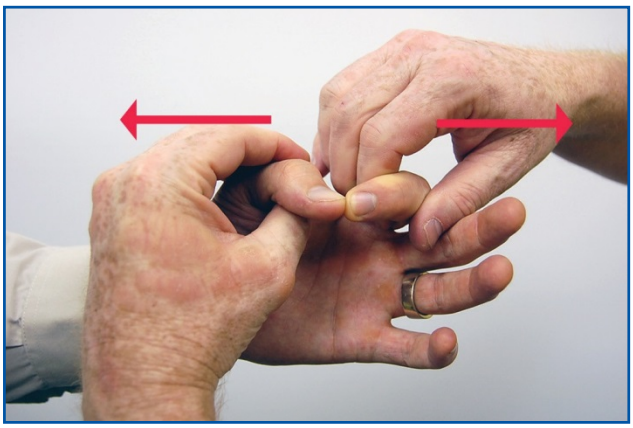
The Bi-Digital O-Ring test of Dr. Yoshiaki Omura

In the late 1970's Yoshiaki Omura (a medical doctor and electrical engineer) developed a method of TCM assessment (using the AK approaches of MMT and TL) that have been utilized in Western medicine, dentistry, veterinary and Oriental medicine. [84] Dr. Omura visited Dr. Goodheart in his office in the 1980s and observed him. (Schmitt, personal communication) Omura has 44 Indexed papers listed in PubMed regarding the effects of Qi and other subtle energy fields and acupuncture areas and points upon the MMT.

Omura noticed that when a slight pressure was applied to skin areas, often related to previous pain, that a decrease in grip strength was observed. Omura noticed that it was possible to test a subject's resistance to having their thumb and finger pried apart from one another when they only held their fingers "tip-to-tip", in opposition to each other. This is the characteristic Bi-digital O-Ring Test (BDORT) for which this method is named. Omura expanded this observation by noting that a patient's O-ring strength could change during contact with various test substances, e.g. specific nutrients, chemicals, pathogens, toxins, etc. He also found that a patient's fingers could more easily be pulled apart during his O-ring testing when the patient came in contact with "unhealthful" items. Conversely, when in contact with "healthful" items, the original finger strength would be maintained.

Following the work of Goodheart, Omura showed [75-76] that when a patient touched their Alarm or Mu point of an organ while simultaneously holding a substance suspected to be toxic to that organ, the BDORT showed a weakening response.

In addition to many journal articles chronicling his observations regarding the BDORT and its usefulness for other diagnostic problems, Omura published two books in Spanish on the BDORT and one in Japanese. A synopsis has also been published of this method, by an electrical engineer who worked with Omura for 20 years. [85] Losco records that "The O-ring test is presently being used by many physicians around the world and it is being taught in some medical schools in Japan, Finland and Venezuela".



Bi-Digital O-Ring Test of Omura

It is fascinating to discover the ripple effect of Goodheart's work extending so far in TCM, to encompass so many cultures and languages. Of course, the BDORT is only a small component of the vast collection of innovative AK methods now used by practitioners who use TCM. However, Omura's crediting Goodheart with many of his innovations in this area is noteworthy.

The contributions and new principles relating to AK and TCM have been used as a springboard for many other techniques and systems, including Scott Walker's *Neuro-Emotional Technique*, [40] John Thie's *Touch for Health,* [86] John Diamond's *Behavioral Kinesiology*, [87] Roger Callahan's *Thought Field Therapy*, [88] Gary Craig's *Emotional Freedom Techniques*, [89] and Fred Gallo and Harry Vincenzi's *Energy Tapping* [90] (among many others) now established in the field of Complementary and Alternative Medicine.

Applied Kinesiology in Complementary and Alternative Medicine

Dr. John Thie, Founder of *Touch For Health*

Dr. Goodheart spoke and honored his former student Dr. Thie at the last* Touch For Health *seminar that Dr. Thie could attend before his untimely passing.

Public awareness of AK and MMT has spread worldwide by virtue of the patient education program Touch for Health (T4H), designed by ICAK Diplomate Dr. John Thie. [86] In 1970, Thie (the first chairman of the ICAKUSA) wanted "kinesiology" to be available for the general public while Dr. Goodheart wanted to continue teaching Applied Kinesiology only to professionals licensed to diagnose and treat patients. Goodheart challenged Thie to write a book for the public. This policy of teaching full-scope Applied Kinesiology only to physicians, and the various lay-systems derived from Applied Kinesiology operating in parallel in their respective fields, remains to this day. Dr. Thie's books on *Touch for Health* are among the best-selling in the self-help and self-healing domains. The English text has sold over 500,000 copies and been translated into 23 languages.

Dr. Thie's vision was to develop a lay person support group like other professions had done (American Diabetic Association, American Cancer Association, Arthritis Foundation, and so on and so on) with the ICAK doctors providing leadership and guidance about natural health methods and the lay part of the group supporting these efforts and spreading the word to other lay people and potential patients as other professions have so successfully done.

