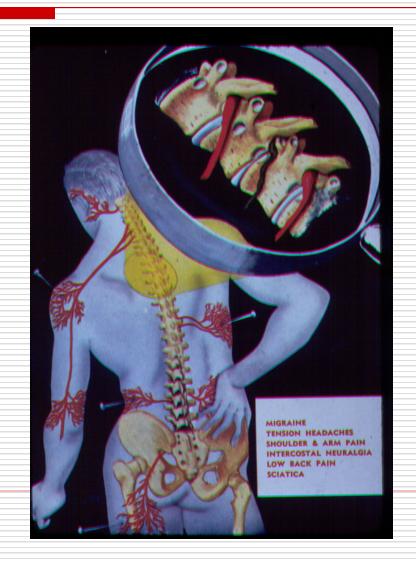
Autonomic Response Testing

Your Internal Sensing System's Response

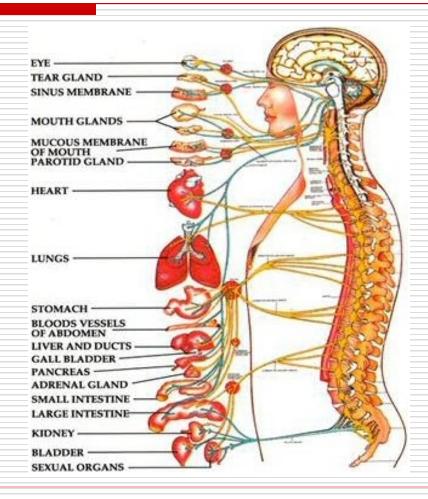
<u>Autonomic Response Testing</u>

- Autonomics innervate all joints and extracellular connective tissues...
- ☐ Different types of proprioceptors and neurological pathways....all connect via autonomic and afferent/efferent pathways.



Autonomic Nervous System

- ☐ Innervates
 everything −
 including all joints,
 viscera (guts), and
 extracellular tissue
 (outside the cell)
- ☐ Operates entirely at the subconscious levels of the nervous system (Limbic and Reptilian Levels)



Types of Autonomic Responses Testing Methods

- ☐ E.A.V. Polygraph testing
- Thermography Galvanic Skin Response
- Heart Rate Variability
- Nogier Pulse Testing (Auriculocardiac Reflex)
- Arm/Leg Length Reflexes
- Manual Muscle Testing Procedures

They all involve baseline testing, various challenges, and retesting to identify response pattern

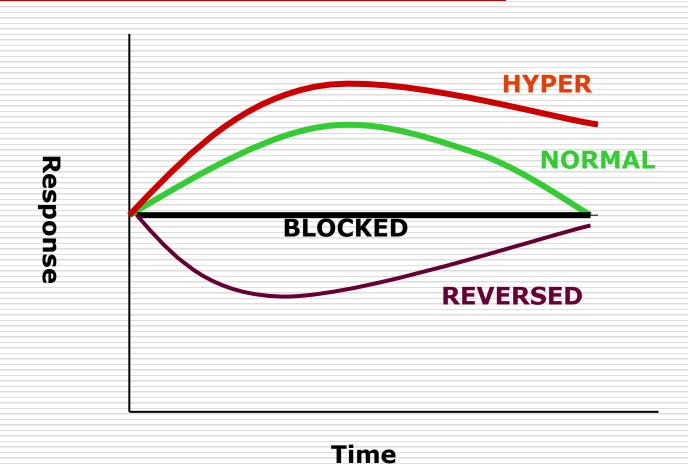
Muscle Response Testing

- □ Response patterns of autonomic testing....
- ☐ Is very suited for musculoskeletal problems.....
- ☐ Its quick...
- ☐ Its always present...
- ☐ Its adaptable...
- ☐ It is inexpensive...
- ☐ Its response is...in real time....

Autonomic Response

- ☐ Types of Response
 - Normal reaction with return to baseline
 - Hyper over-reaction with return
 - **Blocked** no response
 - Hypo under-reaction with slow return
 - Reversed opposite of normal

Types of Response



Manual Muscle Testing Methods

- ☐ Have solid neurophysiological basis
- ☐ Different levels/types of tests help to differentiate types of problems in the physical medicine realm....
- Its important to study and know your anatomy and neurophysiology...

Challenge Methods for the Differentiation

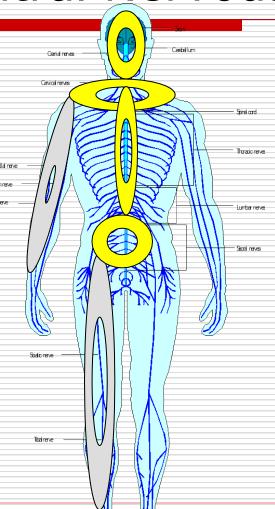
- Even though there is an anatomical & neurophysiological basis to all of this....
- □ That information isn't the purpose of this presentation!!!
- ☐ Demonstrating its use is......

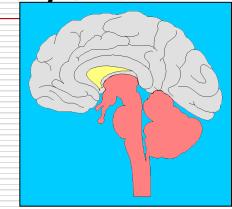
Screening Methods Summary

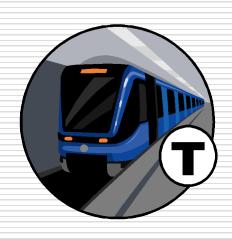
- ☐ Find the Area/Areas...
 - Central, Spinal, Extremity, Visceral
- Challenge the functional compartments
 - Flexion, Extension, Abd/Adduction, Rotation, Lateral/Medial etc.
- Determine the type of problem/condition affecting the area....
 - Fascial, Ligament, Joint, Discal, Neuropathic

Challenge the Central Nervous System

Brain Stem & Spine Act Like a "Central Subway" or Main Skytrain System

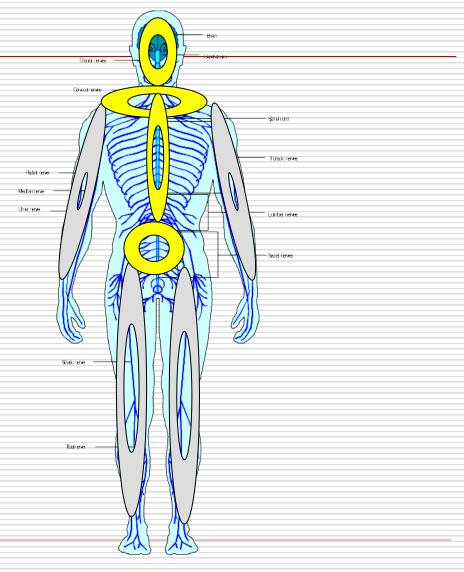






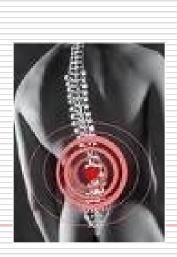
Central Nervous System

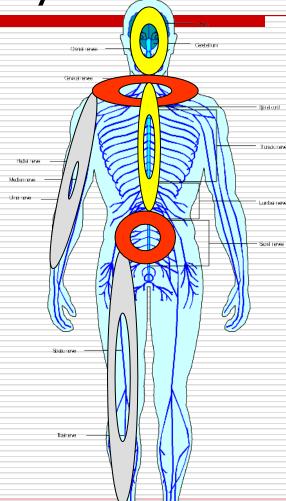
- Trains go back and forth along a central routing system
- When all goes well everything is quick and efficient
- When one area gets in "trouble" the whole system begins to back up becoming "dysfunctional".

