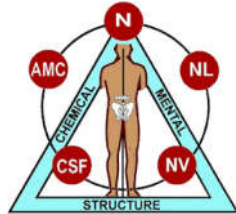


## Applied Kinesiology: An Introduction

Alan Jenks, DC., DIBAK  
Jim Townhill, DC., DIBAK

### A Test of Functional Neurology

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The following is an original compilation of Applied Kinesiology works,  
theory, hypothesis and practical applications.

The material has been compiled from a broad range of reference texts,  
papers and original writings of some of the greatest teachers,  
researchers and innovative thinkers of the last century.

Due recognition and our eternal thanks go to Dr George Goodheart for  
his discovery and his life work and inspiration which changed not only  
our lives but that of thousands of others.

Also thanks to the many other diplomates and doctors too numerous to  
mention that provided us the basis and original ideas that have  
broadened the basis of AK knowledge and the information necessary to  
create this work.

*Alan Jenks and Jim Townhill*



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**“Love of the procedure, is the  
tool of the technician. Love of  
the patient, is the tool of the  
physician”**

~Eugene Charles DC DIBAK



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## Optimal Health Care

1. Find the cause
2. Enduce rapid recovery
3. Give lasting correction
4. Develop lifelong referrals
5. Be effective with your time
6. Give More Than You Get



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## Goal For Today

- Discuss major concepts and methods of Applied Kinesiology
- Define the [Triad of Health](#)
- Talk about the [5 Factors of the InterVertebral Foramen \(IVF\)](#)
- Brief [History of Applied Kinesiology](#)
- What is muscle facilitation and inhibition



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## Applied Kinesiology

- Can be defined as the *clinical application of the study of movement and function*
- Functional Neurology - *Schmitt*
- Diagnostic tool of the body's central integrative state through the detection of direct or reflex manifestations within the structure or function of the **muscular** system - *Charles*
- Body's response to an external force - *King*
- Is a continually evolving system that provides the doctor with the skills and knowledge to purposefully, systematically and logically ascertain the optimal treatment of the patient.
- Embraces the work of all individuals and disciplines who endeavor to diminish the suffering of humanity.
- Attempts to unify such diverse knowledge and techniques into a usable scientific system.



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## Applied Kinesiology

- Applied kinesiology is a **clinical diagnostic** and therapeutic method that draws together elements of complementary medical therapies such as **acupuncture, clinical nutrition, and manual manipulation**, and combines them with mainstream medical understanding of neurology, biochemistry, and other aspects of physiology.
  - Expanding the Neurological Examination Using Functional Neurologic Assessment Part I: Methodological Considerations. Motyka, T.M., Yanuck, S.F., Intern J. Neuroscience. 1999, Vol. 97, pp. 61-76
- AK clinical diagnostic procedures are focused on **identifying functional neurological changes before they become end stage tissue disorders**. Since the health of the nervous system is dependent on its ability to receive and respond to sensory information, treatment procedures are primarily sensory receptor based therapies designed to normalize afferentation.
  - Expanding the Neurological Examination Using Functional Neurologic Assessment Part I: Methodological Considerations. Motyka, T.M., Yanuck, S.F., Intern J. Neuroscience. 1999, Vol. 97, pp. 61-76



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## Applied Kinesiology

- Designed to provide you with basic methods to examine functional neurology.
- The basic treatments you use now can be enhanced by using manual muscle testing.
- AK allows you to better understand why health problems develop and provide better directions for proper therapy.
- Applied Kinesiology is a system that evaluates and analyses structural, biochemical and emotional balance in the body.
- The main diagnostic tool is the 'Manual Muscle Test' (MMT).
- The MMT can be used to decide nutrition, adjustments, exercises, acupuncture points.



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## Applied Kinesiology

- Applied Kinesiology is mainly a diagnostic system.
- You can use all sorts of different treatment modalities with better precision when MMT is utilized as the diagnostic tool.
- The muscle test is not an evaluation of strength or weakness but of the neurological response of the muscle to stretch.
- "AK is a series of sensory receptor based diagnostic challenges followed by monitoring of manual muscle testing outcomes."



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## The Ultimate Goal

- The aim is to decrease cumulative noxious stimuli below threshold thus allowing the body to heal itself.
- To bring patients to a higher level of health and help them to actualize their potential.
- “All AK (therapeutic) techniques are about creating sensory receptor stimulation that results in a net effect of excitation and inhibition leading to more optimal neurological function”



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## International College of Applied Kinesiology

- Founded in 1975
- Members form a variety of specialties including Chiropractors, Osteopaths, Medical Doctors, Dentists, Physiotherapists, Manual Therapists.
- Every year the college puts together a theory and practical based exam called the Clinical Competence Test.