In2018,"EnergeticandSpecialized Kinesiologies" are celebrating 35 years of kinesiology in German-speaking countries, 35 years of the IAK, and 30 years of the professional association DGAK. 2018's Touch for Health Kinesiology (TFHK) Association's annual conference marked 43 consecutive years of AK/ TFH/ Educational Kinesiology (EduK)/ SK/ EnK conferences. Their gatherings in the USA (or under the IAK, DGAK and IKC banners in Germany, or the 5th Kinesiology Conference in Moscow, or the 2nd greater China Kinesiology conference in Shenzhen) are at least in part a celebration of the popularization of Applied Kinesiology around the world for lay people and non-physician clinicians.

Energy Medicine and Energy Psychology conferences continue to spread, expandand apply Energetic Kinesiology principles, though often the speakers and attendees are unaware of the roots of their work in AK, TFH or other systems ofKinesiology.

In 1975, when AK and TFH diverged, some of the ICAK physicians objected to sharing Kinesiology methods with the lay public, fearing it could be dangerous, of low quality, or result in a competing profession with a much lower standard of training. As of 2018, the lay peer-to-peer teaching model is alive and well via T4H, Educational Kinesiology, and so many other workshop that have truly spread "Kinesiology" throughout the world, with repeatable, similar benefits, in countless languages, cultures and settings. TFH has been taught in more than 100 countries and at least 23 languages.

A new profession of Specialized Kinesiology or Energy Kinesiology has indeed emerged from Goodheart's "physician only" teachings and continues to grow around the world. It has not resulted in any shortage of "sick people" for all of the AK physicians to help! Indeed, greater mutual awareness and cross-referral will only increase the public knowledge and access to the optimum practitioner for their needs.

Perhaps Energy Psychology has done the most to publishdocumentationof Energy Kinesiologyinterventions in the peer-reviewed journals, primarily through outcome studies using Emotional Freedom Technique (EFT). EFT has probably spread the farthest and the fastest, impacting

Drs. Goodheart and Thie lecturing to chiropractors in 1975

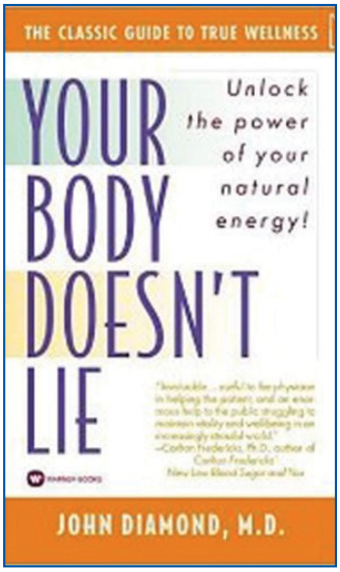
millions of lives, and enhancing the practice of many professionals (and many of them have no idea EFT has roots in Dr. Goodheart's AK and Callahan's Thought Field Therapy (TFT).

For so many years, literally millions of people have known for themselves that "Kinesiology" really works for them, but it is incumbent upon Kinesiologists to produce more orthodox, scientific evidence for its wider acceptance and further development.

Dr. John D. Diamond

John Diamond is a psychiatrist who, after he met Dr. Goodheart, became interested in the psychological and the psychiatric aspects of Applied Kinesiology, "***as I realized it could give us instant access to the unconscious.***" Just as Sigmund Freud (1900) revealed how dreams may prove to be a "royal road" to the unconscious mind, Dr. Diamond has shown how manual muscle testing during psychological questioning functions as another window to hidden motives and emotions. This is what makes Diamond's work so congruent with psychoanalysis and applied kinesiology. The principles of MMT developed in Applied Kinesiology were adapted by John Diamond in his book Behavioral Kinesiology, [87] and form the basis of contemporary 'energy psychology', a popularized form of these psychosocial approaches that originated in Applied Kinesiology. Dr. Diamond has published significant amounts of theoretical and outcomes research related to the diagnosis (using the MMT) and treatment (using psychological, meridian, nutritional, homeopathic, and manual methods) of psychosocial disorders. A review of his writings and research should be made by anyone wishing to expand their knowledge in the area of psychosocial dysfunction.

Dr. John Diamond was the first medical clinician-scientist in the psychological field to use and scientifically write about the meridian system's influence on human psychological behavior and the link between the acupuncture meridians and emotions. Diamond is a psychiatrist and past president of the International Academy of Preventive Medicine, and was critical in bringing many leaders in the field of **C.A.M.** to Goodheart's attention, as well as bringing Goodheart's work to many leaders in the C.A.M. community. Diamond's pioneering concepts, together with some of the concepts developed by Goodheart in Applied Kinesiology, form the basis on which a new method of holistic psychology developed, and from his work the new field of "energy psychotherapy" emerged. [91]



Dr. Diamond with Dr. Goodheart

Dr. Goodheart said "Dr. John Diamond has been a friend and physician colleague for over thirty years. He alone deserves a Nobel Prize for his accurate observations on the acupuncture meridians and emotions." From his initial work Dr. Diamond has spent 35 years developing methods of diagnosing and treating what he calls "The Acupuncture Emotional System", associating the major positive and negative emotions with each meridian and thereby offering one possible pillar for psychosomatic medicine. In his view the acupuncture system is the communicating link between the emotions, the organs, and the muscles.

