

Frequency Specific Microcurrent



A New Paradigm in Medicine
Changes Outcomes - Changes Lives

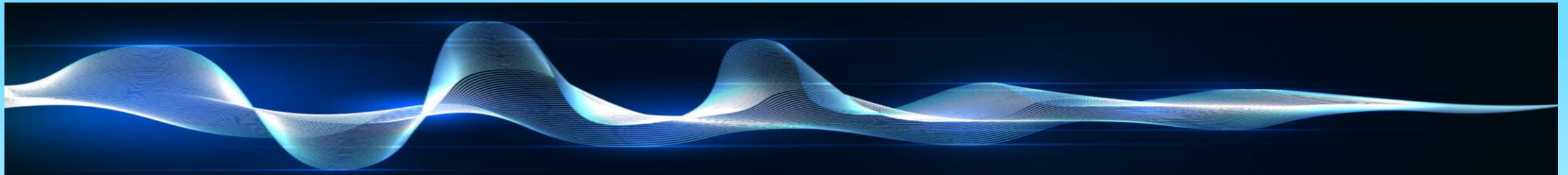
Carolyn McMakin MA, DC

What is Frequency Specific Microcurrent?

FSM is a New Tool

**You Probably didn't Know you Needed
that does Some Things**

You didn't Think were Possible



Frequency Specific Microcurrent History

Frequency Specific Therapies were developed in the early 1900's by MD's and Osteopaths in the US, UK, and Germany

Used by thousands of physicians until 1934



FSM History

- Flexner Report published in 1910
- Fully implemented by 1925
- Drugs and surgery were to be the only tools of medicine
- Medicine labeled frequency therapies as fakes, frauds
- Nutrition, herbs, homeopathy, frequency therapies were outlawed
- Every medical intervention except prescription medication and surgery were outlawed



MEDICAL EDUCATION
IN THE
UNITED STATES AND CANADA
A REPORT TO
THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF TEACHING
BY
ABRAHAM FLEXNER
WITH AN INTRODUCTION BY
HENRY S. PRITCHETT
PRESIDENT OF THE FOUNDATION

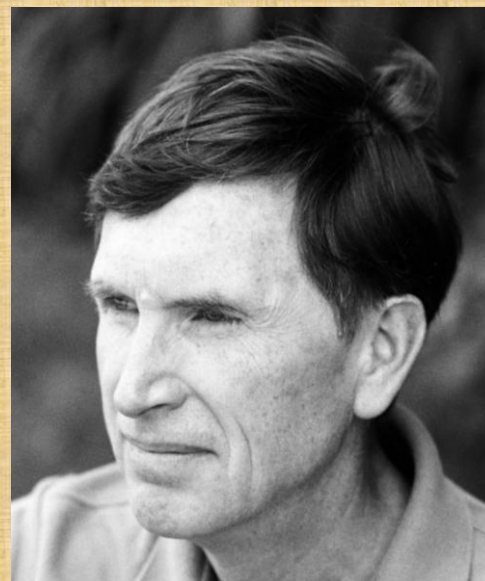
FSM History

- Physicians who used these tools would lose their license.
- The research and history were lost when the researchers died.
- Practitioners were persecuted and some were put in jail.
- The devices went into clinic back rooms or in the trash.



FSM History

- Harry VanGelder an Osteopath and Naturopath from Australia and the UK bought a practice in Canada in 1946, walked into a back room of the clinic and found a device under a sheet that was made in 1922.
- That device came with a list of frequencies for pathologies and tissues.
- In 1983, George Douglas worked with VanGelder and brought home a copy of the frequency list and put it in a drawer.



Channel A – Conditions

To reverse pathologies

9 Hz – allergy reaction

13 Hz - scarring

18 Hz – stop bleeding

40 Hz – reduce inflammation

81 Hz- increase secretions

94 Hz – nerve trauma

Channel B – Tissues

To target Tissues

10 Hz-spinal cord

62 Hz-artery

77 Hz-connective tissue

90 Hz - Cortex

142 Hz - Fascia

396 Hz - Nerve

FSM History

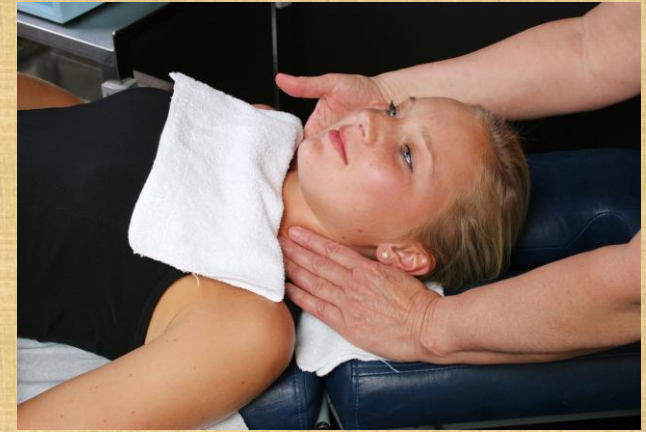
- Microcurrent devices approved in the category of TENS devices in 1971



- Dr. Douglas found the Frequency list in a drawer in 1995
- He suggested using the frequencies with a 2-channel microcurrent device because VanGelder's machine had two channels.
- Uncertain how frequencies were derived
- Uncertain of mechanism of action
- 1920's equipment was not microcurrent
- 1920's therapy was not FSM

FSM History

- 1995 and 1996 frequencies used to treat muscle pain. Nerve Pain 1998. Fibromyalgia 1999. Scar tissue 2003
- Blinded and active treatments used in 1995 to ensure safety and efficacy
- Taught in January 1997 to find out if the positive results were placebo or real.
- By June it was clear the results were not placebo.
- Benefits and effects are teachable and reproducible
- Animal and human research and clinical results have accumulated since then.



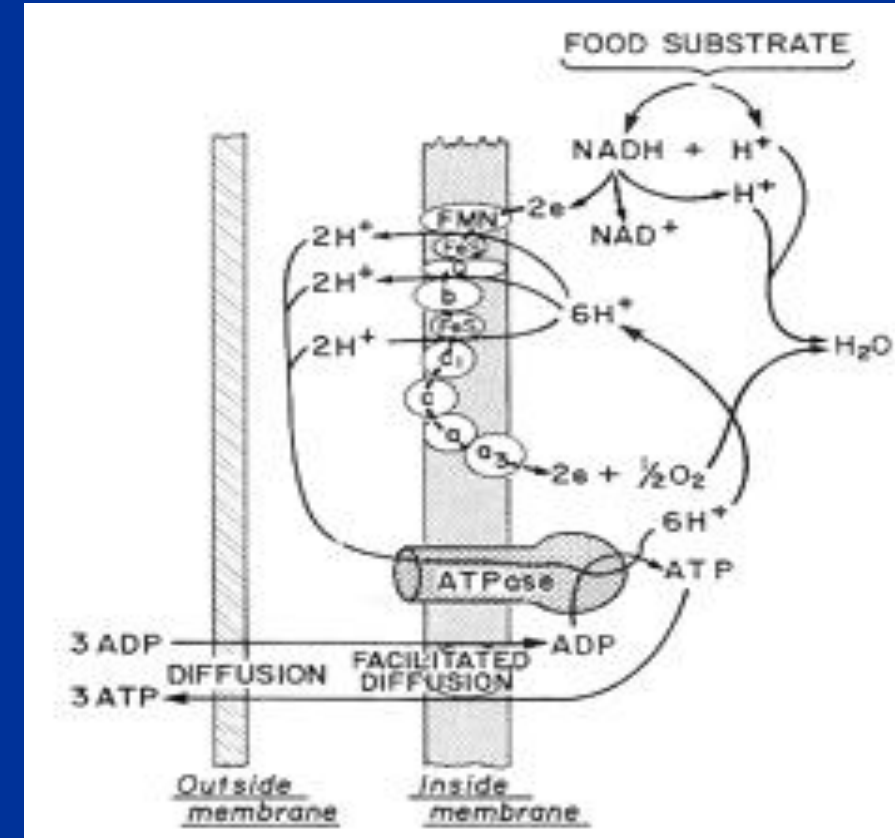
Microcurrent Devices

- Approved in the class of TENS (Rx) in 1971
 - Subsensory current is millionths of an ampere
 - Not TENS – 1,000 times less current
- Approved for aesthetic use (non Rx)
- Used for wound healing, pain control
- Microcurrent devices for FSM
 - 2 Independent 3-digit specific channels
 - Constant current – 20 to 500 μ amps
 - Screen that shows frequency, current, polarity
 - PDI devices are US made, ISO certified