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## International College of Applied Kinesiology

- ICAK both internationally and at the country level hold annual meetings.
- The annual meetings provide an opportunity to update members with regard to research activities and anecdotal thoughts from its members
- [www.icak.com](http://www.icak.com)
- [www.icak.be](http://www.icak.be)
- [www.icakusa.com](http://www.icakusa.com)



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## ICAK Chapters

- America
- Australia
- Baltics (Latvia)
- Benelux
- Brazil
- Canada
- Germany
- England
- France
- Italy
- South Korea
- Russia
- Japan
- Switzerland



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## Diplomate Program (DIBAK)

- 300 Hours of graduate study taught by two different diplomates
- Two original papers
- Three years of AK practice
- 5 x 100 question written exams (Reflexes, Nutrition, Accupuncture, Respiratory, General AK Knowledge)
- Practical examination



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## What You Will Learn

- Functional interaction of the body's systems
- Proper manual muscle testing
- Postural analysis
- Detection & correction of subluxations
- Psychomotor skills
- Gait analysis
- Acupuncture /Meridian Therapies
- Functionally challenge for nutrition
- Somatovisceral/viscerosomatic relationship
- Communicating better with your patient
- HAVING FUN in practice again!



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## How Can AK Be Used?

- Can be used to improve diagnoses of
  - Structural problems
  - Biochemical problems
  - Emotional problems
- Exactly locate the optimal technique or location that needs treatment
- After treatment have a way to analyze a more definite prognosis



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## What You Can Do With AK

- |                        |                           |
|------------------------|---------------------------|
| • Muscular             | • Adjustive Therapy       |
| • Neurological         | • Crainial Techniques     |
| • Vascular             | • Massage modalities      |
| • Osseous              | • Reflex Therapies        |
| • Lymphatic            | • Acupuncture             |
| • Respiratory          | • Exercises/stretchers    |
| • Digestive            | • Nutritional supplements |
| • Endocrine            | • Emotional modalities    |
| • Acupuncture/Meridian | • Lifestyle changes       |



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“The universe is not to be narrowed down to the limits of our understanding...

But our understanding must be stretched and enlarged to take in the image of the universe as it is discovered”

~francis bacon



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## Origins of AK

- 1964 George Goodheart, D.C. who practiced in Detroit, Mi started using muscle testing after reading Kendall and Kendall's book on manual muscle testing
- The man with the magic fingers – Time Magazine
- He noticed that sometimes that muscles tested weak without a known neurological cause
- The first breakthrough came when he made a weak Serratus Anterior muscle strong by rubbing on painful nodules on the muscle
- What he later found was the original technique called Origin/Insertion Technique



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## History of AK

- 1964 George Goodheart fixes a recurrent shoulder problem with origin insertion technique
- 1966 Neurolymphatic or Chapman Reflexes
- 1967 Neurovascular or Bennet Reflexes
- 1969 Basic Crainial Motion
- 1974 Therapy localisation
- 1975 International College of Applied Kinesiology
- 1976 Temporomandibular joint corrections
- 1981 First Textbook by David Walther



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## History of AK

- Every year there are new findings discovered within Applied Kinesiology by members of the ICAK and a move towards using manual muscle testing is used to describe these changes.
- Papers are published by [www.icakusa.com](http://www.icakusa.com) and available through your local chapter.



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## Reasons for a dysfunctional muscle

- Myofacial
- Nerve
- Spinal segmental facilitation and deafferentation
- Neurological disorganization
- Certain low nutrients
- Toxic chemicals
- Crainio-sacral-meningeal problems
- Meridian imbalance
- Lymphatic or vascular blockage
- Organ dysfunction

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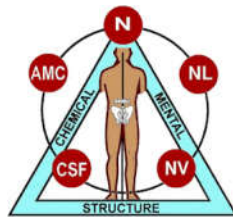
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## Reasons for a Dysfunctional Muscle

### 5 Factors of the IVF

1. Cranio-Sacral Problems
2. Accupuncture/Meridian involvement
3. Nerve(subluxation)
4. Neurolymphatics
5. Neurovascular




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## Triad of Health

- The basic idea within Applied Kinesiology is to balance the body according to the Triad of Health.
- That the body can be out of balance in three different ways...Structurally, Chemically, Emotionally