Dr. John Diamond demonstrates "psychological challenge" as used in AK with his own manual muscle test

Diamond's work also had a strong influence on the renowned osteopath Robert Fulford, D.O., with whom he corresponded. Fulford found Diamond's book Life Energy essential, (1985) and his discussion of birth trauma were critical to Dr. Fulford's development of methods to release cranial injuries in children at birth. Diamond relates issues of fear, hate, and envy that may accompany the infant's leaving the comfort of the womb. As a whole Diamond's work suggests that the body and the psyche progress in parallel during the developmental process, and that interventions aimed at improving the emotional-adaptive response to the birth experience and life traumas is fundamental for the patient's development and well-being. Diamond was instrumental in the meetings between Dr. Goodheart and Dr. Willie May, and the salutary results from this interaction have been extensively published in the biomedical and chiropractic professions.

Dr. Diamond's work was the first in the psychological field to use and scientifically write about the meridian system's influence on human behavior. His pioneering concepts, together with some of the advanced concepts in Applied Kinesiology, formed the basis on which the new field of "energy psychotherapy" developed.

A brief summary a few of the contributions of Dr. Diamond are as follows:

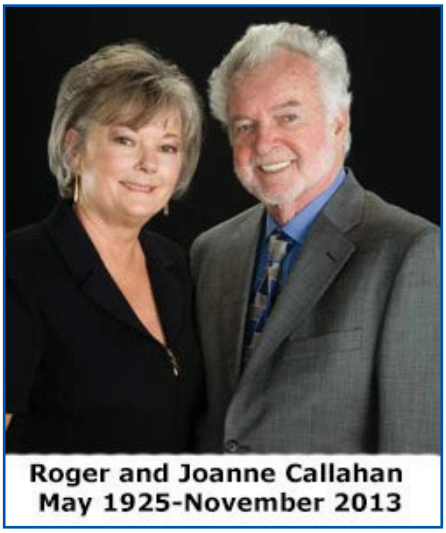
- Dr. Diamond identified the links between specific meridians and emotions.
- Dr. Diamond discovered how muscle testing of meridian, acupuncture, and alarm points could be used to identify the meridian imbalance underlying an emotional state.
- Dr. Diamond discovered how meridian imbalance may occur in layers, and how these may correspond to layers of emotions. Thus, he used muscle testing to identify the sequence of meridians that required treatment in relation to a particular emotional problem. The complexity of the human psyche was found to be reflected in the complex adaptations made by the human muscle and meridian system.
- Dr. Diamond suggested that manual muscle testing could be extended to exploring emotional truth, as well as the impact of all manner of mental stimuli upon the measurable human muscular system.
- Dr. Diamond discovered how meridians that are out of balance may be corrected by specific affirmations.
- Thus, Dr. Diamond discovered an efficient way of identifying how the meridian system is out of balance in relation to an emotional problem, fear or phobia, and how to correct this.
- Dr. Diamond also identified profound obstacles to healing, such as the "reversal of the body's morality" (what is called "psychological reversal" in AK)."
- Diamond's work led to profound elaborations on the use of the manual muscle test and AK approaches in many diverse but associated systems of treatmentin the field of "energy psychology" and "kinesiology".

Dr. Roger Callahan

Dr. Phil Mollon (one of the leading writers in the new field of "energy psychotherapy") credits Dr. Goodheart with a fundamental contribution to the development of this new field of study. Dr. Mollon's history of Goodheart's contributions in this area is exhaustive. [91]

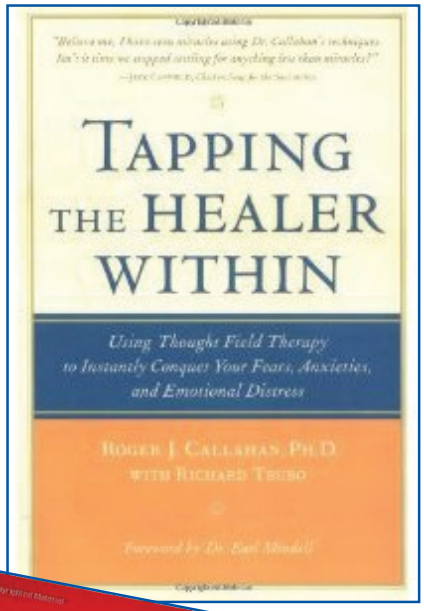
Emotional Freedom Techniques, commonly known as "EFT," is a popular and form of "energy psychology". Its founder Gary Craig (an engineer) gives Dr. Goodheart credit for its development. Dr. Goodheart demonstrated the effect of the meridian system upon human function for Mr. Craig and his teacher Dr. Roger Callahan, and from their use of these insights, developed methods that have spread to literally millions of people around the world.