Microcurrent Increases ATP 500%

- 10 – 500 micro amps
- Increases ATP production 500%
- Increases protein synthesis 70%
- Increases amino acid transport 40%
- Increased cAMP in human lymphocytes - in vivo
- Activates signal transduction
- 500 to 1000 uamps ATP stopped increasing
- Above 1000 uamps reduced ATP



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

Seegers, JC, 2001; Activation of signal transduction mechanisms may underlie the Therapeutic effects of an applied electric field. *Med Hypothesis*; 57 (2), 224-230

Seegers JC, 2002, A pulsed DC electric field affects P2-purinergic receptor functions by altering the ATP levels in in vitro and in vivo systems. *Medical Hypothesis*, 58 (2) 171-176 10

CAROLYN R. McMAKIN

Frequency-specific Microcurrent ^{IN} Pain Management



CHURCHILL
LIVINGSTONE
ELSEVIER

Lecture from the author
PowerPoint teaching slides
Practical demos of techniques
Fully searchable text
Downloadable images

- Contains
- **DVD-ROM**
- featuring



FSM Text Book Elsevier 2010

Available at Amazon.com

Recommended Reading

The Resonance Effect

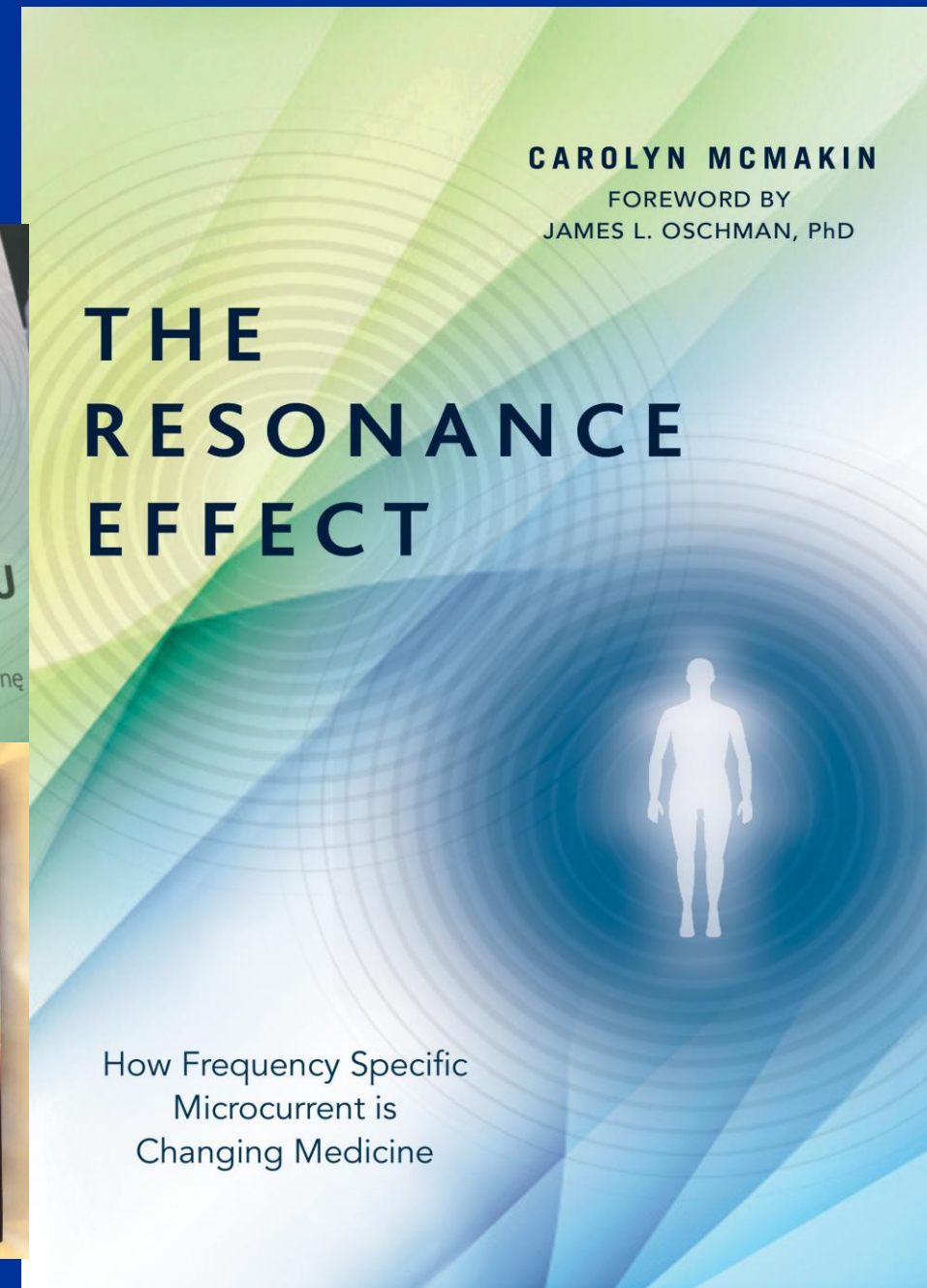
A book for patients and colleagues

This is a "can't put it down", "page turner" of a book. It is fascinating, funny, inspired, exciting, and altogether delightful.