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## Triad of Health

- Structure determines function problems include:

- Subluxation in the spinal column
- Subluxations in the extremity joints
- Crainial problems
- Organ problems
- TMJ
- Pelvic instability



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## Triad of Health

- Nutritional problems include:

- Allergies
- Fungal, Bacteria, Parasites
- Metal Toxicity
- Chemical Toxicity
- Prostaglandin problems
- Digestive disturbances



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## Triad of Health

- Stress/emotional problems include:

- Depression
- Fobias
- Psychological Sabotage
- Learning issues



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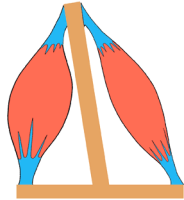
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## Manual Muscle Testing

- 500+ muscles
- Reality is that muscles move bones and our structural function is dependent on our muscular system being reactive and in balance to respond to external force in the appropriate way.




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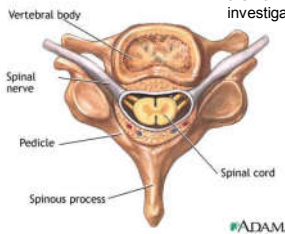
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## 5 Factors of the IVF

Receptors that can directly or reflexogenically disrupt the homeostasis of a muscle or organ and should be investigated in all inhibitory patterns



- **Neurological**
- **Neurolymphatic(NL)**
- **Neurovascular(NV)**
- **Accupuncture(AMC)**
- **Cranial/Secral(CSF)**
- Nutrition
- Psychological
- EMF

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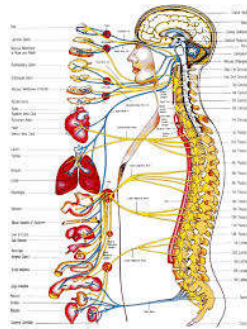
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## Neurological

- Subluxations or Fixations on the spinal column
- Extremity joint subluxations




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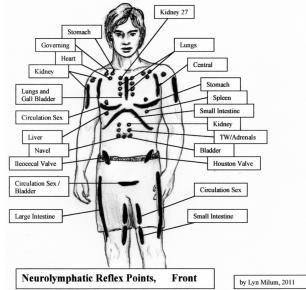
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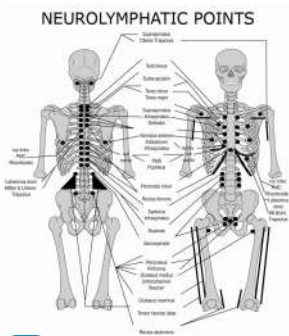
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## Neurolymphatic Points

- Developed by Frank Chapman D.O. 1920's
- Used to help lymphatic drainage within stimulated organ
- Based on empirical data
- Find them anteriorly and posteriorly on the body
- Stimulate by rubbing (firm rotary pressure) ~30 seconds

[illegible]

## Neurolymphatic Points



- Goodheart used them first in 1966
- By stimulating the point he found he could make a weak muscle strong
- Helped him further develop the organ-muscle relationships
- Organ and muscle drainage occur with stimulation

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## Neurolymphatic Points

- Points are active when you feel a swelling over the area and usually painful to rub
- anterior points are usually worse than posterior.
- The more painful the point the greater chance it is a nutritional issue.
- The supplement that reduces the pain is the most likely to be needed.



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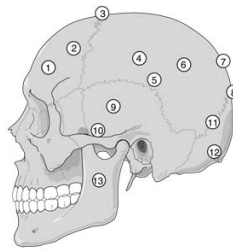
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## Neurovascular Points



1. PMc
- Sacrospinalis
- Peroneus (tertius, longus and brevis)
- Rhomboids (Walther)
2. PMs
- Rhomboids (Leaf)
3. Serratus anterior
- Supraspinatus
- Subscapularis
- Deltoids
4. Rectus abdominis
5. Latissimus dorsi
6. Gluteus medius
- Tensor fascia lata
- Rectus femoris
- Piriformis
7. Hamstrings
- Middle and Lower Trapezius
8. Sartorius
9. Teres minor
- Teres major
- Subclavius
10. Upper Trapezius
- Pectoralis minor
11. Gluteus maximus
- Adductors
12. Iliopsoas
13. SCM