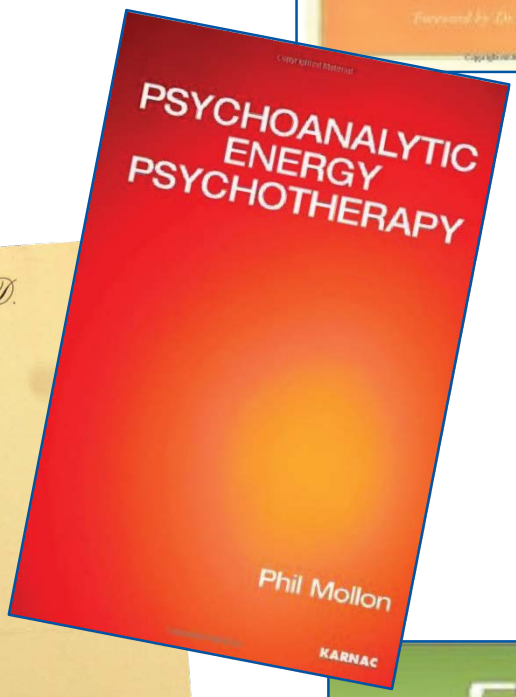
It has now been estimated (by taking a census of the number of students taught by Kinesiology teachers around the world) that the MMT and the basic factors of therapy introduced by Dr. Goodheart for physicians in the early 1960s is now practiced by over 1 million people around the world. [1]

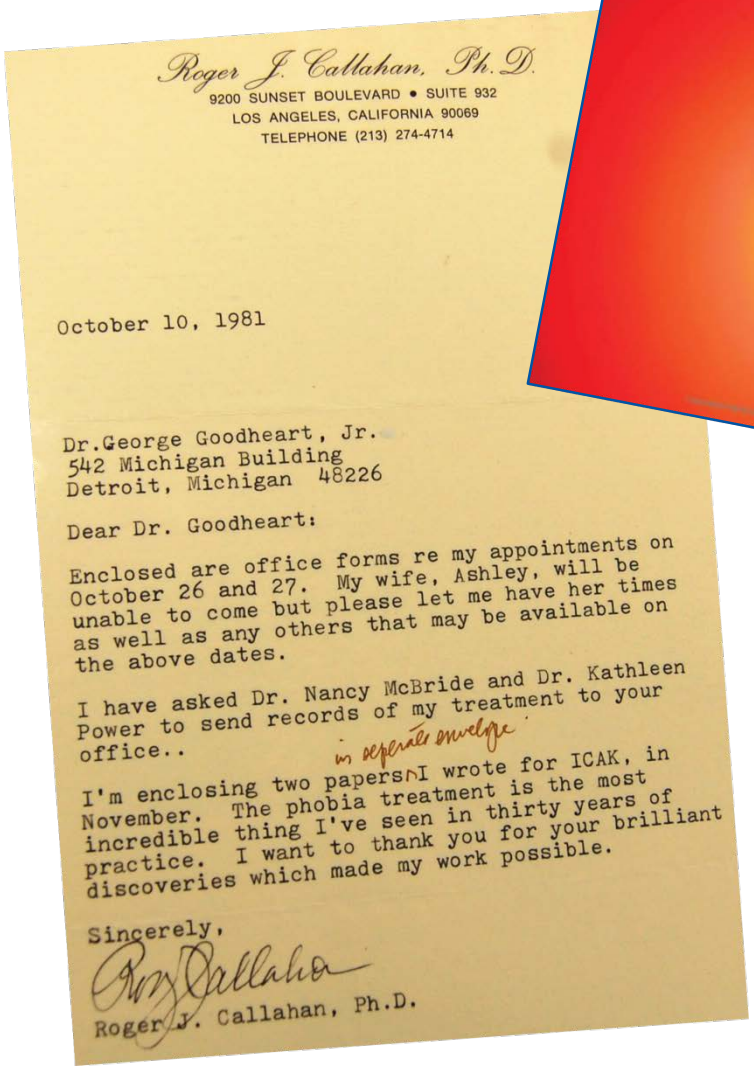


Roger and Joanne Callahan
May 1925-November 2013

Founder of *Thought Field Therapy* and other mental health approaches derived from Goodheart's discoveries.







Roger J. Callahan, Ph.D.
9200 SUNSET BOULEVARD • SUITE 932
LOS ANGELES, CALIFORNIA 90069
TELEPHONE (213) 274-4714

October 10, 1981

Dr.George Goodheart, Jr.
542 Michigan Building
Detroit, Michigan 48226

Dear Dr. Goodheart:

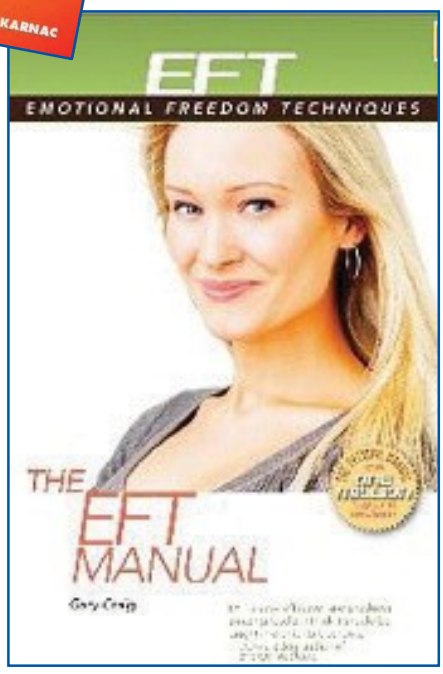
Enclosed are office forms re my appointments on October 26 and 27. My wife, Ashley, will be unable to come but please let me have her times as well as any others that may be available on the above dates.