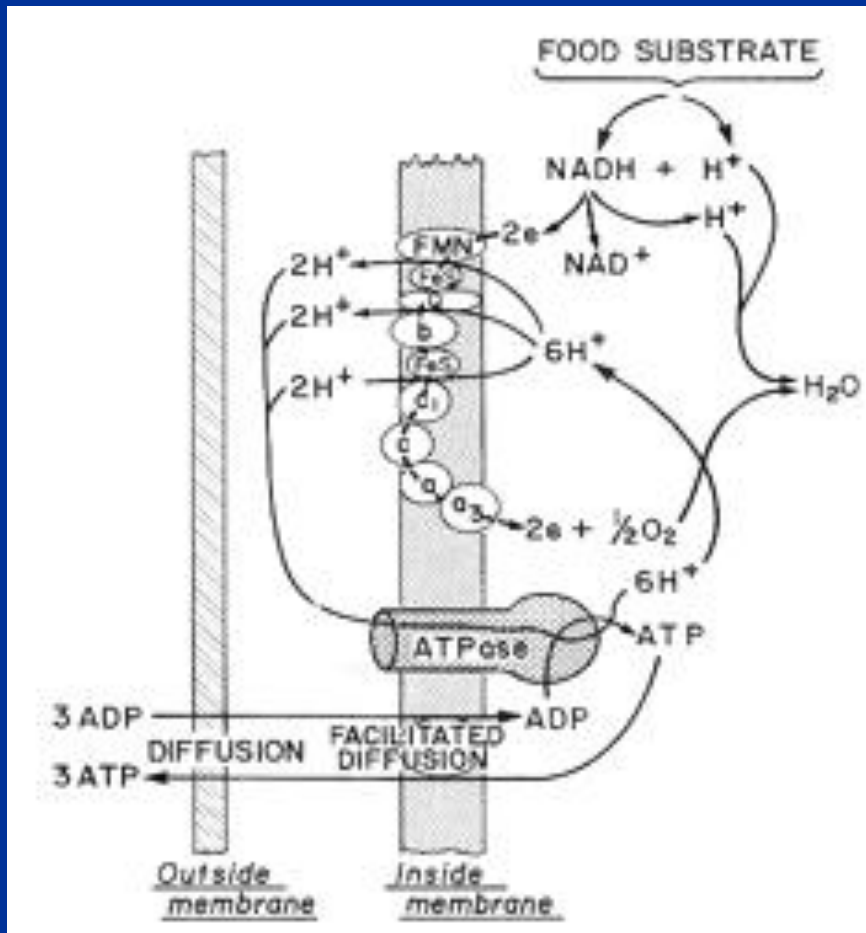
James Oschman, PhD

Energy Medicine the Scientific Basis

- Available on Amazon
- Audio book - Audible
- TheResonanceEffect.org
- English, French, German, Mandarin, Polish, Japanese, Spanish, Turkish



500% increase in ATP is the effect of the current.



What happens
when you add
the effects
of the
frequencies?

The Beginning



- In 1994, I was working on a lower leg trigger point with ischemic compression .
- The patient's pain went from 5/10 to a 1/10 and then shot up to 7/10.
- I called George Douglas (my teacher) and asked him what to do. He said:
- "Connect the microcurrent to the patient's leg and use 18hz on channel A and 62hz on channel B". What's that for? "I'll tell you if it works."
- The pain disappeared in 5 minutes and I called to ask what just happened.
- "You broke a blood vessel in her leg and those are the frequencies from the list to stop bleeding"
- What list?
- In 1995, George Douglas, DC gave me the list to use with a 2-channel microcurrent device.

That was the beginning of Frequency Specific Microcurrent

I started using the frequencies to treat my patients.

The frequencies treated muscle and nerve pain,
healed diabetic wounds and peripheral neuropathies.

learned that specific frequencies have specific effects
that change very specific biological tissues.

FSM Blinded Animal Research

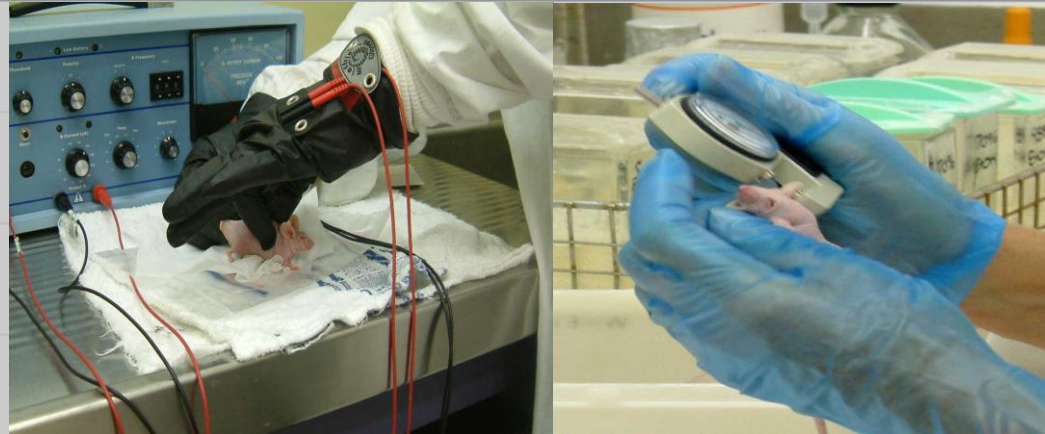
Only One Frequency Reduced Inflammation

62% reduction in LOX Mediated Inflammation

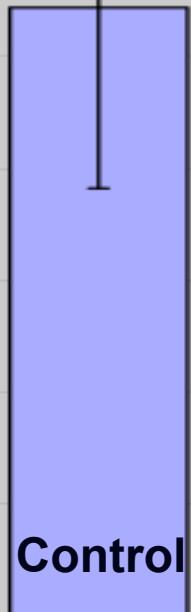
30% reduction in COX Mediated Inflammation

All animals responded - 4 Minute time dependent response

Arachidonic
Acid caused
swelling



University of Sydney, Animal Science Department, 2003
Vivienne Reeve, PhD, Wayne Reilly, ND



Control



40 / 116



Placebo

■ AA
■ 40/116
■ 40/0

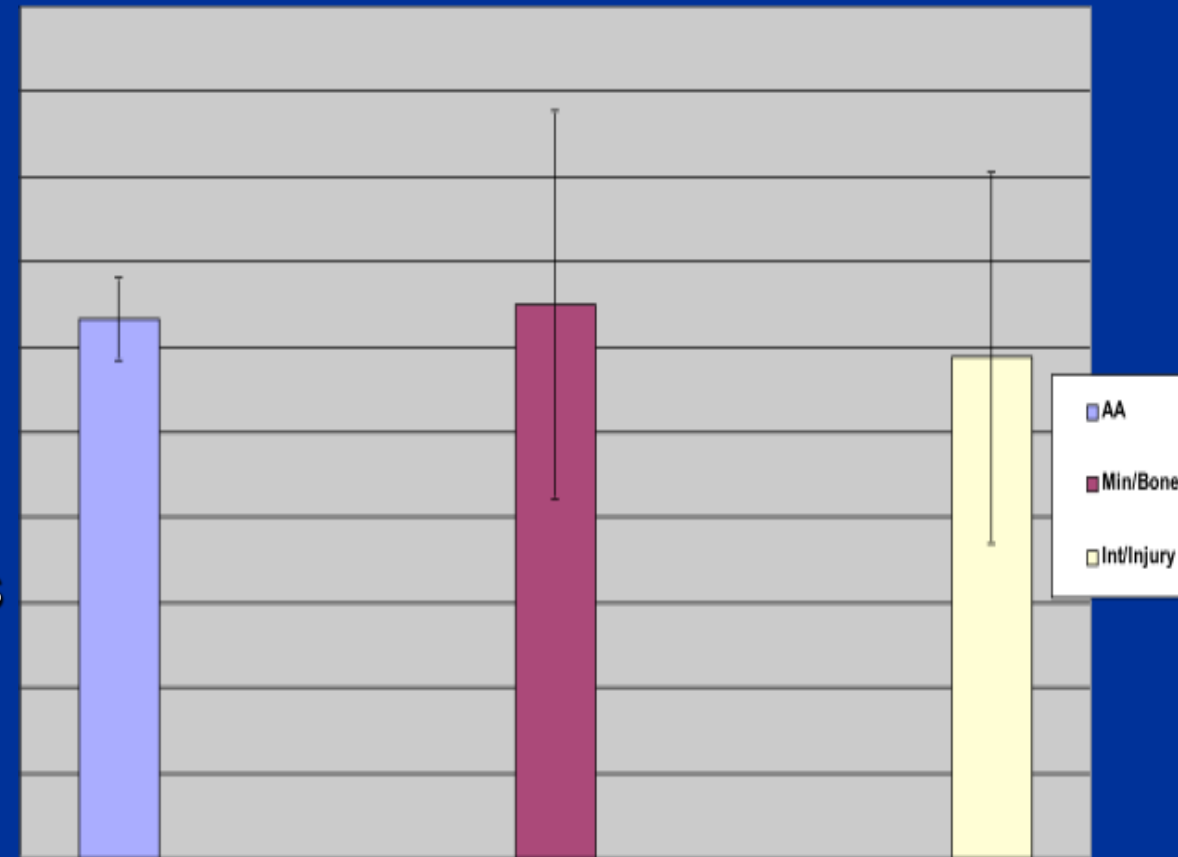
What would happen if you could Reduce LOX Inflammation by 62% in 4 minutes? In:

- Irritable Bowel Disease
- Inflammatory Bowel disease
- Crohn's
- Leaky Gut
- Liver Disease
- Pancreatitis
- Rheumatoid Arthritis
- Asthma
- Dementia
- TBI / MTBI
- Depression
- Anxiety
- Nerve pain
- Joint pain

Frequency Specific Response

No other frequency reduced inflammation

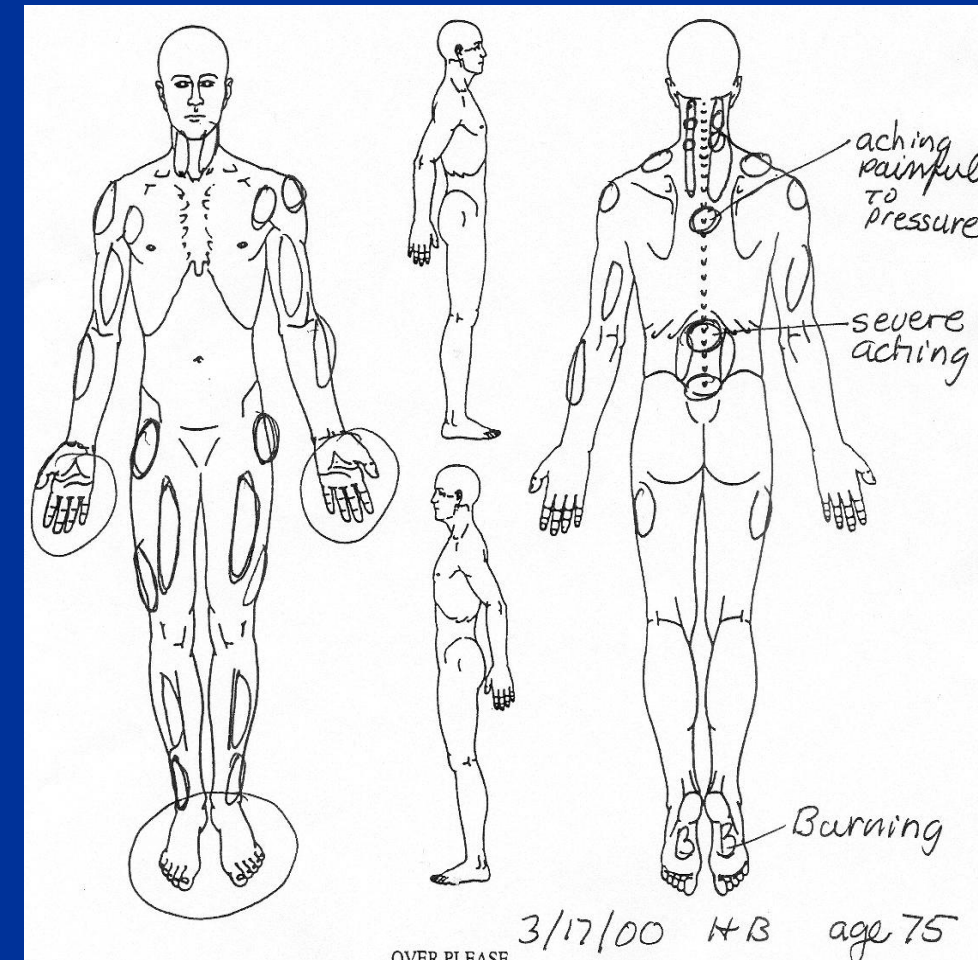
- 4 minutes of frequency 0.1/0.1
- **No reduction** in ear swelling
- 4 minutes of frequency for “Mineral/Bone” gives
- **No reduction** in ear swelling
- 4 minutes of “Intermediate injury” frequencies
- **No reduction** in ear swelling
- 4 minutes of 40 / 355
- **No reduction** in ear swelling



Cytokine changes with microcurrent treatment of fibromyalgia associated with cervical spine trauma

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

- 54 fibromyalgia patients with history of trauma
 - 9.5yrs (1-50 years) Chronicity
- NIH Blood sample data on 6 patients
 - Control = myofascial trigger points
- Characteristic Pain Pattern
- Chronic non restorative sleep
- Hyperactive patellar reflexes
- Dermatomal hyperesthesia



Fibromyalgia CAN Be Cured

- Pain reduced 7.4 to 1.3/10 in 90 min
- 58% recovered in 4 months
- Only one frequency combination reduced pain
- Individualized recovery program
 - FSM, Physical therapy, reconditioning
 - Medication management / withdrawal
- 13 / 54 patients discontinued treatment
 - For reasons not related to treatment side effects
- 27 cases presented at Grand Rounds at NIH
- Cytokine data followed 3 months later