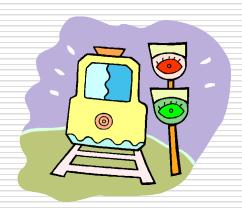


Central Nervous System Disrupted





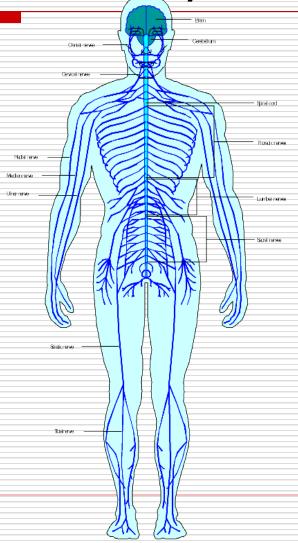






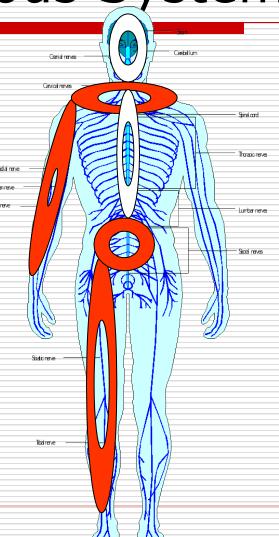
Challenge the Peripheral Nervous System

- □ Routes connecting to outlying areas "the suburbs" = extremities
- Connects to spinal (central) system at connecting terminals or hubs called -
 - Nerve plexi or
 - Nerve ganglia



Peripheral Nervous System

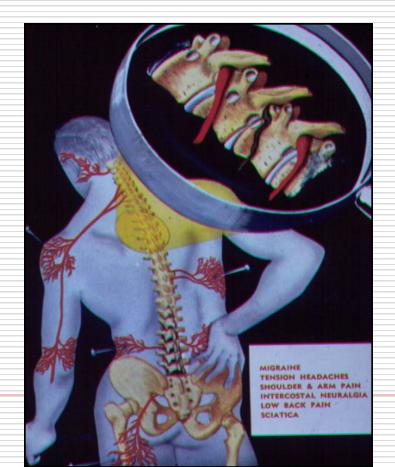
Hubs
Connect
From Outlying
Areas to
Central Nervous
System

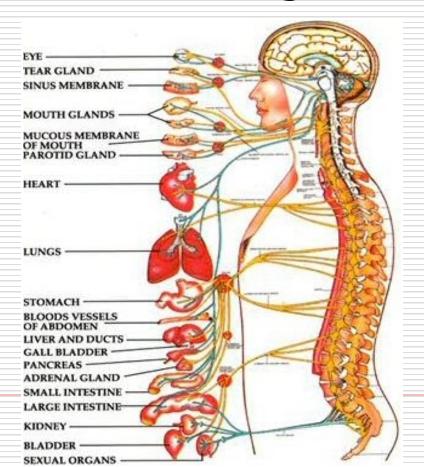




Challenge the Autonomic Nervous System

Automatic Internal Processing





Autonomic Nervous System

☐ Sympathetic 📆



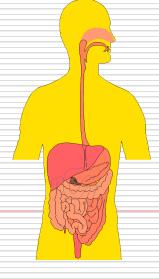


Parasympathetic





■ Enteric



Cervical Spine Screening Challenge

- □ Rotation (Upper Cervical)
- ☐ Lateral Flex (Mid Cervical)
- ☐ Compression (Disc & Facets)
- □ Distraction (Ligaments)
- Palpation & Challenge

Thoracic Spine Screening Challenge

- ☐ Shrug (Shoulders to ears)
- ☐ Shoulder Displacement (Upper Ribs)↑↓
- □ A-C Joint (Subclavius test)
- S-C Joint (Push Challenge)
- Coracoclavicular- (Int Rotation)
- ☐ Coracohumeral (Ext Rotation)
- □ Palpation & Challenge (Ribs, Vertebra)

Example: Screening Low Back/Pelvis

- ☐ Sitting Tests:
- ☐ Supine Tests:
- ☐ Prone Tests:

Lumbar Spine Screening Challenges

- Sitting
- ☐ SI Sprain-Subluxation (Weak Abd)
- □ SI Retraction A-P (with Abduction)
- ☐ Iliolumbar Lig (Hip flexion &45 rot ipsi)
- ☐ Iliolumbar Vertical (Fwd flex & opp lat)
- ☐ Facets (Hip flex & lumbar extension)
- □ Discs (Valsalva)
- □ Palpation & Challenge

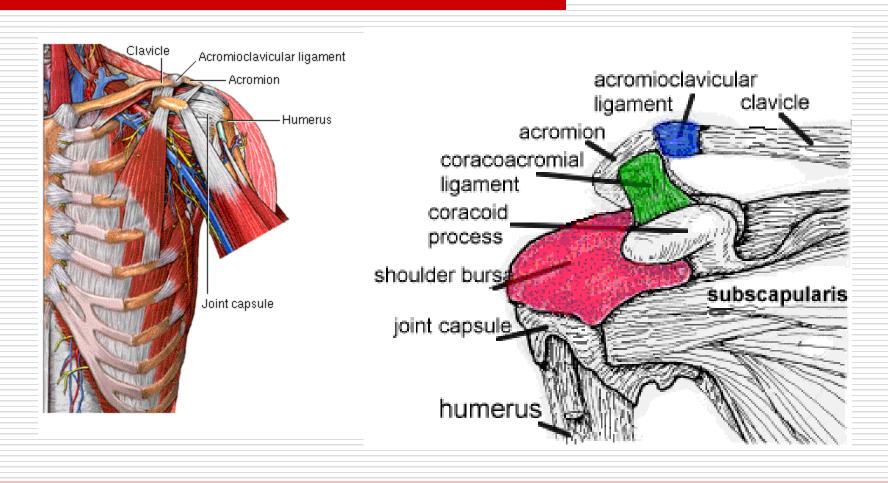
Lumbar Spine Pelvis Screening Challenges