I have asked Dr. Nancy McBride and Dr. Kathleen Power to send records of my treatment to your office..

I'm enclosing two papers I wrote for ICAK, in November. The phobia treatment is the most incredible thing I've seen in thirty years of practice. I want to thank you for your brilliant discoveries which made my work possible.

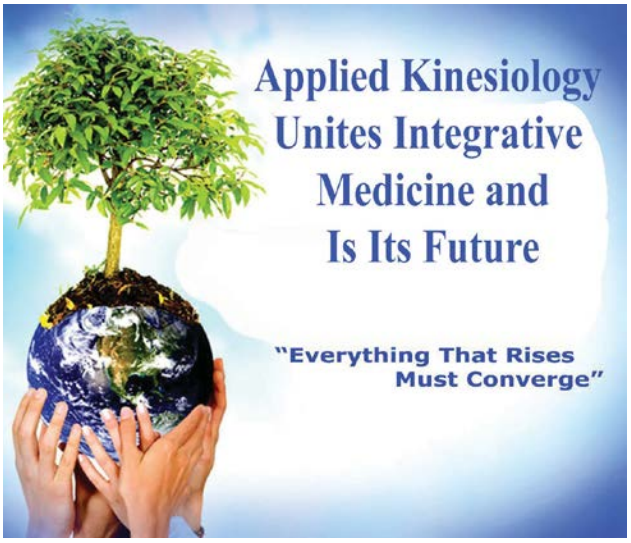
Sincerely,

Roger J. Callahan, Ph.D.

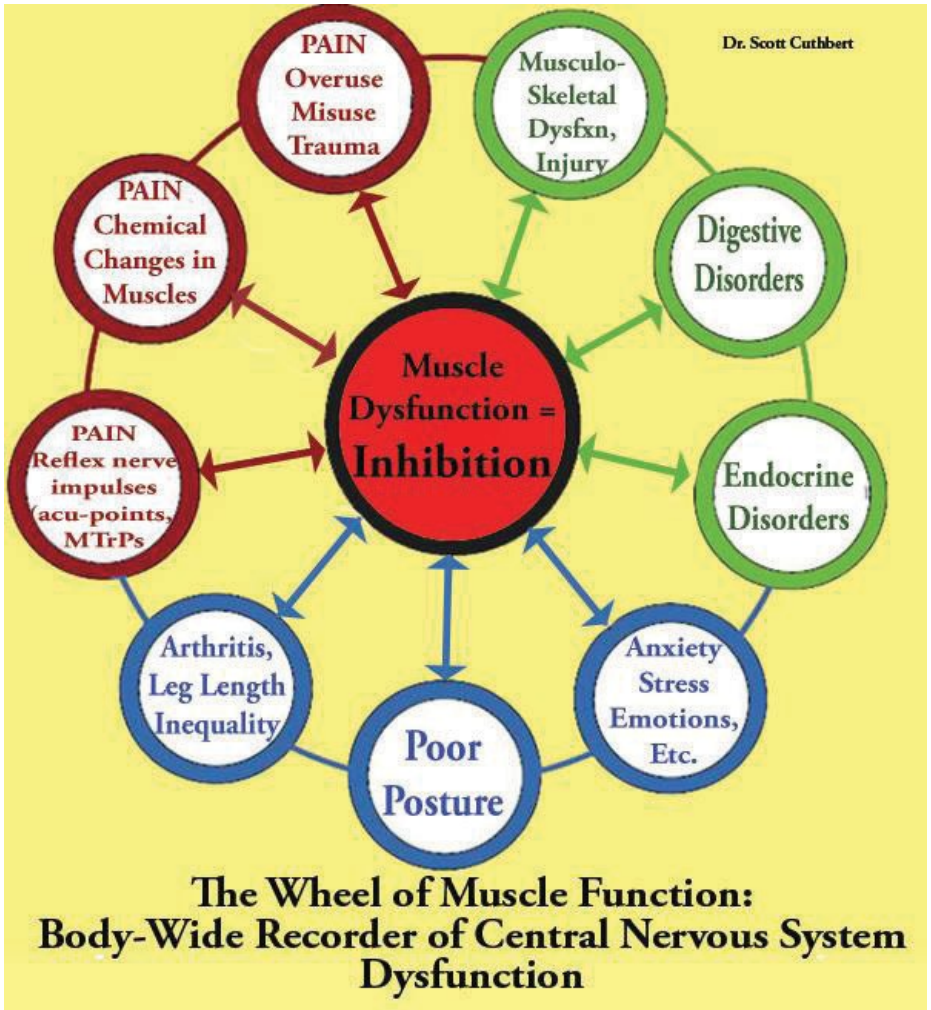


Professional Applied Kinesiology is Mapping New Territories Around the World

Despite the incessant expansion, evolution and redevelopment, much of the original AK approach has stood the test of time and persists in its essentials among the hundreds of thousands of MMT practitioners around the world. The voluntary skeletal muscular system is the source and the recipient of the greatest neural activity in the body, and therefore the AK clinician is one of the most comprehensive "diagnosticians" of human function and malfunction at work in the world today.