40 / 10

Reduce Inflammation / Spinal Cord



IL-1 normal= 0-25pg/ml

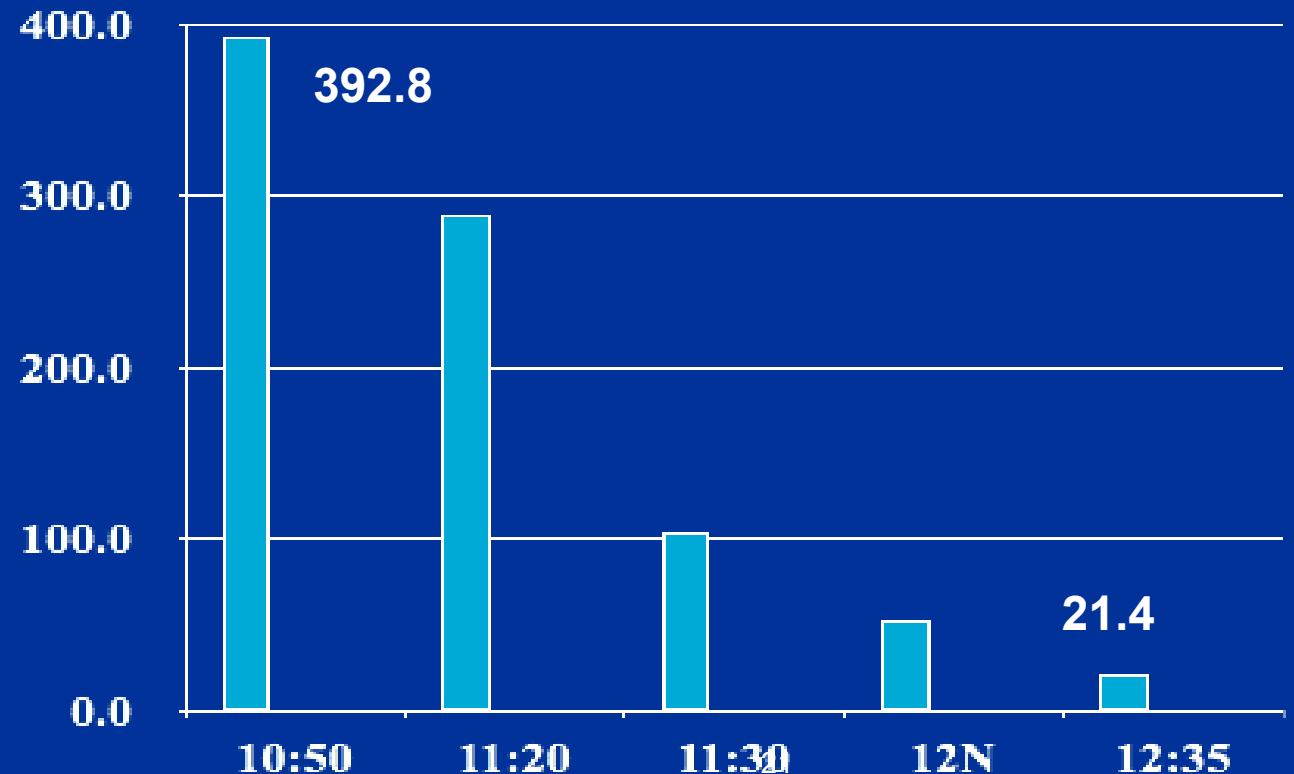
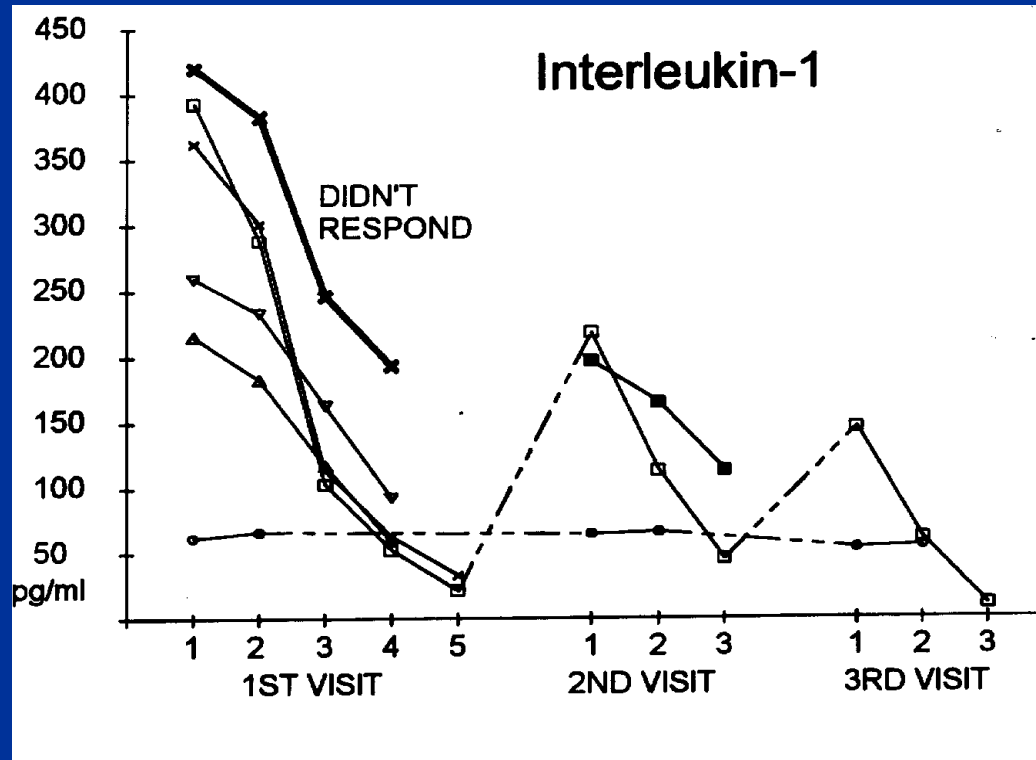
Blood sample data from NIH

■ **330** $\pm$ 39 reduced to **80** $\pm$ 31pg/ml

P=0.004

Linear regression on time points

P=0.0001



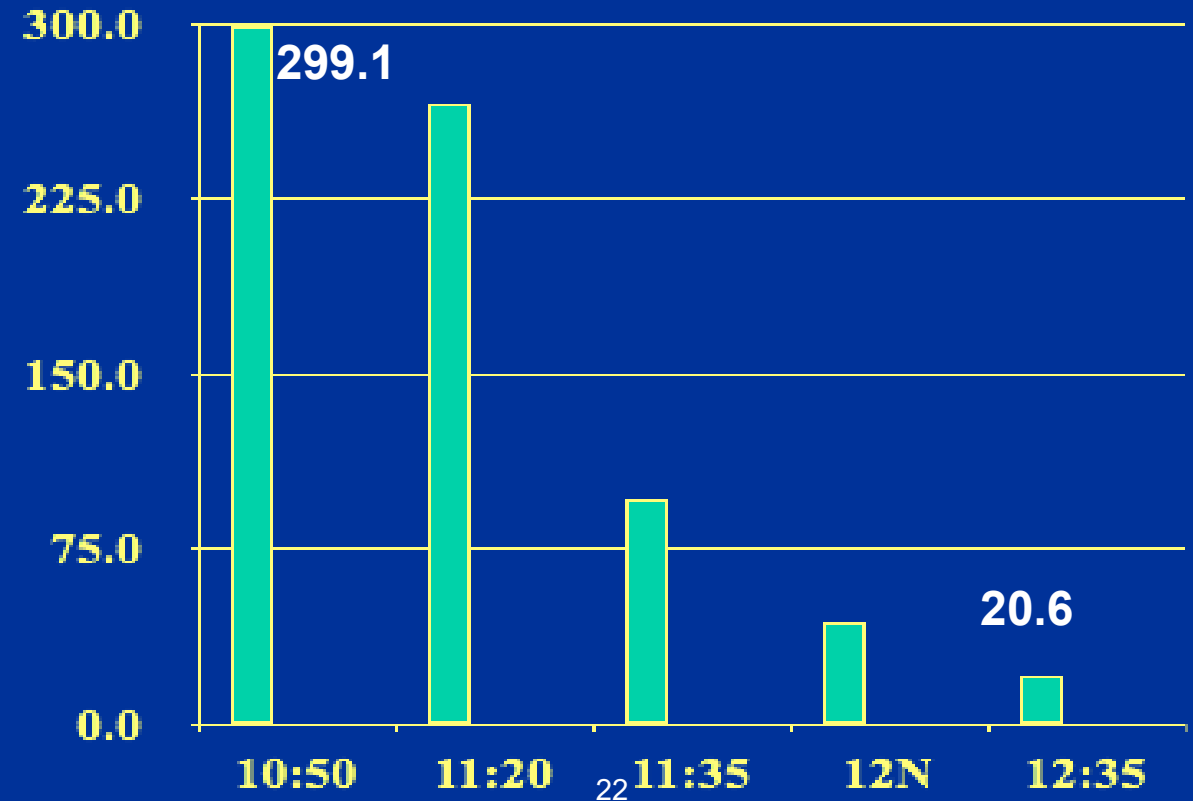
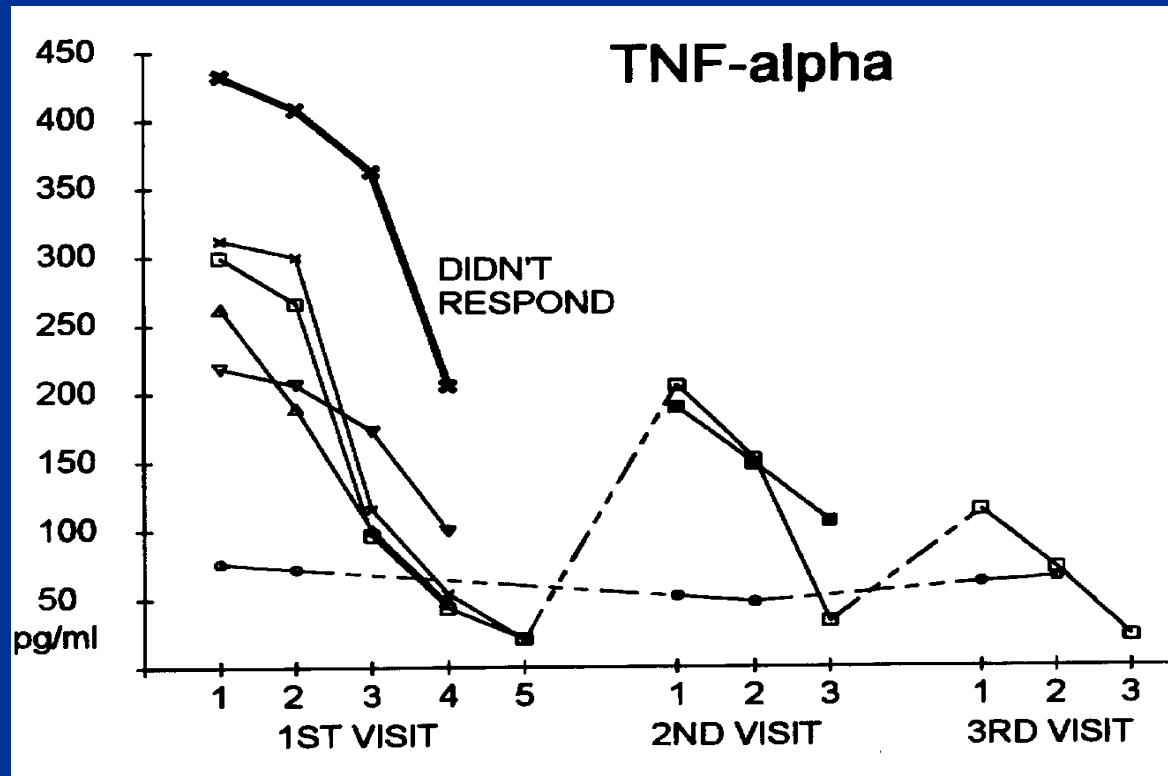
TNF-alpha