- Supine
- □ Plantar Flex/Extension
- □ Roll Pattern (Hips Rotated)
- ☐ Dural Torque Pattern (Neck and Hips)
- □ Imbrication (Leg Traction with Block)
- ☐ Hip (Anterior Drawer)
- ☐ Hip (Posterior Drawer)

Lumbar Spine Pelvis Screening Challenges

- □ Prone
- ☐ Hip Extensors Neutral (Glut max)
- □ Hip Extensors Sphinx position
- □ Piriformis Test Neutral position
- □ Piriformis Test Flexed hip position
- □ Sacral Challenges "Figure 8"
- □ Sacro-coccyx Challenges
- Lumbo-Pelvic Fascial Challenges

The ShoulderA Complex Structure



Example: Shoulder-Divide the Functions and Test

- Flexors- Biceps shorthead, longhead, anterior deltoid, coracobrachialis Abductors mid-deltoid, supraspinatus, post-deltoid Adductors Pec major clavicular, sternal, pec minor, subclavius Extensors- longhead triceps, post deltoid Rotators teres minor, infraspinatus (3 div), subscapularis (3 div),
- Ligaments- Capsular, Glenohumeral, Acromioclavicular, Coracoacromial (conoid, trapezoid), Sternoclavicular etc.

Manual Muscle Testing Shoulder Exam

- Coracobrachialis
- Anterior deltoid
- Middle deltoid
- Posterior deltoid
- Supraspinatus
- Biceps longhead

- Pectoralis minor
- Pectoralis major sternal
- Pectoralis major clavicular
- Subclavius
- Serratus anterior
- Biceps shorthead

Manual Muscle Testing Shoulder Exam (cont'd)

- Triceps lateral head
- Triceps medial head
- Triceps longhead
- Teres minor
- ☐ Infraspinatus (lower)
- ☐ Infraspinatus (upper)
- ☐ Subscapularis (lower)
- □ Subscapularis (upper)

- □ Rhomboids
- Levator scapula
- □ Teres major
- Latissimus dorsi
- Upper Trapeziius
- Middle Trapezius
- Lower Trapezius

Functional Muscle Testing Exam Shoulder

THORACIC SPINE & SHOULDER

- ☐ Shrug Test (Shoulders to ears)
- ☐ Shoulder Displacement (Upper Ribs)
- □ Forced Adduction Stress Test
- ☐ A-C Joint (Subclavius test)
- ☐ S-C Joint (Push challenge test)
- ☐ Apprehension Test (Ant. Capsule)
- Coracohumeral ligament (Ext Rot challenge)
- ☐ Coracoclavicular- (Internal Rotation)
- ☐ Coracoclavicular-Trapezoid Lig (Lat. Rot)
- ☐ Coracoclavicular-Conoid Lig. (Wing pull on scapula)
- Active Compression Test (Biceps/Labrum) (80° flexion, Full I.R., slight adduction)

Details: Differential Diagnosis of the Pain Generators in the Problem Area

- Once you have found the area eliciting abnormal reaction patterns....
- Process to find the types of problems eliciting the abnormal response in the region....

Challenge Methods for the Differentiation

- ☐ A. Skin/Scar
- ☐ B. Fascial Torque/Pull
- C. Joint Subluxations
- ☐ D. Muscle Weaknesses/Inhibition
- ☐ E. Ligament Instability
- ☐ F. Facet Joints
- ☐ G. Disc Problems

A. Skin/Scar/Fascia

- Method 1
 - Find intact muscle with resisted challenge
 - Stretch the muscle quickly and retest
 - Normal = no change of strength
 - Abnormal = muscle weakens dramatically

Skin/Scar/Fascia

- Method cont'd
 - Use normal intact muscle and find an area that with light pressure reacts to stretch or pull directionally.
 - Find direction that releases/corrects weakening or palpate and test to locate nodules or trigger points within tissue

B. Muscle Challenge Technique

- Position fibres so they have appropriate elongation & vector positioning muscles are rubber bands they can only contract they don't push.
- Begin resistance in consistent direction to feel for contraction strength.
- A "weak" muscle will elongate when it shouldn't, or fail to load and resist initially.
- Look to its components and nerve supply.

C. Joint Challenge Technique

- □ Test muscles around the joint strong or not?
- Twist, push, or compress joint while testing either a direct joint related muscle or an non-related indicator muscle for change.
- Find the direction that strengthens a weak indicator and treat joint accordingly (joint/facet protocols)

D.Tendons

- Become activated when the muscle contracts pain usually at junctional areas.
- Weakness or pain elicited is negated with approximation of injured site or amplified by distraction of fibres.
- In the tendon itself compression of swollen fibres is painful

 you can feel the "boggy" tissue
- Treatment involves appropriate ligament repair take pressure off structures, consider prolotherapy, and microcurrent or ATP enhancement therapies.

D. Tendon Challenge Technique

- ☐ Test intact muscle
- Activate tendon and touch areas until you locate precise areas that change response.
- ☐ Use varied directional pressures to identify the appropriate patterns of normalizing response.

E. Ligament Challenge Technique

- ☐ Test joint for normal muscle activation
- Challenge joint/ligament complex by pushing joint in specific direction that activates the ligament to respond.
- Retest the muscle positive response the muscle will weaken.
- Note: some muscles have direct ligament associations and are more specific.
 - Eg. Popliteus muscle and posterior cruciate ligament

E. Ligaments

- Treatment for grade II injuries involves: Increasing blood flow and repair factors and stopping tearing/ microtearing while repairing.
 - Joint positioning
 - Reset of fibro-osseous junctions,
 - RIT/Prolotherapy,
 - Taping or stabilization while repairing.
 - Appropriate nutritional support Collagen & Matrix

F. Disc Challenge Technique

- □ Similar to joint challenges but involve compression, shearing, or distraction of disc between the bones.
- Treatment is similar to ligament except it is deep can't directly inject because of central pain component.
- Stabilize around the disc -all supportive structures
 and get "healing currents" through the tissue.

G. The Cerebrospinal Fluid System

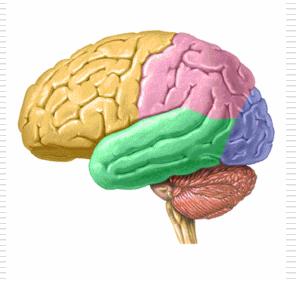
- ☐ We need to add this in because.....
- Its a hydraulic "rheostat" electrical system
- (If its not working- functionally you are a "dim lit")
- Important to the nervous system
- Intimately related as a structural and trophic physiological support system that pumps circulation/nutrition/waste removal for the nervous system.