The Neurovascular Points




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## Neurovascular Points

- Developed by Terrence Bennett D.C. back in the 1930's
- Mainly found on the skull
- Stimulation of the points increases blood flow to the related organ
- They are thought to be remnants of the vascular network which augments the mother's placental circulation before the heart is formed at about the 4th month point in gestation
- Can be stimulated via a light pull and feeling of a pulse for about 20 secs




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## Neurovascular Points

- Goodheart first started using these points in 1967
- Just like NL points stimulating these points resulted in strengthening of muscles which helped confirm the muscle organ relationships
- There is an embryological relationship with the circulation as it was found the pulsation on the point was unrelated to heart rate
- Can use therapy localisation to identify




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## Accupuncture System

- Over 5000 years old
- Based on the premise that man is a microcosm of the universe and the same life giving energy connects us to our environment
- Energy, chi, flows through the body in distinct pathways called meridians
- Oldest known reference is the 'Nei Ching' written between 2696-2598 B.C.
- 12 Meridians
- 24 Hour Clock
- Sedation Points
- Tonification Points
- Alarm Points
- Five Element Chart




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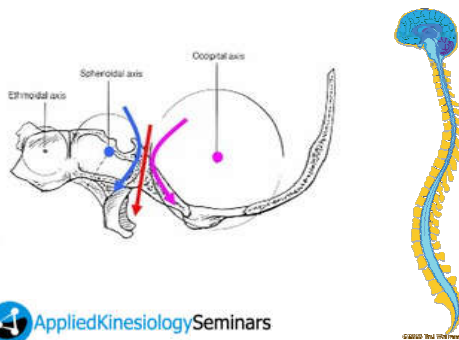
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## CrainioSacral




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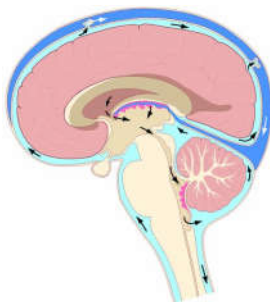
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## CerebroSpinalFluid (C.S.F)



- William Sutherland was a Osteopath who introduced idea of crainial bones moving
- JAOA vol. 94 No9
- Imbalances can alter function of any muscle or organ
- Respiratory challenges
- Treated with direct pressure as patient respies




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## Nutrition

- 1937 Royal Lee, D.D.S (Standard Process) tasting of needed nutrients changes cardiographic recordings in ten minutes (heart rhythm & muscular function)
- Science Magazine 1968 –direct nutritional pathway to brain
- 1968 Goodheart discovers that insalivating nutrients changes muscle function **immediately** i.e. Thyroid hormone facilitates Teres Minor



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## Basis of Manual Muscle Testing

- In Applied Kinesiology we use three major things daily
  - Muscle Test
  - Therapy Localization
  - Challenge



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## Therapy Localization

- Discovered in 1974
- Muscular inhibition is found by placing patient's hand over an area of dysfunction
- Muscular facilitation is only loacted by placing patient's hand over area of dysfunction related specifically to the inhibited muscle being tested
- Reveals **where** not **what**
- Does not replace standarized examination procedures
- Can cause a muscle to weaken or a weak muscle to strengthen
- Neurologically it is the result of proprioceptive stimulation



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## Challenge

- Apply an external vector of force in a direction that causes a change in muscle facilitation
- We are affecting joints and muscle mechanoreceptors
- Intense deafferentation from improper joint mechanics affects the central nervous system
- A Challenge disrupts central integrative state and temporarily causes a neurological inhibition of any normally functioning muscle
- Again this can all be explained via the idea of proprioceptive input



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## Nutrition

- Gustatory receptors → Cranial nerves → Nucleus of tractus Solitarius → Thalamus → Cortex (taste sensation)
  - Hypothalamus → Reticular formation → Reticulospinal tract → Anterior horn of spinal cord → Alpha Motor neurons
- Autonomic Nervous System      Muscles



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## Neurological Model For The Functional Testing Of Nutritional Products Through Manual Muscle Testing

- Mouth → Thalamus → Brain  
                  ↓                   ↑  
                  Hypothalamus → Spinal Cord  
  ↓                   ↓  
  ANS               Muscle



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## The Art of Muscle Testing

- Traditionally used to evaluate disability or degree of motor loss (ie in Polio patients)
- AK manual muscle testing is a measure of the excitation level of the neuromuscular junction as an indication of motor neuron activity of the corresponding anterior horn cell.
- We are testing for **Function**, not **Strength**



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## The Art of Muscle Testing