normal=0-25pg/ml

Blood sample data from NIH

■ **305** $\pm$ 36 reduced to **78** $\pm$ 35 pg/ml

P=0.002, t-test

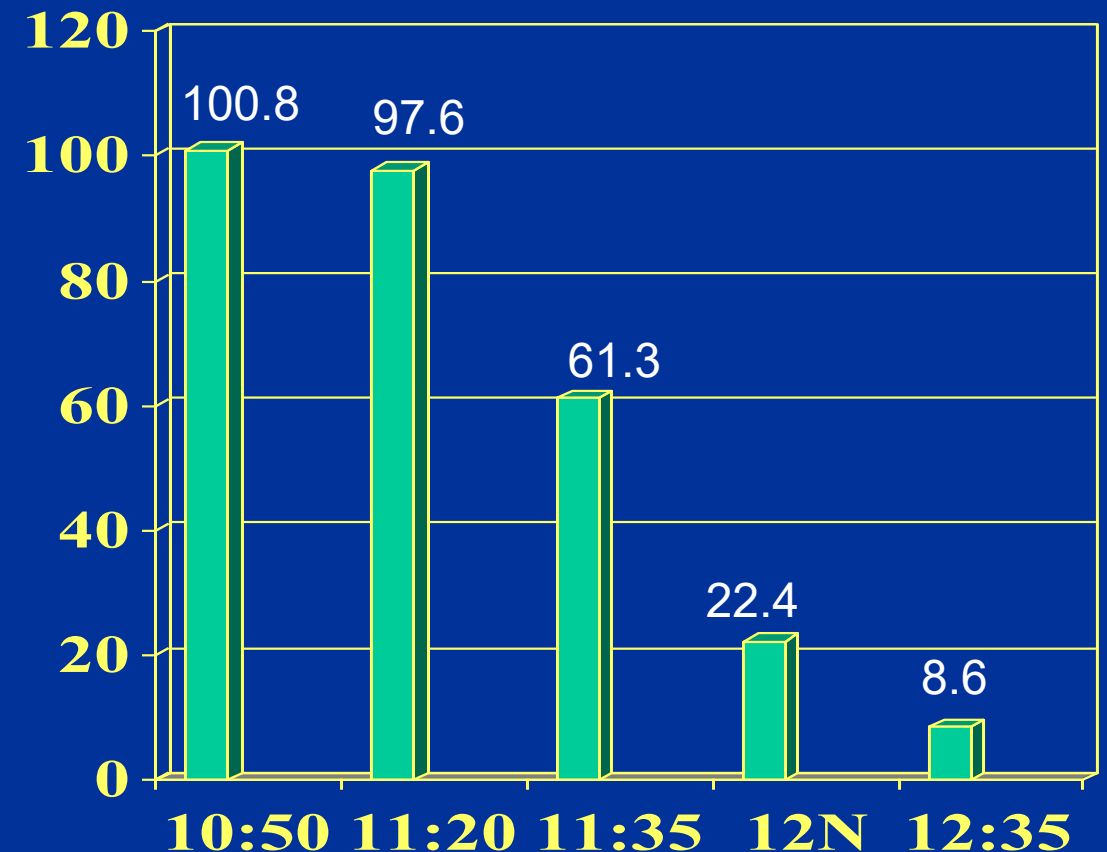


Calcitonin Gene Related Peptide

normal = 0-20 pg/ml

Blood sample data from NIH

- Calcitonin gene-related peptide (CGRP) is a neuropeptide produced in both the central and peripheral nervous systems.
- It functions primarily as a potent vasodilator and plays a major role in pain transmission, central sensitization and neurogenic inflammation