G. The CSF System

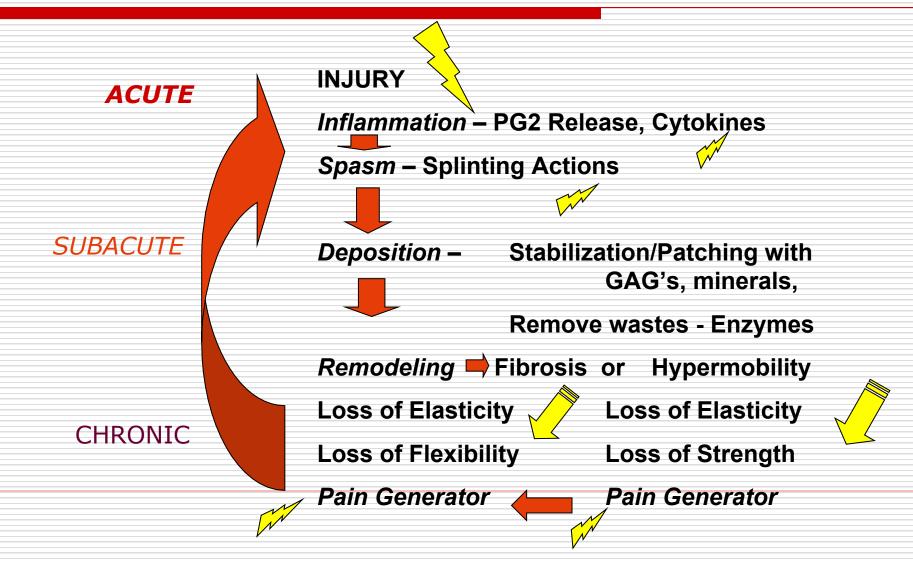
- Generally overlooked by traditional medicine
- Definitely overlooked/excluded by WCB etc.
- The power source for musculoskeletal- energy functions
- Critical in concussion and all autonomic response issues.

G. Cranial Challenge Technique

Demonstration



Phase of Injury & Healing Cycle



Acute Treatments

- Inflammatory
- □ Reduce tissue leaking, bleeding, and restore tissue membrane integrity as soon as possible.
- Restore proper integration within system
 - Nervous system, acupuncture systems
 - Concussion protocols, CSF, Spinal
- Stabilize and support system for repair

Chronic Treatments

- Activate circulation and remove by-products of fibrosis/mineralization
- Restore integration and communication of tissues
- Activate tissue regeneration and repair
- Be aware of subacute and awakened inflammatory start up process

Think of General Principle Regarding Connective Tissue Repair

Fascial related structures heal with scars/fibrosis.....glue, sew, and shrink wrap process

Ligaments and related tissues get lax and lose elasticity...weakness/ loss of power through weakening of tensile components

Stability/Instability

- Changing the boney architecture changes the tensegrity
- Tear/cut/shear in the connective tissue matrix = changes in the tensegrity of the matrix
- = changes the reflex proprioceptors all the way to the brain.

Naturopathic Tools That Work!!!

- □ Hands on Soft Tissue Manipulation
- Manual and Joint Manipulation
- Frequency Specific Microcurrent FSM
- Acupuncture Dry Needling, IMS
- Neural Therapy
- Regeneration Injection Therapy
- Cranial Sacral Therapy

Joint and Soft Tissue Manipulation

- ☐ You don't need to pile drive the tissues!!! And create more damage.....
- ☐ Skill and proper assessment and a feel for the tissues makes a huge difference
- ☐ Use the body's "alert response", aka "autonomic response", via "primitive reptilian system", the towards and away from response of all living cells.....



Tissue Manipulation

- We are working to restore proprioceptor feedback function
- By setting the tissues back in proper physiological relationship
- So they can heal and restore proper cell signaling within the extracellular matrix and nervous system
- Learn how to work with the many types of proprioceptors in the body.

Frequency Specific Microcurrent

- Dr. Carol McMakin, DC, Portland, Oregon
- Learning & developing the frequency based "Language of the Tissues/Body"
- ☐ You need two channels -
- You need very specific frequencies
- ☐ Research proves it...

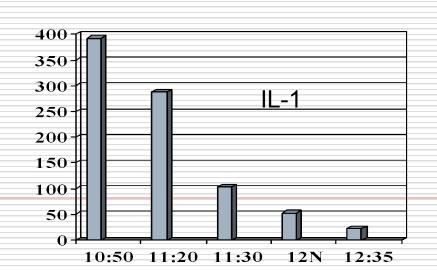
BIOLOGIC RESONANCE

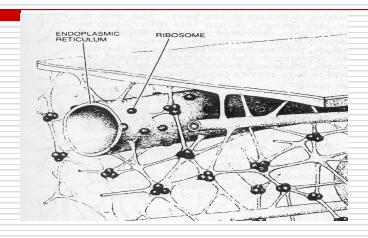
- □ "Living matter responds to <u>coherent</u> signals."

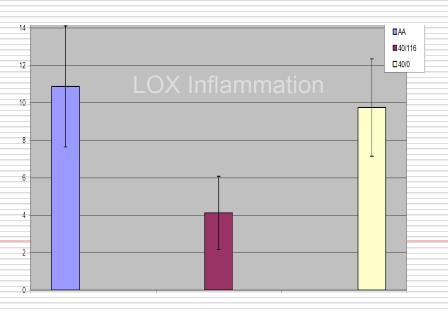
 James Oschman, PhD
- ☐ Drugs or nutrients can act like keys in a lock to change membrane protein and cell function
- Frequencies act like the beeper that opens the door with an electromagnetic signal
 - May change membrane protein configuration and function electromagnetically

Biologic Resonance

- ☐ Inflammation is not only a biochemical phenomenon
- ☐ Inflammation is an electromagnetic pattern
- Neutralized by a corrective pattern