Dr. Goodheart and the ICAK have dedicated their lives to the future of integrative healthcare and its realization with Applied Kinesiology. This passion for functional diagnosis – "diagnose the need, supply the need, observe the result" – for the most unusual and the most common patient problems has been shared at chiropractic, osteopathic, medical, and dental colleges, seminars, and lecture-tours all over North America, Europe, Australia and Asia. Hailed as a friend and inspiration to many, Dr. Goodheart is a man to be remembered, honored, and modeled. The numbers of clinicians and healing professions that are using and developing AK demonstrate that many of the most famous doctors in the orthodox and complementary and alternative medicine world felt that "the Goodheart's approach" was invaluable because it focused on measurable physical factors which make up the constellation of dysfunctions affecting the person's total health picture and happiness.



The Wheel of Muscle Function: Body-Wide Recorder of Central Nervous System Dysfunction

References

1 Jensen AM. Estimating the prevalence of use of kinesiology-style manual muscle testing: A survey of educators. Adv Integr Med (2015).

2 Peterson D, Wiese G. Chiropractic: An Illustrated History. St. Louis: Mosby; 1995:387.

3 ChiroAccess Applied Kinesiology Technique: http://www.chiroaccess.com/Articles/Tech nique-Summary-Applied-Kinesiology.aspx?id=0000144.

4 Palmer DD. The chiropractors adjustor: the science, art and philosophy of chiropractic. Portland Printing House: Portland, OR; 1910:7.

5 Boden SD, et al. Abnormal magnetic-resonance scans of the cervical spine in asymptoma tic subjects. A prospective investigation. J Bone Joint Surg Am. 1990Sep;72(8):1178-84.

6 American Chiropractic Association (Choosing Wisely®), 2018. http://www.choosingwisely.org/societies/american-chiropractic-association/.

7 Canterbury R. Radiography and chiropractic spinography. In: Peterson D, Wiese G, Ed s. Chiropractic: An illustrated history. Mosby: St Louis; 1995.

8 Bass MJ, Buck C, Turner L, Dickie G, Pratt G, Robinson HC. The physician's actions an d the outcome of illness in family practice. J Fam Pract. 1986;23(1):43-7.

9 Schmitt WH, Cuthbert SC. Common errors and clinical guidelines for manual muscle te sting: The "arm test" and other inaccurate procedures. Chiropr Osteopat. 2008;16:16.

10 McDowall D, et al. Tone as a health concept: An analysis. Complement Ther Clin Pract. 29, Nov 2017:27-34.

11 Owens C. An Endocrine Interpretation of Chapman's Reflexes, 2nd edition. Newark, O H: American Academy of Osteopathy, 1937, Preface.

12 Schmitt WH Jr, Yanuck SF. Expanding the neurological examination using functional n eurological assessment. Part II: Neurological basis of Applied Kinesiology. International Journal of Neuroscience 1998; 97(1-2).

13 Gin RH, Green BN. George Goodheart, Jr., D.C., and a history of applied kinesiology. J Manipulative Physiol Ther. 1997 Jun;20(5):331-7.

14 International College of Applied Kinesiology, Deutschland. http://www.icak-d.de/.

15 C. Perot, F. Goubel, R. Meldener. 1986, Quantification de l'inhibition de la force muscul aire suite a l'application d'une manoeuvre chiropractique. Journal de Biophysique et de Biomécanique, Volume 10, Supplément au N°1.

16 And in English as: C.Perot, R.Meldener, F.Goubel, 1991, Objective measurement of Pro prioceptive Technique Consequences on Muscular Maximum Voluntary Contraction du ring Manual Muscle Testing. Agressologie, 1991.

17 Gerz W. Lehrbuch der Applied Kinesiology (AK) in der naturheilkundlichen Praxis. (in German). AKSE-Verlag, Munchen; 2001.

18 Garten H. Applied Kinesiology, der Lehrfilm. 1996, München: Video Commerz.

19 Garten H. Applied Kinesiology, Muskelfunktion, Dysfunktion und Therapie. 2 ed. 2012, München: Urban&Fischer, Elsevier.

20 Garten H, Weiss G. Systemische Störungen - Problemfälle lösen mit Applied Kinesiology. 2007, Urban und Fischer: München.

21 Burtscher E, et al.. AK-Meridiantherapie (AKMT). 2001, AKSE: Wörthsee.

22 Garten H. Lehrbuch Applied Kinesiology Muskelfunktion-Dysfunction-Therapie. (in Ge rman) Urban & Fischer, Munich; 2004.

23 Gerz W. Applied Kinesiology in der naturheilkundlichen Praxis. 2000, AKSE-Verlag: W örthsee.

24 Garten H. Das Muskeltestbuch. München: Urban & Fischer; 2007.

25 Ramsak I, Gerz W. AK-Muskeltests auf einen Blick. 2 ed. 2004, Wörthsee: AKSE.

26 Ramsak I. Handbuch der AK-Muskeltests. 2007, Wien: Verlagshaus der Ärzte.

27 Lines D, McMillan A, Spehr G. Effects of Soft Tissue Technique and Chapman's Neurolymphatic Reflex Stimulation on Respiratory Function. J Aust Chiro Assoc 1990 Mar; 20 (1): 17-22.