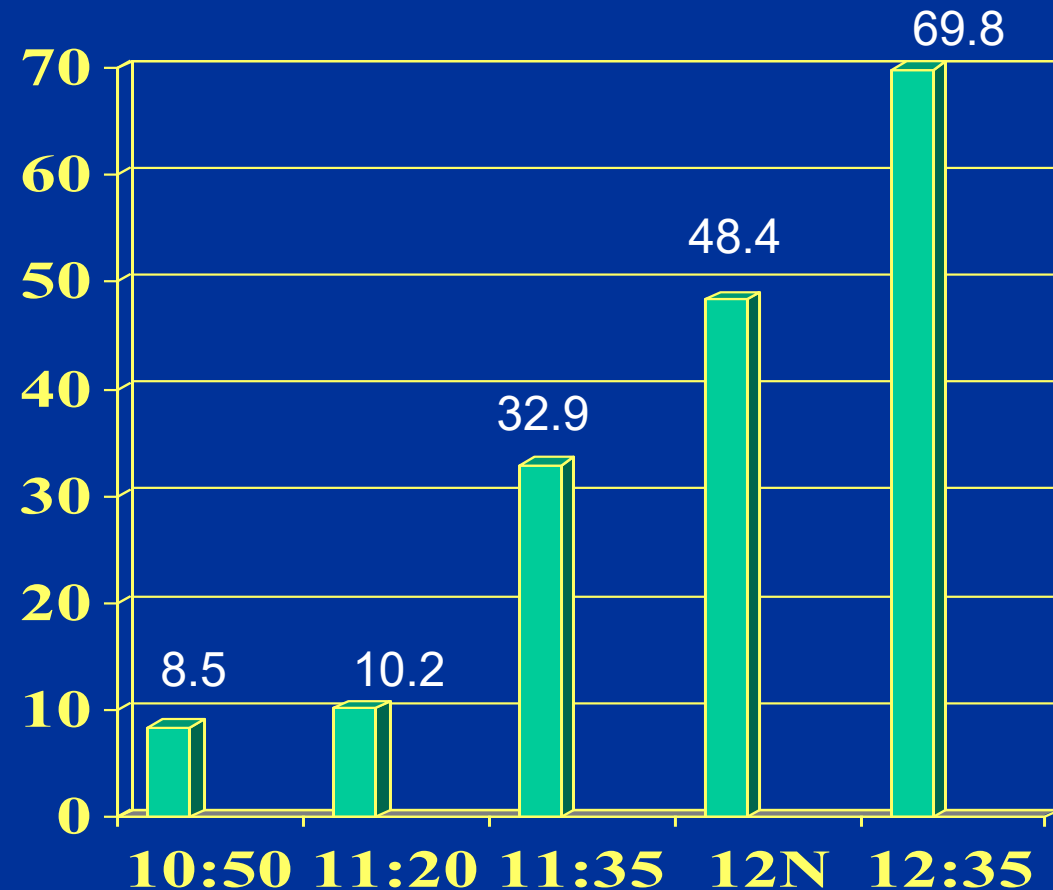
Vasoactive Intestinal Peptide

normal 0-20pg/ml

Blood sample data from NIH

Vasoactive Intestinal Peptide (VIP) is a neuropeptide that acts as a hormone, neurotransmitter, and immune regulator.

Produced throughout the brain, gut, and immune system, it promotes digestion, relaxes smooth muscles, dilates blood vessels, and suppresses inflammatory responses

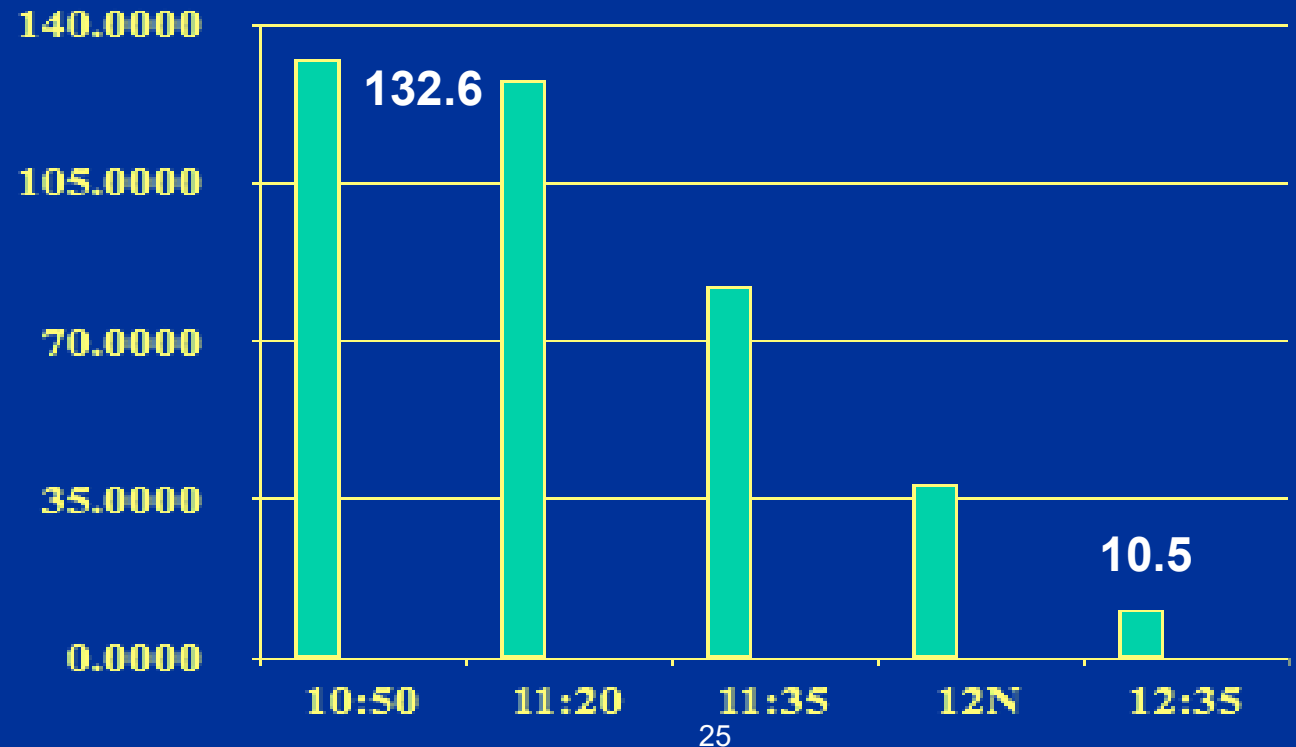
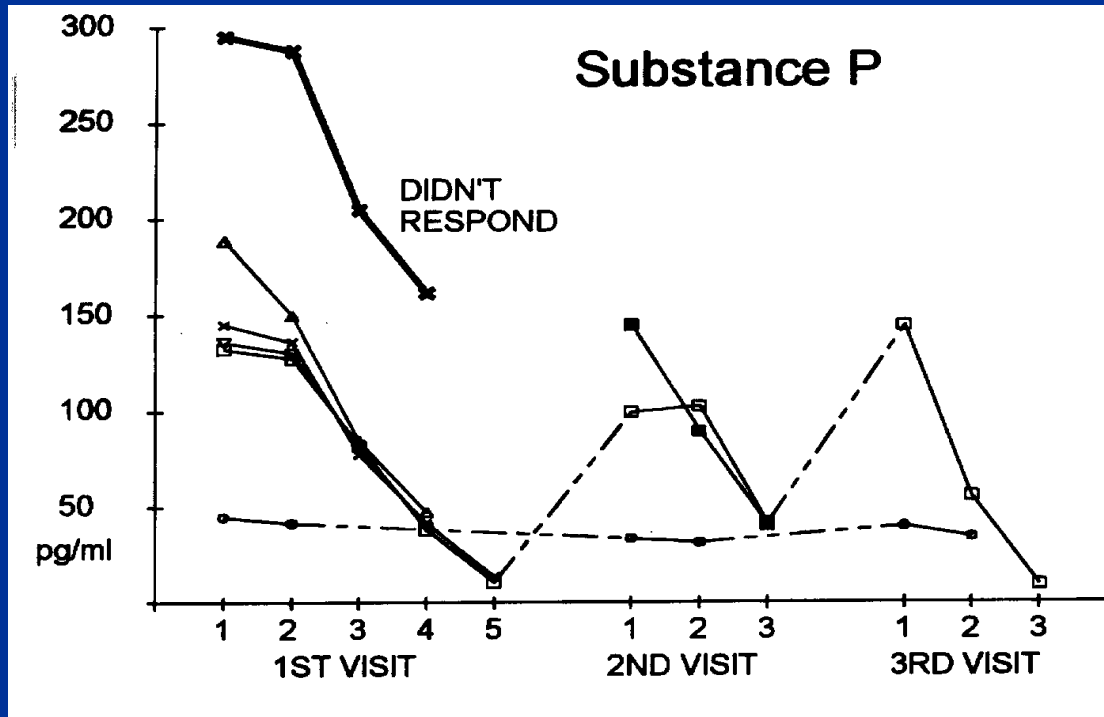


