

Applied Kinesiology Essentials

by **Scott C. Cuthbert, BA, DC**

During the past 3000 years, many diagnostic methods have been developed to discover the causes of human pain and dysfunction. In 1964, a significant step forward in the evaluation of neurological disturbances related to functional-structural impairments was made by the chiropractor Dr. George J. Goodheart Jr. and his development of applied kinesiology (AK).¹⁻⁴

The manual muscle testing (MMT) applications that Goodheart delineated have been taken up by practitioners in a broad cross-section of the healing arts, including chiropractors, osteopaths, psychologists and psychiatrists, acupuncturists, nutritionists, naturopaths, bodyworkers, and kinesiologists. AK's approach to specific health problems has been presented in the *Townsend Letter*; however, a broad overview of the neurophysiology underlying this unifying concept of health-care diagnosis has not been published before.⁵⁻⁷

Influence of AK Worldwide

Goodheart's work drew a large following of doctors and recognition. He was the first chiropractor officially appointed to the US Olympic Sports Medicine team.⁸ In 1976 the International College of Applied Kinesiology was founded to promote the research and teaching of AK.⁹ In Europe, some 3000 MDs and osteopaths now use AK as part of their diagnostic regimen.

The first book to describe the value of AK to other professions, *AK and the Stomatognathic System*, was authored by Harold Gelb, a dentist, and Goodheart in 1977.¹⁰ Gelb founded the Craniomandibular Pain Center at Tufts University College of Dental Medicine in Boston, Massachusetts. He and his team have been using MMT 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



Figure 1: The “Triad of Health” suggests that structural, biochemical, and psychosocial factors are components in functional disorders that are amenable to manual muscle testing assessment and treatment.

body of research on the relationship between muscle imbalances and TMD.^{11,12} Significant inroads into the dental profession have been made by AK.¹³⁻¹⁵

Many other “name techniques” have evolved from AK that also incorporate many of the same MMTs and neurological reflexes and procedures as part of their diagnostic systems, including Neuro Emotional Technique (NET), Neural Organization Technique (NOT), clinical kinesiology, Contact Reflex Analysis (CRA), Total Body Modification (TBM), Thought Field Therapy (TFT), behavioral kinesiology (BK), and Ulan Nutritional Systems, in addition to nearly 100 systems of “kinesiology” around the world.¹⁶⁻²² Emotional Freedom

Technique, commonly known as EFT, is a popular form of “energy psychology” and has been described in the *Townsend Letter*. Its founder, Gary Craig (an engineer from Stanford), gives Goodheart credit for its development. Goodheart demonstrated the effect of the meridian system upon human muscle function for Craig and his teacher Dr. Roger Callahan (the founder of TFT) and, from their use of these insights, developed methods that have spread around the world.²³ The ability to improve mental health problems with applied kinesiology techniques is now beginning to emerge, with much credit going to the innovative techniques of the chiropractors Goodheart and Walker, the psychiatrist John Diamond, the psychologists Roger Callahan and Fred Gallo, and many others.

In 1970, Dr. John Thie (the first chairman of the International College of Applied Kinesiology USA) wanted “kinesiology” to be available for the general public, while Goodheart wanted to continue teaching AK only to professionals licensed to diagnose and treat patients. Goodheart challenged Thie to write a book for the public. Thie's book *Touch for Health* is a best-seller in the self-help domain.²⁴

Before AK's expansion of the applications to which the MMT could be put, the actual testing of muscles had been firmly established by Kendall and Kendall, who held that a muscle from a contracted position against increasing applied pressure could either maintain its position (rated as "facilitated" or "strong") or break away and thus be rated as "inhibited" or "weak."²⁵ The testing of muscle strength itself has been widely practiced in manual medicine for almost a century, whose reliability and validity have recently been shown.²⁶⁻³⁰



Figure 2: Hamstring Manual Muscle Test

Since the original discovery that muscle inhibition related to neurological disturbances and could be used to diagnose neuromuscular problems, the AK examination system has broadened to include evaluation of nutritional, acupuncture, cerebrospinal fluid, lymphatic and vascular function, and many other controlling or disturbing factors that influence health and neurological function.¹⁻⁴ The investigation of these other causes of muscle weakness and their correction developed into the current practice of AK for the broad number of different professions that use it for their own purposes. Each of these areas of human function has been shown to affect the muscular system, and AK and allied health systems' research evidence in this regard is constantly growing.^{9,31} Even the American Medical Association has accepted that the standard method of MMT used and taught in AK is a reliable tool and advocates its use for the evaluation of disability impairments.³²