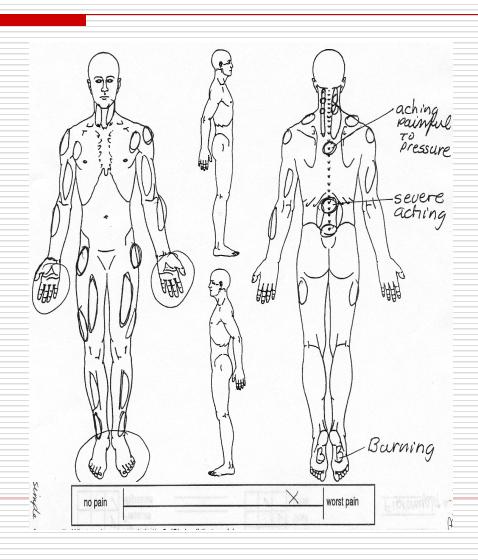




Fibromyalgia from Spine Trauma

C. McMakin, W. Gregory, T. Phillips, JBMT, July 2005, 9 169-176

- Pain 7.3 \pm 1.2 / 10 (range 5-10/10)
 - Resistant to narcotics
 - Aching, burning, tingling, stabbing
- 54 Patients
 - **9.5 yrs** avg CHRONIC (1-50 years)
 - Met ACR Fibro criteria
- PAIN PATTERN
 - Neck, midscapular
 - Shoulder, arm, hand
 - Back, leg, foot pain
- □ Patellar reflex +3/4



FSM Treatment Protocol

- □ 40hz, 10hz only effective frequencies
 - Polarized + DC current
- □ Pain reduced 7.4 to 1.3/10 in 90 min
 - Lasts 1 hour to two weeks
- □ Neuroendocrine recovery in 2-4 months
- Individualized recovery program
 - FSM in office, FSM home unit
 - Physical therapy, reconditioning
 - Supplements
- Medication management / withdrawal



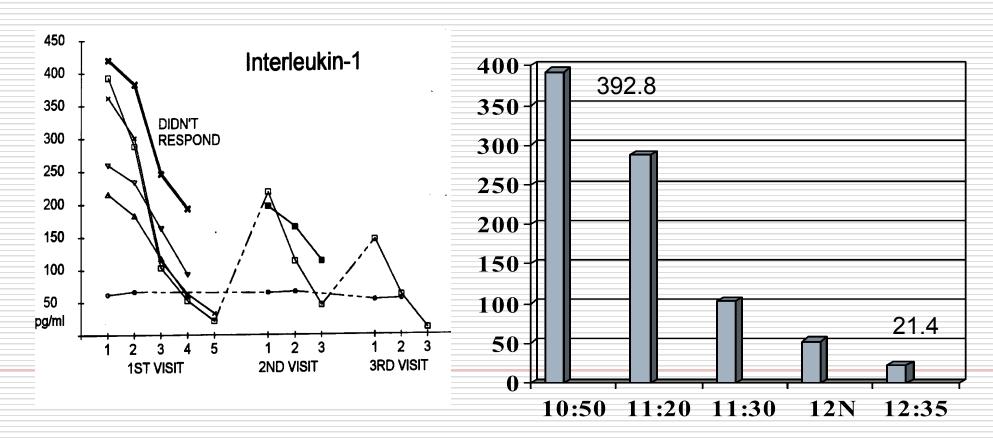


IL-1330 ± 39 reduced to 80 ± 31pg/ml

normal= 0-25pg/ml **P=0.004**

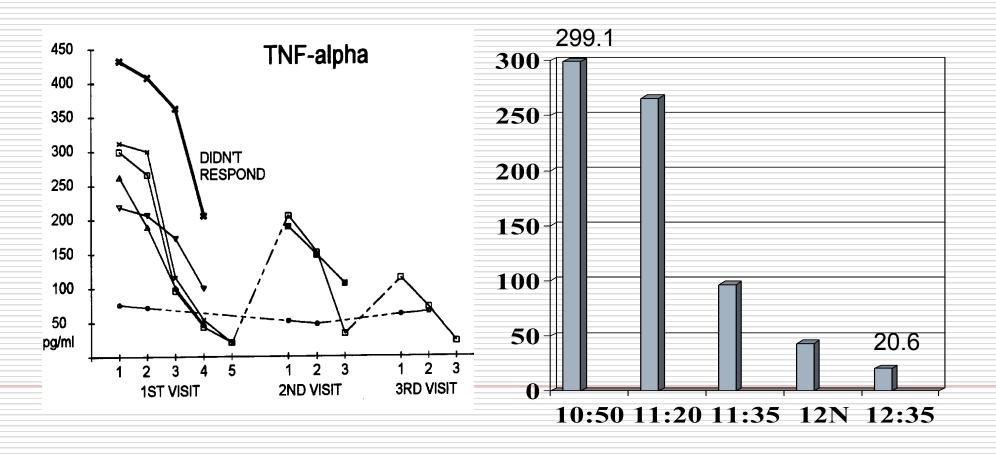
Linear regression on time points

P=0.0001

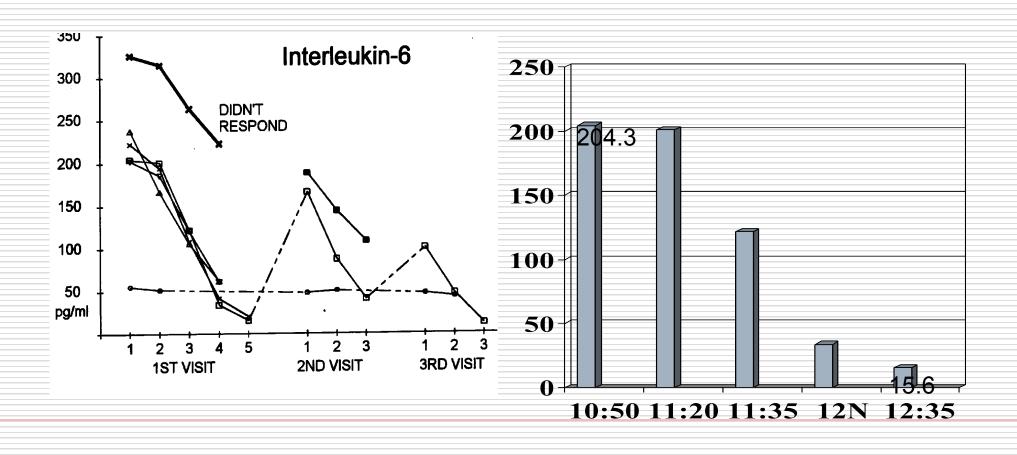


TNF-alpha normal=0-25pg/ml

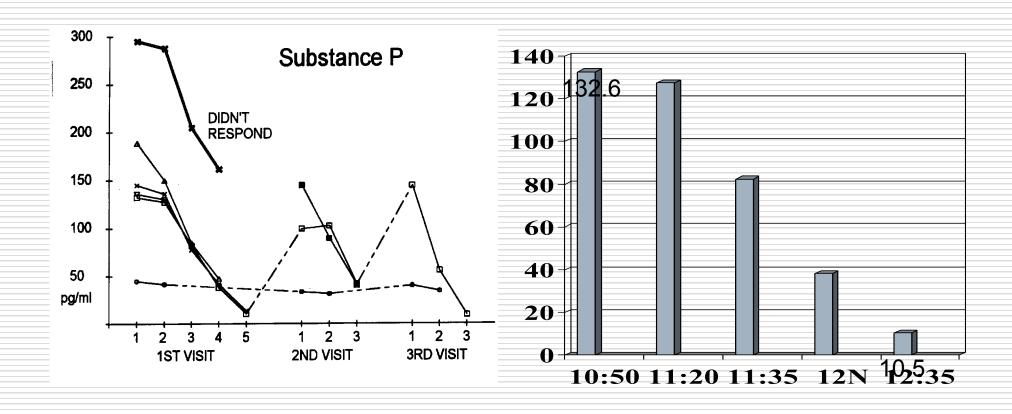
305 ± 36 reduced to 78 ± 35 pg/ml P=0.002, t-test