28 McDowall D. The growth of Applied Kinesiology education. Thesis paper, RMIT Univer sity.

29 LeBoeuf C. A Survey of Registered Chiropractors Practicing in South Australia in 1986. J Aust Chiro Assoc 1988:105-10.

30 Goodheart GJ. Applied Kinesiology Research Manuals. Detroit, MI: Privately published; 1964-1998. Available at: Available at: http://www.icakusa.com/products/products.php.

31 Keating J. Toward a philosophy of the science of chiropractic: a primer for clinicians. St ockton Foundation for Chiropractic Research, Stockton, CA. 1992:91.

32 Gelb H. Clinical Management of Head, Neck and TMJ Pain and Dysfunction. W.B. Saun ders, Philadelphia, PA, 1977.

33 Goodheart, GJ, Jr. 1976. Kinesiology and Dentistry. J Amer Soc Psychosomatic Disease 6:16-18.

34 Scopp A. 1979. An Experimental Evaluation of Kinesiology in Allergy and Deficiency Disease Diagnosis. Journal of Orthomolecular Psychiatry. 7(2):137-8.

35 Available at: http://appliedkinesiologyresearch.blogspot.com/, and http://icakusa.com/co ntent/research.

36 Cuthbert SC, Goodheart GJ Jr. On the reliability and validity of manual muscle testing: a literature review, Chiropr Osteopat. 2007 Mar 6;15(1):4.

37 Walther DS. Applied Kinesiology, Synopsis, 2nd Edition. (translated into Italian, French and Korean). Available at: http://www.icakusa.com/products/products.php.

38 Cuthbert S, Blaich R, Markham B. David S. Walther, DC, DIBAK: Scholar, Researcher, Politician and Teacher. Chiropractic History. 2013;33(1):10-27.

39 Pollard HP, Hardy KE, Curtin D. Biopsychosocial Model of Pain and Its Relevance to C hiropractors. J Chiropr Austral. 36(2):82-91.

40 Walker S. Neuro Emotional Technique. http://www.netmindbody.com/, 2018.

41 Rosner AL, Cuthbert SC. Applied kinesiology: distinctions in its definition and interpret ation. J Bodyw Mov Ther. 2012 Oct;16(4):464-87.

42 Hartman SE. Cranial osteopathy: its fate seemsclear. Chiropr Osteopat. 2006 Jun 8;14: 10.

43 Reply to Hartman:https://chiromt.biomedcentral.com/articles/10.1186/1746-1340-14-10/ comments.

44 Lewis. J. A.T. Still: From the dry bone to the Living Man. 2012.

45 Cuthbert S, Walther DS, et al. Applied Kinesiology: Clinical Techniques for Lower Body Dysfunctions. Availableat:https://www.thegangasaspress.com/ak-lower-body/.

46 Cuthbert S, Walther DS, et al. Applied Kinesiology Essentials: The Missing Link in Health Care. Available at: https://www.thegangasaspress.com/ak-essentials/.

47 Travell JG, Simons DG. Perpetuating Factors. In: Myofascial Pain and Dysfunction: Th e Trigger Point Manual, 2nd Ed. Vol 1. Williams & Wilkins: Baltimore; 1999:103-164.

48 Mense S, Simons DG. Muscle Pain: Understanding Its Nature, Diagnosis, and Treatment. Lippincott Williams & Wilkins: Philadelphia; 2001.

49 Palomar J, Isaikin AI, Svet MS, Alekseev AV.Neuroreceptor therapy. The method of pr oprioceptive-deep tendon (P-DTR) in functional neurology. From theory to practice. Rus sian Pain Magazine. 2017:82-86.

50 Day S. Sports Chiropractic: The History of Chiropractic at the Olympic Games, 1976- 2010. Chiropractic History. 2010: 30(1), 35-44.

51 Weiskopf H. The Good Hands Man: Chiropractor Leroy Perry has won ardent support among top athletes with methods that mystify and annoy M.D.s. Sports Illustrated: July 16, 1979: 34-39.

52 Article on Dr. Jean Pierre Meersseman: https://www.theguardian.com/football/2013/feb/16/milan-lab-premier-league.

53 http://www.atpworldtour.com/en/players/jack-sock/sm25/bio.

54 Profile Dr. Craig Buhler: https://fitness.mercola.com/sites/fitness/archive/2013/01/04/adv anced-muscle-integration-technique.aspx.

55 Ratner EJ, et al. Jawbone cavities and trigeminal and atypical facial neuralgias. Oral Su rg Oral Med Oral Pathol. 1979 Jul;48(1):3-20.

56 LeeR. Dental Infections and related Degenerative Diseases. J Am Med Assoc. 1925;84(4):254-261.

57 Lee R. Dental Infections, Oral and Systemic. Penton publishing company: Cleveland, O H; 1923.

58 Goymerac B, Woollard G. Focal infection: a new perspective on an old theory. General d entistry. 2004;52(4):357-61; quiz 362, 365-6.

59 Glickman LT, et al. Evaluation of the risk of endocarditis and other cardiovascular even ts on the basis of the severity of periodontal disease in dogs. Journal of the American Vet erinary Medical Association. 2009;234(4):486-94.

60 Somma F, et al. Oral inflammatory process and general health. Part 1: The focal infectio n and the oral inflammatory lesion. European review for medical and pharmacological s ciences. 2010;14(12):1085-95.