Knowing precisely what a specific malfunctioning factor in patients' functional ensemble does to muscle strength can greatly enhance their understanding of their health problem. As is well known in modern therapeutics, the location of a primary complaint does not necessarily correlate with the symptoms for which the patient seeks care. Take for example the patient whose low back "slips out" when he bends over to pick up a pencil. He thinks that bending over caused the incident; the doctor knows that the spine does not usually develop a problem from such simple activity. There probably was a subclinical and preexisting condition in the area in the form of muscular imbalance or pathology. This may be why the MMT has the predictive capacity to diagnose problems before they emerge.^{30,33}

Principles and Theories

When muscle dysfunction is found, the clinician proceeds with examination to find what therapy restores proper function. Application of the therapy, if successful, *immediately* improves muscle function. Reexamination at a later time determines if the correction is maintained. Thus the system (1) finds disturbance, (2) determines how to fix it, (3) determines if the corrective effort is successful, and, most importantly, (4) determines if the correction is stable. If the correction is not stable, further examination is done to find the reason so it can be eliminated.

But what distinguishes AK is its emphasis upon proprioceptive responses of the muscle rather than the strength of the muscle itself. It essentially sees muscle function as a transcript of the central integrative state of the anterior horn motor neurons, summing all excitatory and inhibitory inputs from the entire organism.³¹ In other words, the locus of muscle dysfunction ultimately rests with the nervous system.

Diagnostic Tools: 'Challenge' and 'Therapy Localization'

Sensorimotor "challenge" is a diagnostic procedure unique to AK that is used to determine the body's ability to cope with external stimuli, which can be physical, chemical, or emotional. Challenge defines a mechanism to test the body's ability to cope with external stimuli, again assessed by muscle testing.³⁴ The use of challenge assessments gives the clinician important clues as to what removes the inhibitions of muscles associated with functional pain syndromes and health problems. The appropriate "challenge" will also remove synergist substitution employed by the patient, particularly during the MMT, because of pain.^{35,36}

After an external stimulus is applied, muscle-testing procedures are done to determine a change in the muscle strength as a result of the stimulus. Through this approach, ineffective therapies that produced no improvements in muscle strength are rejected and only those that elicit a positive muscle response are used. This guides the treatment given to a patient.

Nutritional challenge as used in AK was explored and a literature review given in a recent issue of the *Townsend Letter*.⁵ Structural (or joint challenge) has been described in the AK outcomes research literature from the beginning, and all of the evidence for this approach was recently offered.^{2,3} Cranial challenge has been described in the literature previously.^{37,38}

Psychological challenge has been described by Mollon and Monti and many others.^{39,40} Monti et al. have shown that if the emotional stress is strong enough, almost any muscle in the body will show the inhibition.⁴⁰ A review of the published outcomes research in this area offered by Walker, Callahan, and Mollon elaborates on these ideas.^{16,21,39} Mollon's history of AK's contributions in this area is exhaustive.³⁹



Applied Kinesiology

Another procedure unique to AK and allied schools of therapeutics is called *therapy localization* (TL).⁴¹ TL seeks a change of muscle strength when the patient's hand is placed over an area of suspected involvement. The neurophysiology of therapy localization has been updated in two recent textbooks and at the 3rd International Association of Functional Neurology and Rehabilitation Conference.^{2,3,42} This method is hypothesized to assist the doctor in finding areas that are involved with the muscle dysfunction found on MMT. Pollard et al. in a recent literature review presented some of the research about the AK concept of therapy localization.⁴³ Collectively these data suggest that stimulating the skin and the cutaneomotor reflexes can produce changes in muscle function.