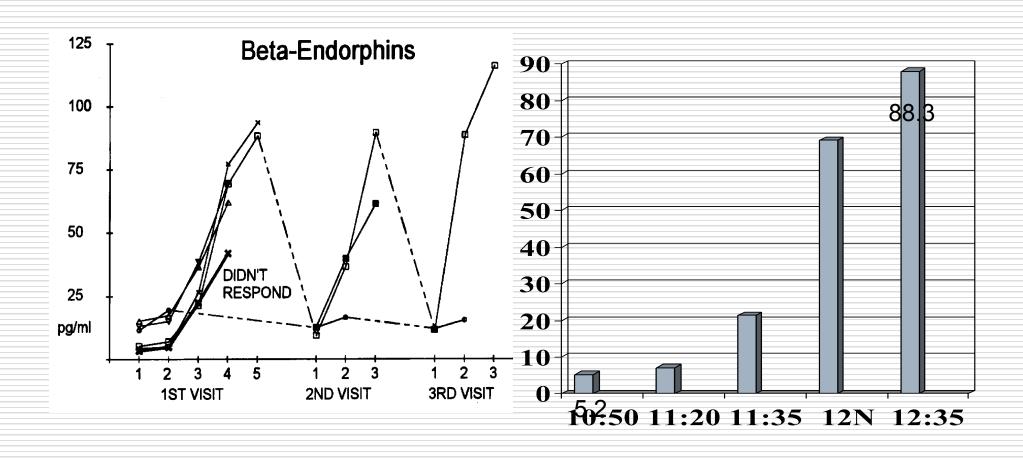
IL-6 normal=0.25pg/ml
239 ± 23 reduced to 76 ± 38 pg/ml
P=0.008, t-test



Substance P $_{normal=0-30pg/ml}$ 180 ± 31 reduced to 54 ± 28 pg/ml P=0.0001, t-test

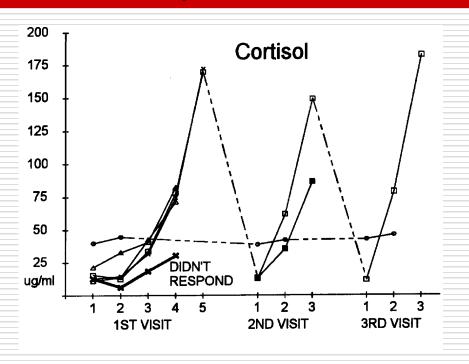


Beta Endorphin normal 0-35 pg/ml 8.2 ± 2.5 increased to 71.1 ± 9.3 pg/ml P=0.003, t-test

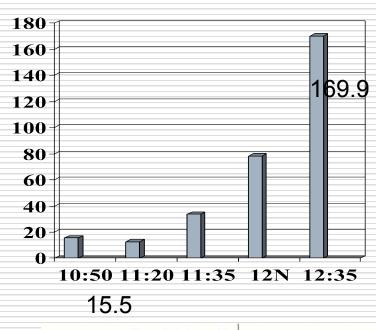


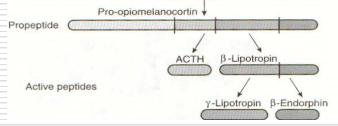
Cortisol normal 5-25 ug/ml

 14.7 ± 1.8 increased to 105.3 ± 28.2 pg/ml P=0.03, t-test



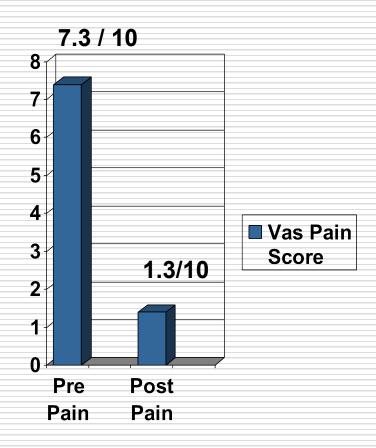
Not a stress response **Cortisol follows endorphins Neuropeptide-Y drops**





Pain Relief - Recovery

- \square VAS 7.3 ± 1.2 to 1.3 ± 1.1
 - P < 0.0001
 - 90 minutes first treatment
 - 40 minutes subsequent treatments
- □ All patients had pain relief
- ☐ 58% (31/53) **recovered** from fibromyalgia in four months



Optimal Response

- □ 18 years chronic fibromyalgia
- □ 12 / 8 : **14 / 18** tender points
- □ 1 / 12 : **11 / 18** tender points
- □ 2 / 8 : **7 / 18** tender points
 - Cervical ROM improved by 40%
 - Pain medication reduced by 95%
 - Muscle relaxants reduced by 95%
 - Sleeping well, no medication
 - Digestion improved, IBS resolved
- 6 year follow-up Recovery Maintained

Fibromyalgia - Outcome

The most important thing you need to know about Fibromyalgia is that it is curable

Not in every case, and not in every patient, but it is curable often enough that a cure can be the intended treatment goal

Cervical Myofascial Pain

50 Cases published - TICC, 1998

- 4.7 yrs avg chronicity
 - Range: 1 to 28 years
 - 88% failed with other treatments
- □ 11.2 treatments
- ☐ 7.9 weeks (8 weeks)
- 6.8 / 10 pain reduced to
- 1.5 /10



<u>Lumbar Myofascial Pain</u>

23 Cases Published - JBMT, 2004

- 8.4 years avg chronicity
 - Range: .1 to 20 yrs
 - 87% failed with other treatments
- □ 5.7 treatments (6 tx)
- □ 5.7 weeks (6 weeks)
- □ **6.8 / 10** pain reduced to
- 1.6 /10



Treating Neuropathic Pain

Unpublished Data

- \square N = 20
 - Patient age 47.7 years (24 68 years)
- ☐ 6.7 years chronic (1 week- 44 years)
- □ 4.6 Treatments avg (1 -
- Mechanism
 - Traction injury
 - Disc 13
 - Falls 1
 - Other
 - Unknown