1. Approximate (bring closer together) the origin and insertion
2. Avoid contacting the body unnecessarily
3. Adequately stabilize the patient
4. Instruct the patient in which direction to push or pull
5. Do not overpower. Initiate patient's contraction with your test, then steadily increase your pressure for three seconds. You are measuring the ability of the muscle to "lock"
6. Be aware of operator prejudice
7. Observe if the patient is trying to change the parameters
8. Observe if the patient is holding their breath
9. Keep the patient's hands off the body
10. Coordinate timing so that doctor initiates test after patient



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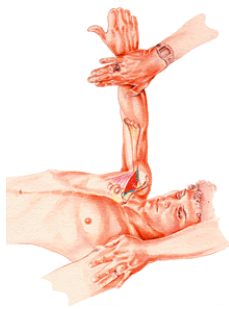
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## Muscle Reactions to Testing

- **Muscle Tests Strong (Normotonic)**
  - Muscle weakens with stimulating sedation point
  - Muscle weakens with spindling down muscle
- **Muscle Tests Weak (Hypoactive)**
  - There is no locking of the muscle, it is easy to push through the full range of motion
- **Muscle Tests Too Strong (Hyperreactive)**
  - Does not weaken to sedation

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Process	Mechanism	Previous Terminology	Suggested New Terminology
<b>Normal Muscle Response</b> (adequate contraction)	Proper Summation of the Motor Neuron	Normotonic	Responsive
<b>Normal Muscle Response</b> (inadequate contraction)	Proper Inhibition of the Motor Neuron	Inhibited	Inhibited
<b>Muscle Tests Weak</b>	Lack of motor neuron summation	Inhibited, Hyporeactive	Under Summated
<b>Muscle Fails to Turn Off as Expected</b> (3 categories)		HYPERTONICITY	FAILURE TO INHIBIT
<b>1 - Muscle fails to respond to spindle Inhibition</b>	Renshaw Cell Failure	Hypertonicity	Segmental Responsive Failure
<b>2 - Gait patterning/Agonist-Antagonist inhibition failure</b>	1a Interneuron Failure	Neurological Disorganization	Sequential Responsive Failure
<b>3 - Muscle fails to respond to sensory challenge</b>	Protein transcription problem	Not Described	Unresponsive

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## What Exactly Is The Muscle Test

- Cortical excitability changes with eccentric contractions
  - Duchateau et al J App Physiol 116 2014
- It appears that spinal and corticospinal excitability are reduced during lengthening compared with shortening and isometric contractions. Nonetheless, the modulation observed during lengthening contractions is mainly attributable to inhibition at the spinal level.
  - Duchateau J, **Enoka RM. Neural control of lengthening contractions.** J Exp Biol. 2016 Jan;219.



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## Using Muscle Testing

- Muscle testing, applied with the precision used by AK practitioners, serves as a method of functional neurological assessment. Muscle testing has always been an integral part of the neurological exam. With AK techniques, the ability to assess predictable neurological responses to sensory receptor-based challenges of known value has been amplified. The use of AK can assist the clinician in identifying and treating sources of improper neurologic function in an efficient and accurate manner.
  - Expanding the Neurological Examination Using Functional Neurologic Assessment: Part II Neurologic Basis of Applied Kinesiology. Schmitt, WH. Yanuck, SF. Intern. J. Neuroscience, 1999, Vol. 97, pp. 77-108



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## Manual Muscle Testing

- The nervous system determines the relative tone (facilitation, inhibition) of the skeletal muscles
- The nervous system is constantly monitoring and responding to exogenous and endogenous stimuli
- The state of facilitation or inhibition of skeletal muscle alpha motor neurons is determined by neuronal pool summation of these stimuli (Central Integrated State)
- The AK doctor can change the effect of neuronal pool summation by introducing additional stimuli
- Manual muscle testing can be used to monitor nervous system response to stimuli and as a "somatic window" to neurology at any given time.



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## Manual Muscle Testing

- “A change in manual muscle testing response is ultimately due to changes in facilitation/excitation and inhibition at the anterior horn motor neurons (AMNs) of the muscle in question.”
- “Fundamentally, AK is all about excitation and inhibition of neural pathways.”

– **A Neurological Rationale for a Comprehensive Clinical Protocol Using Applied Kinesiology Techniques.** Schmitt, W. H. 2005  
Annual Proceedings International College of Applied Kinesiology



AppliedKinesiologySeminars

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