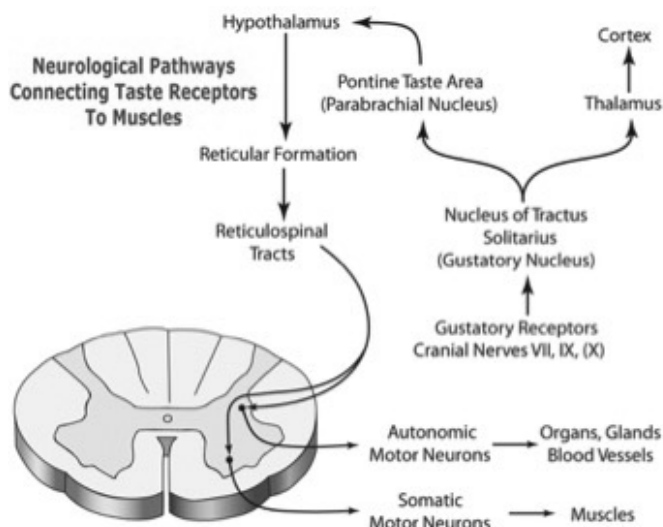


Figure 3: AK Nutritional Challenge

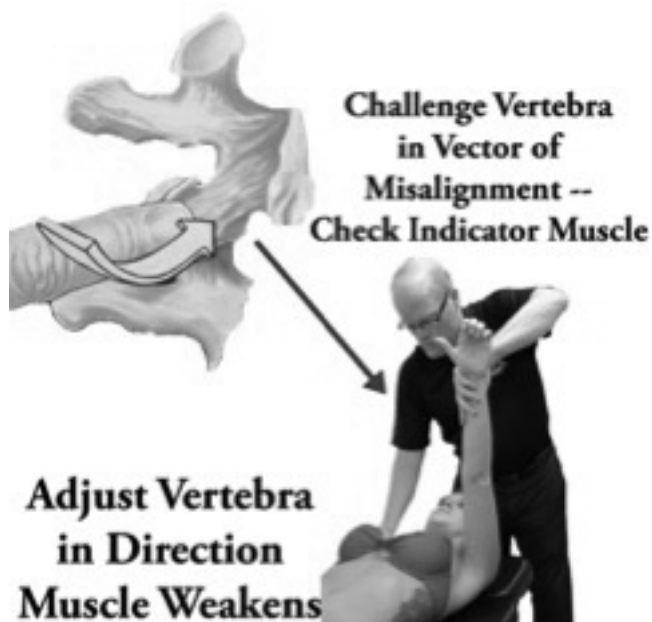


Figure 4: AK Vertebral Challenge



Figure 5: AK Cranial Challenge



Figure 6: AK and Acupuncture Point (Bladder-1) Therapy Localization

It is also characteristic of AK assessment procedures to move from the examination of the patient into the treatment almost immediately.⁴⁴ As a clinician searches for information through the manual muscle test, the appropriate challenge or therapy localization to the responsible tissue or remedy will turn "finding" into "fixing." One treatment modality accompanies another as a rather "custom made" application is created that not only varies from patient to patient but should vary from one session to the next for a particular individual as a condition improves.

Applied Kinesiology's Future in the Management of Stress-Related Illness

Since 1964, the AK model has aimed to integrate the physical, biochemical, and psychosocial manifestations of musculoskeletal pain. This integrative model is overdue in the conceptualization and investigation of neuromusculoskeletal pain and psychological and biochemical imbalances. This model may also provide an evidence-based rationale for the integration and appropriate timing of complementary and alternative medicine (CAM) treatments directed toward physical (biological) impairments, and biochemical and psychological factors. It is suggested that this integrated approach will be the way forward in the management of pain as well as stress-

related and lifestyle illnesses, rather than the dichotomous separation of physical, biochemical, and psychological factors that so often occurs in research and practice.

There are now over 100 papers published in peer-reviewed journals on the methods and outcomes of AK.^{2-4,45} Few CAM therapeutic methods have been investigated or

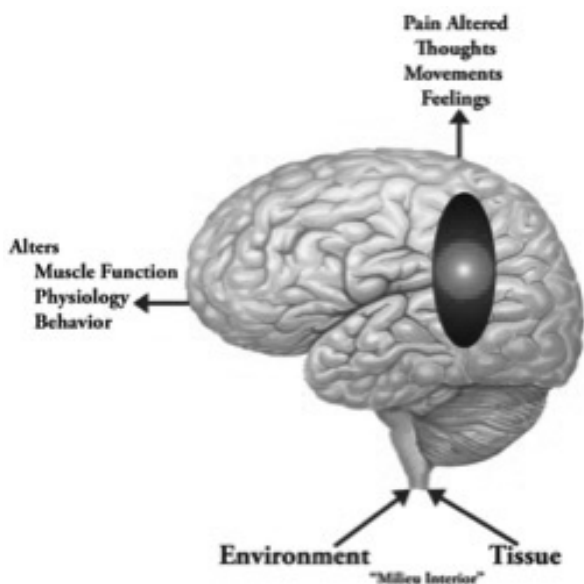


Figure 7:
Applied Kinesiology's Integrative Model of Health Care

Applied Kinesiology

written about as extensively as AK. There have been 38 separate books published about AK methods since 1964.