<u>Outcomes in Neuropathic Pain</u>

- □ 1^{st} Tx = **6.8/10** (4-10/10) reduced to **1.8 /10** (0-8/10)
 - P <.001
- \Box **2nd Tx** = **4.8/10** reduced to **.97/10**
 - P<.001</p>
- □ 65% fully recovered (n=13)
 - 4.6 Treatments (range 1-15)
- □ 25% terminated care prior to recovery (n=5)
- 1 person referred for epidural injection
- 1 person uses HomeCare unit for maintenance



Diabetic Peripheral Neuropathy





□ Necrotic tissue right 2nd digit

■ Necrotic tissue left 3rd digit

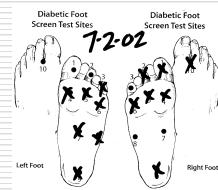
□ Sensation loss in 7/10

☐ All healed in 6 weeks

☐ 6 to 11 treatments

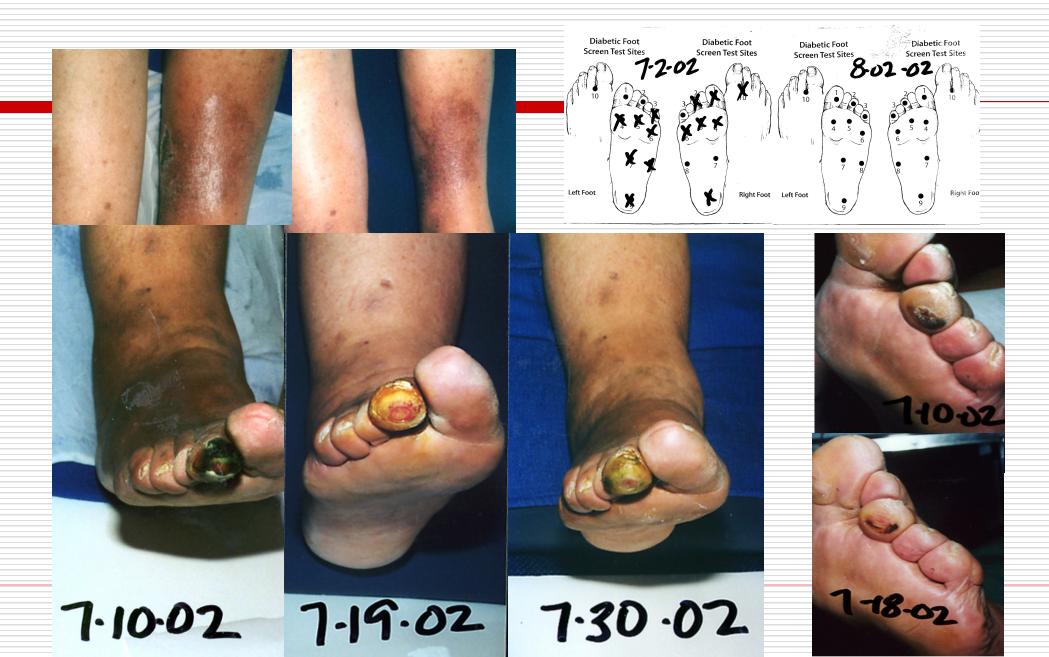








Restore Sensation – Heal Wounds



FSM Blinded Animal Research

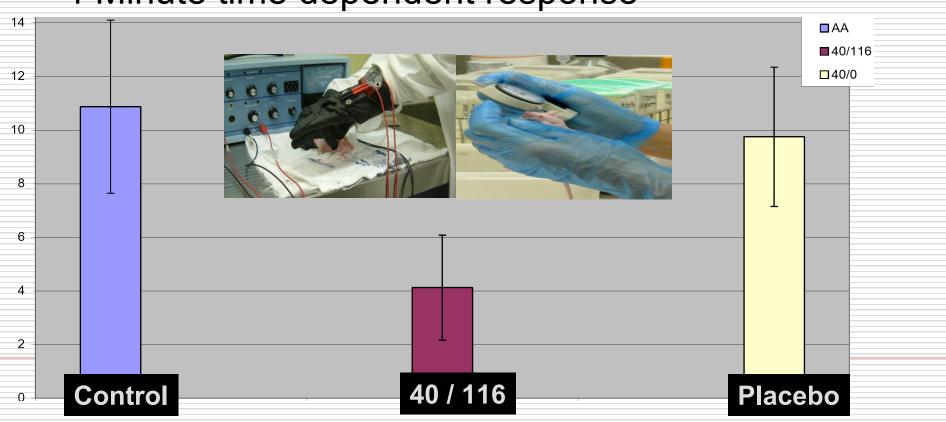
V. Reeve, W. Reilly, U of Sydney, 2003

62% reduction - LOX inflammation

30% reduction - COX inflammation

All animals responded

4 Minute time dependent response



Frequency Specific Response

No other Frequency Reduced Inflammation

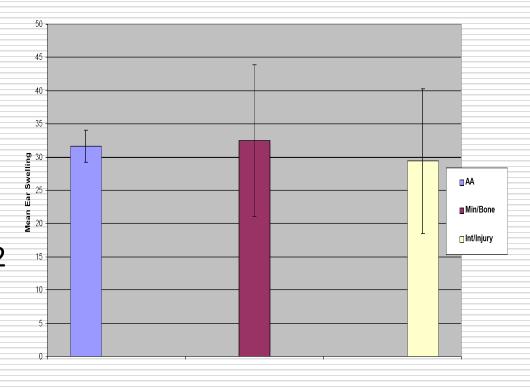
- □ 4 minutes of 0.1/0.1 Hz

 no reduction

 in ear swelling
- 4 minutes of 91/39, 59 Hzno reductionin ear swelling
- 4 minutes of 294, 321, 9/62Hz

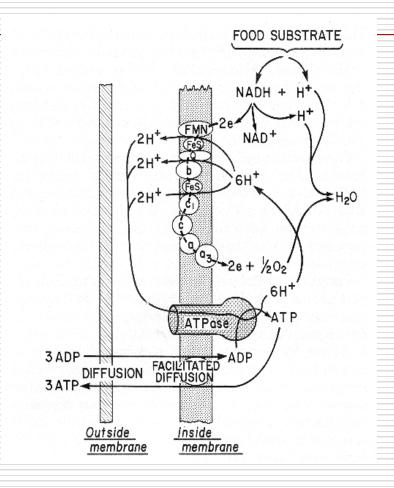
no reduction

in ear swelling



Microcurrent Increases ATP

- 10 500 micro amps
- Increased ATP production 500%
- Increased protein synthesis 70%
- Increased amino acid transport 40%
- Increases electron flow