61 Murray CA, Saunders,WP. Root canal treatment and general health: a review of the lite rature. International endodontic journal. 2000;33(1):1-18.

62 Medical Journal of Applied Kinesiology, 2012.

63 Bergamini M, et al. Dental occlusion and body posture: a surface EMG study. Cranio. 20 08 Jan;26(1):25-32.

64 Crisera P.Cranio-Sacral Energetics: Volume 1. Privately Published: Rome; 1997.

65 Cuthbert S. Diagnostic Corner: An integrative chiropractic approach to temporomandib ular disorders. DC Tracts: Data Trace Publishing Company. 23(4); 2011:4-12.

66 Sakaguchi K, Mehta NR, Abdallah EF, Forgione AG, Hirayama H, Kawasaki T, Yokoya ma A. Examination of the relationship between mandibular position and body posture. Cranio. 2007;25(4):237-49. (Research conducted at Tufts Craniofacial Pain Center)

67 Gelb H, Mehta NR, Forgione AG. The relationship between jaw posture and muscular st rength in sports dentistry: a reappraisal. Cranio. 1996 Oct;14(4):320-5.

68 Fonder AC. The Dental Physician. Medical Dental Arts; 1985.

69 Smith G. Cranial-Dental-Sacral Complex. Privately published, Newtown, PA, 1983.

70 Gelb H, Ed. New concepts in craniomandibular and chronic pain management. Mosby- Wolfe: Times Mirror Int. Publishers Ltd. 1994.

71 Moncayo R, Moncayo H. Evaluation of Applied Kinesiology meridian techniques by mea ns of surface electromyography (sEMG): demonstration of the regulatory influence of an tique acupuncture points. Chin Med. 2009;4(1):9.

72 Gerz W, Cannengeiber C. AK Meridian System Acupuncture. Applied Kinesiology Semi nars Europe, Notes. Riga; 2005.

73 Dale RA. The Systems, Holograms and Theory of Micro-Acupuncture. Am J Acupunct. 1999;27(3-4):207-242.

74 Larson D. Physical balancing: Acupuncture and Applied Kinesiology. Am J Acupunct. 1 985;13(2):159-162.

75 Omura Y. Meridian-Like Networks of Internal Organs, Corresponding to Traditional C hinese 12 Main Meridian and Their Acupuncture Points as Detected by the Bi-Digital O- Ring Test Imaging Method: Search for the Corresponding Internal Organ of Western M edicine for Each Meridian-Part I. Acupuncture Elec. 1987;12:53-70.

76 Omura Y. New simple early diagnostic methods using Omura's "Bi-Digital O-Ring Dysf unction Localization Method" and acupuncture organ representation points, and their a pplications to the "drug & food compatibility test" for individual organs and to auricular diagnosis of internal organs--part I. Acupunct Electrother Res. 1981;6(4):239-54.

77 Amaro J. Contemporary Acupuncture Diagnosis: Electro-Meridian Diagnosis. Acupunct ure Today. 2002;3(9).

78 Corneal JM, Dick R. An attempt to quantify muscle testing using meridian therapy/acup uncture techniques. Collected Papers International College of Applied Kinesiology. Wint er, 1987:59-78.

79 Goodheart GJ, Jr. Chinese lessons for modern chiropractic. Chiro Econ. 1966;8(5).

80 Applied Kinesiology in Chiropractic. Zhang J, Hambrick T, Conable K. J Chiropr Educ. 2006;20(1):112.

81 Moncayo R, Moncayo H, Ulmer H, Kainz H. New diagnostic and therapeutic approach t o thyroid-associated orbitopathy based on Applied Kinesiology and homeopathic therapy. J Altern Complement Med. 2004;10(4):643-50.

82 Moncayo R, Moncayo H. A musculoskeletal model of low grade connective tissue inflam mation in patients with thyroid associated ophthalmopathy (TAO): the WOMED concep t of lateral tension and its general implications in disease. BMC Musculoskelet Disord. 20 07 Feb 23;8:17.

83 Costa LA, de Araujo JE. The immediate effects of local and adjacent acupuncture on the tibialis anterior muscle: a human study. Chin Med. 2008 Dec 18;3:17.

84 BDORT, 2018. http://bdort.org/.

85 Losco M. Suggestions for performing the bi-digital O-ring test. Acupun Elec. 1991;16:53-64.

86 John Thie. Touch for Health, 2018. http://www.touch4health.com/.

87 Diamond J, 2012. http://www.drjohndiamond.com/the-works-of-john-diamond-md.

88 Mollon P. Psychoanalytic Energy Psychotherapy. Karnac Books Ltd.: London; 2008.

89 Callahan R. Thought Field Therapy, 2018. http://www.tftfoundation.org/research-on-thought-field-therapy/research.

90 Craig G. The EFT Manual, 2nd Ed. Energy Psychology Press: Santa Rosa, CA; 2012.

91 Gallo F, Vincenzi H. Energy Tapping: How to Rapidly Eliminate Anxiety, Depression, C ravings, and More Using Energy Psychology, 2nd Ed. New Harbinger Publications: Oakland; 2008.