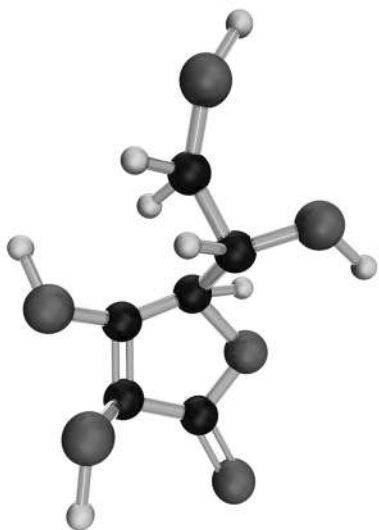
Further research and reviews of applied kinesiology are listed at the National Library of Medicine, where AK research has now been given its own MESH heading. It must be cautioned, however, that several muscle testing protocols which have appeared have not adhered to AK protocols and should never be confused with the methods employed in AK.⁴⁶⁻⁴⁹

Gifford's mature organism model demonstrates the importance of a multifactorial understanding of health, showing that physical, environmental, and emotional aspects interrelate.⁵⁰ Critically, a method of assessment for these interweaving factors is vital.

The Cochrane Collaboration defined CAM as follows:

CAM is a broad domain of healing resource that encompasses all health systems, modalities, and practices and their accompanying theories and beliefs, other than those intrinsic to the politically dominant health system of a particular society or culture in a given historical period. CAM includes all such practices and ideals self-defined by their users as preventing or treating illness or promoting health and well-being. Boundaries within CAM and between the CAM domain and that of the dominant system are not always sharp or fixed.⁵¹

Knowledge Changes Everything.



Quality | Innovation | Experience | Since 1974

The College Pharmacy Difference.

The number of compounding pharmacies exhibiting at health and wellness conferences has increased dramatically over the last 10 years. And yet...

For over 40 years, it has been College Pharmacy's compounding process, attention to detail, and the quality of the compounding components that continues to make our formulations exceptional.

- ✓ Comprehensive Compounding Services
- ✓ Specialty Injectables & IV Protocols
- ✓ Expanded BHRT Fused Pellet Selection
- ✓ Low Dose & Custom Allergens
- ✓ Homeopathic Injectables: Pain, Immune, Detox, Injury, and many more.
- ✓ BioG MicroTabs Nutritional Blends

College Pharmacy's compounding practices are both USP 795 and 797 compliant. Our testing protocol includes: potency, sterility, endotoxin, and fungal testing.

Nationwide & International Services
Practitioner Training & Patient Resources



www.collegepharmacy.com
info@collegepharmacy.com
Tel: (800) 888-9358



Applied Kinesiology

Applied kinesiology offers an important diagnostic tool to supplement those already in place because it unifies within one diagnostic modality – the manual muscle test – the approaches commonly used throughout CAM. In considering how acupuncturists focus upon meridians, physiotherapists upon rehabilitative exercise, naturopaths upon nutrition, and chiropractors upon the joints, AK does not overrule the tenets of any of these approaches, but rather implies that human ailments may be attributed to multiple systems and that the MMT may identify these for the muscle tester educated in its use. This allows for an integrative and interprofessional model of health care to be developed.

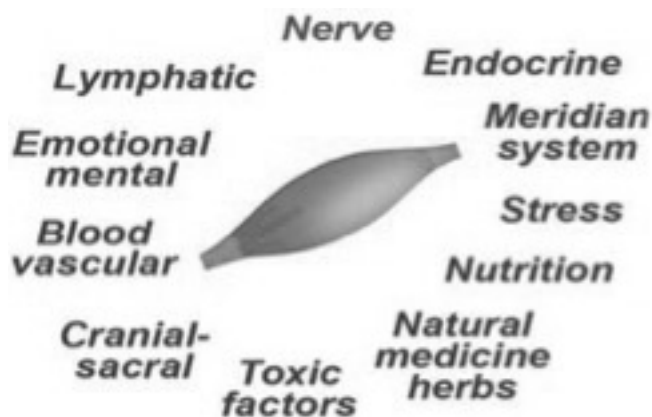


Figure 8: Abnormal results of the manual muscle test may indicate abnormal involvement of any of the factors surrounding it. A change in muscle function when specific stimulation is applied to one of these elements also indicates dysfunction of the surrounding factors.