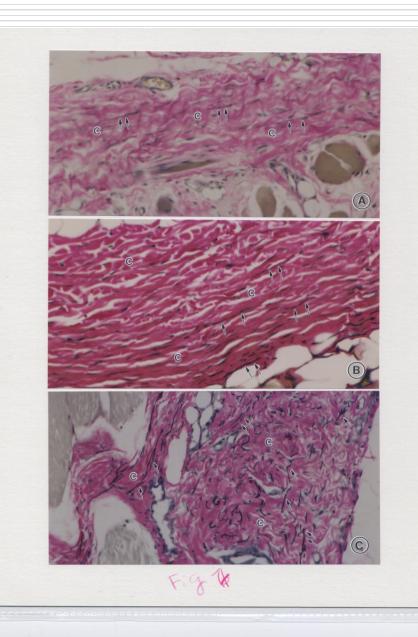
Cheng N 1982, The Effect of Electric Currents on ATP Generation, Protein Synthesis and Membrane Transport in Rat Skin. Clinical Orthopedics 171: 264-272.

Collagen

14% increase over 20 days of treatment Current at 0.3 Hz Before

Unpublished
University of Washington
Animal Study

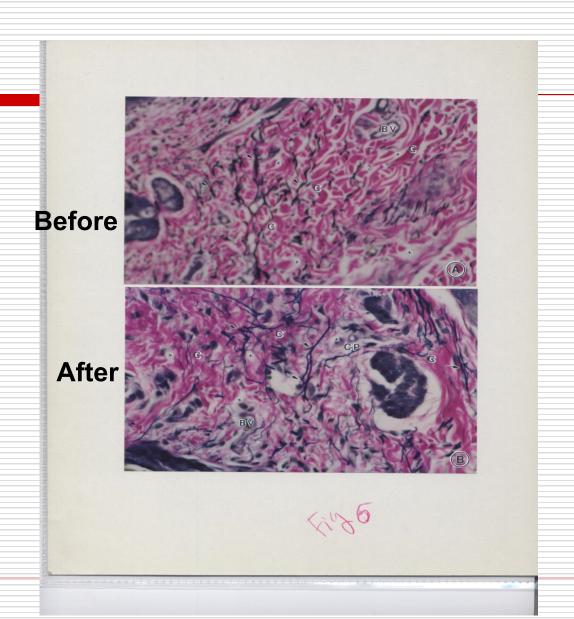
After



Elastin

48% increase over 20 days of treatment Current at 0.3 Hz

Unpublished
University of Washington
Animal Study



Frequency Specific Microcurrent

Changing the Paradigm

One Patient at a Time

Changing Lives

One Practitioner at a Time

www.frequencyspecific.com

Or Contact our clinic for more information/training

Acupuncture

- ☐ Dry needling of trigger points IMS
- Cupping and release of stagnant chi as well as fibrosis/adhesive fascial layers





Neural Therapy

- □ German "acupuncture" uses needles plus the beneficial effects of procaine
- □ Trigger point therapy
- Scar injections fascial adhesions
- Different methods of application can result in different delivery effects – short, long term, dermatomal, etc.

Regeneration Injection Therapies (RIT)

- □ Release of "growth factors" to stimulate repair and complete wound healing in inadequately repaired tissues to increase strength (rabbit tendon studies – 150%)
- □ It is regeneration therapy and not the production of scars ie-sclerotherapy. (Tissue biopsy studies)
- □ Several types of procedures:
 - Dextrose/procaine/-phenol,B12
 - Autologous blood
 - Platelet Rich Plasma

Prolotherapy

- ☐ Procaine plus dextrose 7-15-25% concentrate
- ☐ Procaine plus P2G phenol, glycerine, glucose
- □ Sodium morrhuate (arachadonic acid?)
 - Strong inflammatory reaction have to be careful in application, not for beginners

Prolotherapy

- □ Site specific have to inject the right areas
- □ Inject when "kissing the bone" light contact on boney surface, fibro-osseous junctions, tendons.
- Learn to feel the tissue with the needle
- Need a good understanding of anatomy of the connective tissues and injection sites

PRP- Platelet Rich Plasma

- Uses patient's own blood autologous cells
- Platelets must be concentrated 5 fold or more for best effect
- Concentrates growth factors and other factors for enhanced tissue regeneration
- Specialized equipment/ medical procedure
- More expensive than most other RIT
- May be more effective when properly applied

The Potential of Naturopathic Medicine

For

The Good, The Bad, and the Ugly
We can make the same mistakes as other
professions....

Or we can integrate and improve on health care outcomes....

□ Remember the Principles that Unite Us:

Naturopathic Principles:

- The Healing Power of Nature:
- Find the Cause:
- First Do No Harm:
- Treat the Whole Person:
- Preventive Medicine:
- Wellness
- Doctor as Teacher

These Principles Apply... To Everything We Do...

- When You are working with the natural principles that apply to all of nature ... and you are moving in the right direction... you will make progress with the patient...
- How do you know if you are going in the right direction....?

The Principles Guide You ...

Learn & develop Autonomic Response System Testing methods

And Listen, Feel, Sense, & Notice – the Patients Autonomic Response – in Real Time....

Then support the results with lab tests etc.

We All Need to Continue Developing Our Felt Senses...

- Through Workshops... and in our Practices
- Autonomic Response Testing
- Applied Kinesiology Training
- Applied Physiology Training
- ☐ EAV etc.

Naturopathic Treatments ... Are They Magic??

Without Continuing to Develop Autonomic Sensing...

We Lose our Art

Which is Really

Energetic Applications

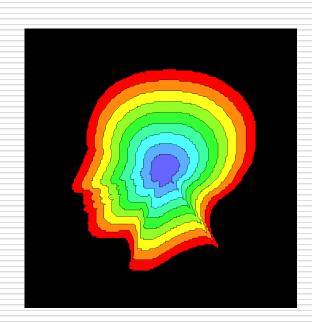
Of Our

Science Based Principles....

Its Our Real magic

Everyone of Us Has this Ability.....

- ☐ Its inherent within our nervous systems....
- Some have it more developed than others
- ☐ It needs training to develop it to a high of sophistication/distinction...
- We tend to not talk about it or emphasize it... because we want to fit in
 -To a world of "Muggles".....



You Can't Learn This From a Book

- ☐ All the Great One's use this process in some capacity...
- ☐ They often don't speak openly about it...
- □ To Develop your felt sense and Autonomic Response testing
- You will need mentoring, and attending workshops.....
- ☐ And <u>practice</u> in between.....

Workshops

- □ Spinal Screening Techniques
- Upper Extremity Manual Muscle Testing
- Lower Extremity Manual Muscle Testing

□Thank You!!!