Notes

1. Goodheart GJ. *Applied Kinesiology Research Manuals*. Detroit; 1964–1995.
2. Cuthbert S. *Applied Kinesiology Essentials: The Missing Link in Health Care*. Pueblo, CO: Gangasas Press; 2014.
3. Cuthbert S. *Applied Kinesiology: Clinical Techniques for Lower Body Dysfunctions*. Pueblo, CO: Gangasas Press; 2014.
4. Walther DS. *Applied Kinesiology Synopsis*. 2nd ed. Shawnee Mission, KS; 2000.
5. Cuthbert S, Rosner AL, Chetcuti T, Gangemi S. Correlation of manual muscle tests and salivary hormone tests in adrenal stress disorder: a retrospective case series report. *Townsend Lett*. 2015 January.
6. Cuthbert S. Applied kinesiology: An effective complementary treatment for children with Down syndrome. *Townsend Lett*. 2007 July;288:94–107.
7. Rochlitz S. On the balancing of candida albicans and progenitor cryptococci: a triumph of the science of applied kinesiology. *Townsend Lett*. 1986;37:113–152.
8. Green BN, Gin, RH, George Goodheart, Jr., D.C., and a history of applied kinesiology. *J Manipulative Physiol Ther*. 1997;20(5):331–337.

Dr. Scott Cuthbert is the author of *Applied Kinesiology Essentials: The Missing Link in Health Care* (2014) and *Applied Kinesiology: Clinical Techniques for Lower Body Dysfunctions* (2013). Dr. Cuthbert is a 1997 graduate of Palmer Chiropractic College (Davenport) and practices in Pueblo, Colorado. He has published 11 Index Medicus clinical outcome studies and literature reviews, and over 50 peer-reviewed articles on applied kinesiology. He is on the board of directors of the International College of Applied Kinesiology USA.

9. ICAK USA research; ICAK published articles [websites]. <http://www.icakusa.com/research>; <http://www.icak.com/index.php/research/published-papers>. Accessed January 11, 2015.
10. Gelb H. *Clinical management of head, neck and TMJ pain and dysfunction*. Philadelphia: W.B. Saunders; 1977.
11. Sakaguchi K, Mehta NR, Abdallah EF, et al. Examination of the relationship between mandibular position and body posture. *Cranio*. 2007;25(4):237–249. Research conducted at Tufts Craniofacial Pain Center.
12. Gelb H, Mehta NR, Forgione AG. The relationship between jaw posture and muscular strength in sports dentistry: a reappraisal. *Cranio*. 1996 Oct;14(4):320–325.
13. Gelb H, Ed. *The Dental Clinics of North America: Symposium on Temporomandibular Joint Dysfunction and Treatment*. Chapter 13. Philadelphia: WB Saunders Company; 1983:613–630.
14. Gelb H, Ed. *New Concepts in Craniomandibular and Chronic Pain Management*. Chapter 15. London: Mosby-Wolfe; 1994:349–368.
15. Smith G. *Cranial-Dental-Sacral Complex*. Newtown, PA; 1983.
16. NET Mind Body [website]. <https://www.netmindbody.com>.
17. Neural Organization Technique – International Professional [website]. <http://www.neuralorganizationtechnique.net>.
18. Clinical Kinesiology [website]. <http://www.clinicalkinesiology.com>.
19. Contact Reflex Analysis [website]. <https://www.crawellnessartists.com/about>.
20. Total Body Modification [website]. <http://www.tbmseminars.com>.
21. Thought Field Therapy [website]. <http://www.rogercallahan.com/index.php>.
22. Kinesiology Network [website]. <http://www.kinesiology.net>.
23. Emotional Freedom Techniques [website]. <http://www.emofree.com>.
24. Thie J, Thie M. *Touch for Health*. Devorss & Co.; 2012. Available at <http://stores.tfhka.com>.
25. Kendall HO, Kendall FP. *Posture and Pain*. Baltimore; Williams & Wilkins; 1952.
26. Janda V. *Muscle Function Testing*. London: Butterworths; 1983.
27. Liebenson C, ed. *Rehabilitation of the Spine: A Practitioner's Manual*. 2nd ed. Philadelphia: Lippincott, Williams & Wilkins; 2007.
28. Lewit K. *Manipulative Therapy in Rehabilitation of the Locomotor System*. 3rd ed. London: Butterworths; 1999.
29. Sahrman S. *Diagnosis and Treatment of Movement Impairment Syndromes*. St. Louis: Mosby Inc.; 2001.
30. 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.
31. Schmitt WH Jr, Yanuck SF. Expanding the neurological examination using functional neurological assessment. Part II: Neurological basis of applied kinesiology. *Int J Neurosci*. 1998;97(1–2).
32. American Medical Association. *Guides to the Evaluation of Permanent Impairment*. 5th ed. 2001:510.
33. Jepsen JR et al. Diagnostic accuracy of the neurological upper limb examination I: inter-rater reproducibility of selected findings and patterns. *BMC Neurol*. 2006 Feb 16;6:8.
34. AK Challenge Procedure: “A mechanism used as a testing procedure to determine the body's ability to cope with external stimuli, which can be physical, chemical, or mental.”
35. Mense S, Simons DG. *Muscle Pain: Understanding Its Nature, Diagnosis, and Treatment*. Lippincott Williams & Wilkins: Philadelphia; 2001.
36. Lund JP, Donga R, Widmer CG, Stohler CS. The pain-adaptation model: a discussion of the relationship between chronic musculoskeletal pain and motor activity. *Can J Physiol Pharmacol*. 1991;69(5):683–694.
37. Cuthbert SC, Barras M. Developmental delay syndromes: psychometric testing before and after chiropractic treatment of 157 children. *J Manipulative Physiol Ther*. 2009 Oct;32(8):660–669.
38. Cuthbert S, Blum C. Symptomatic Arnold-Chiari malformation and cranial nerve dysfunction: a case study of applied kinesiology cranial evaluation and treatment. *J Manipulative Physiol Ther*. 2005 May;28(4):e1–e6.
39. Mollon P. *Psychoanalytic Energy Psychotherapy*. London: Karnac Books Ltd.; 2008.
40. Monti D et al. Muscle Test Comparisons of Congruent and Incongruent Self-Referential Statements. *Percept Mot Skills*. 1999, 88:1019–1028.
41. AK Therapy Localization procedure: “A procedure of placing the patient's hand over areas of suspected involvement, then using muscle testing procedures to determine any change in strength.”
42. Rosner A, Leisman G, Gilchrist J, Charles E, Keschner M, Minond M. Therapy localization in applied kinesiology: reliability and validity. *J Funct Neurol Rehab Ergon*. 2012;2(4):390–391.
43. Pollard HP, Babilis P, Bonello R. The ileocecal valve point and muscle testing: A possible mechanism of action. *Chiropr J Aust*. 2006;36(4):122–126.
44. Motyka TM, Yanuck SF. Expanding the neurological examination using functional neurologic assessment part I: methodological considerations. *Int J Neurosci*. 1999 Mar;97(1–2):61–76.
45. Applied Kinesiology research page [Web page]. <http://appliedkinesiologyresearch.blogspot.com>. Full access to research papers.
46. Hall S, Lewith G, Brien S, Little P. A review of the literature in applied and specialised kinesiology. *Forsch Komplementarmed*. 2008;15:40–46.
47. Haas M, Cooperstein R, Peterson D. Disentangling manual muscle testing and Applied Kinesiology: Critique and reinterpretation of a literature review. *Chiropr Osteo*. 2007;15:11.
48. Kenney JJ, Clemens R, Forsyth KD. Applied kinesiology unreliable for assessing nutrient status. *J Am Diet Assoc*. 1988;88:698–704.
49. Tschernitschek H, Fink M. Applied kinesiology in medicine and dentistry: a critical review. *Wien Med Wochenschr*. 2005;155:59–64.
50. Jones M, Edwards I, Gifford L. Conceptual models for implementing biopsychosocial theory in clinical practice. *Man Ther*. 2002;7(1):2–9.
51. Zollman C, Vickers A. ABC of complementary medicine: what is complementary medicine? *BMJ*. 1999 Sep 11;319(7211):693–696.