Substance P_{normal=0-30pg/ml}

Substance P is made in the spinal cord

■ **180** ± 31 reduced to **54** ± 28 pg/ml

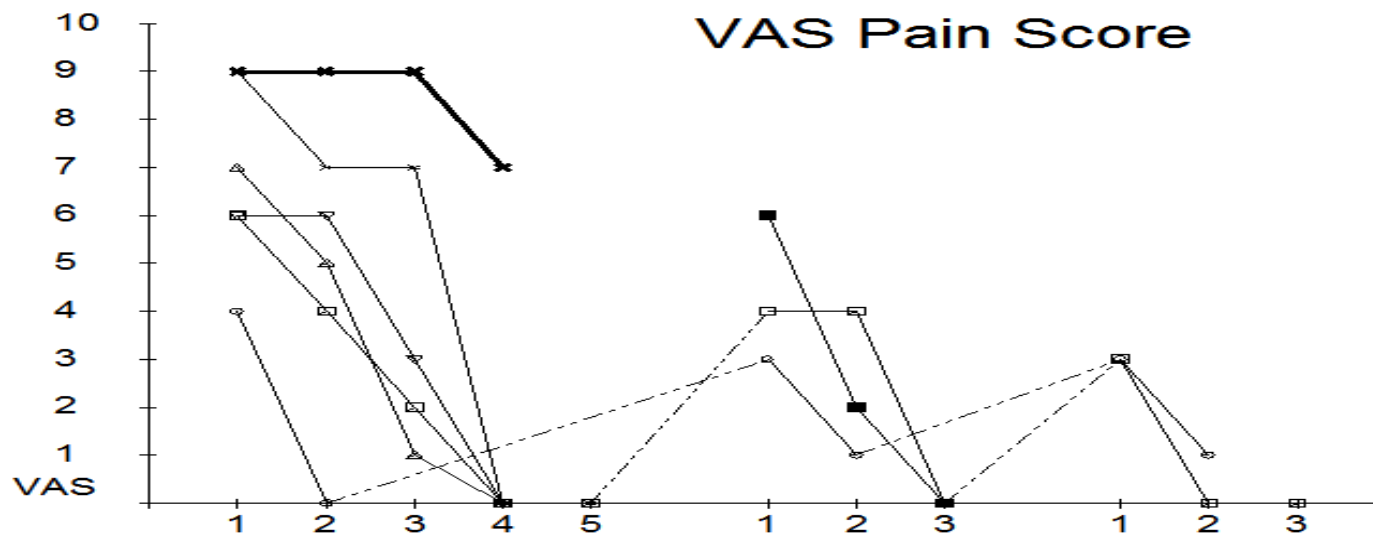
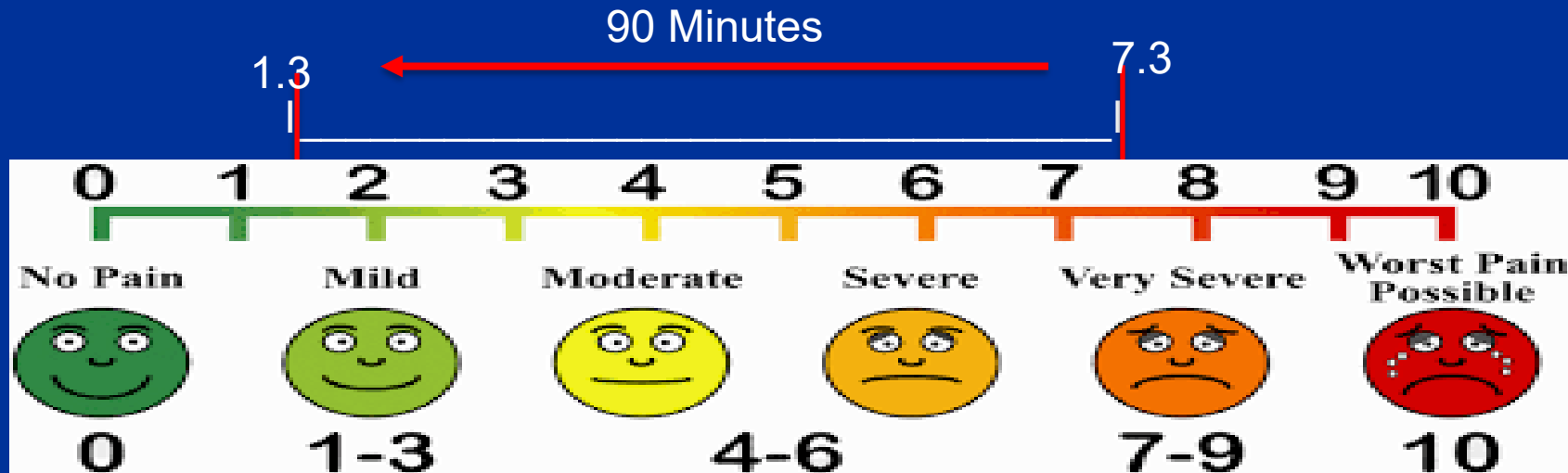
P=0.0001, t-test



Pain Relief leads to Recovery

7.3/10 ± 1.2 reduced to **1.3/10** ± 1.1

P < 0.0001



All patients had pain relief
If pain stayed below 4/10,
58% of patients
recovered in 4 months

**In Medicine Cytokines are difficult to Change
and
When they change, they change slowly over
months
With medications with significant side effects**

**In medicine, resolving scar tissue is
expensive, painful, difficult or impossible
FSM resolves scar tissue, quickly comfortably, permanently**



Burn Center Projects

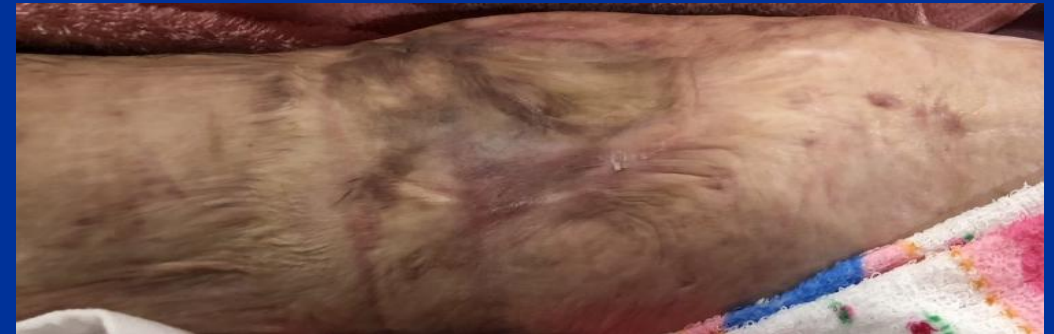
FSM resolves Scar Tissue in Mature Burns

8 Patient Pilot Trial - Every patient had statistically significant, permanent increases in range of motion after three one-hour treatments



“The Use of Microcurrent and Autocatalytic Silver Plated Nylon Dressings in Human Burn Patients: A Feasibility Study”, Huckfeldt, Mikkelsen, Larson, Hammond, Flick, McMakin , Pacific Rim Burn Conference 2003

Taiwan PM&R Case Report 2019
3-year-chronic full thickness burn



Before Tx: 15° rigid flexion



After 1Hr FSM treatment for scarring
After Tx: 0° Flexion, full ROM

Resolving Scar Tissue

5 treatments with FSM

Remove scarring / blood supply, connective tissue, nerves, skin



FSM resolves chronic pain and adhesions after ulnar transposition surgery

Journal of Novel Physiotherapy and Rehabilitation September 2017, Jodie Adams, DPT

- Age 19 - Ulnar nerve transposition surgery
 - Surgery produced no change in pain or ROM
- Age 28 – increased pain (5/10), reduced ROM, TAOS 86%
 - 11 physical therapy sessions ASTYM, e-stim, ice, exercise.
 - Pain at discharge 4/10. TAOS 92%
- Age 29 – Pain 7/10, limited ROM, TAOS 80%
- Three sessions of FSM eliminated pain
 - and improved range of motion
- Pain at discharge 0/10, TAOS 100%
- Results maintained at 1 year follow up.





40% of people in the UK will have nerve pain at some time.

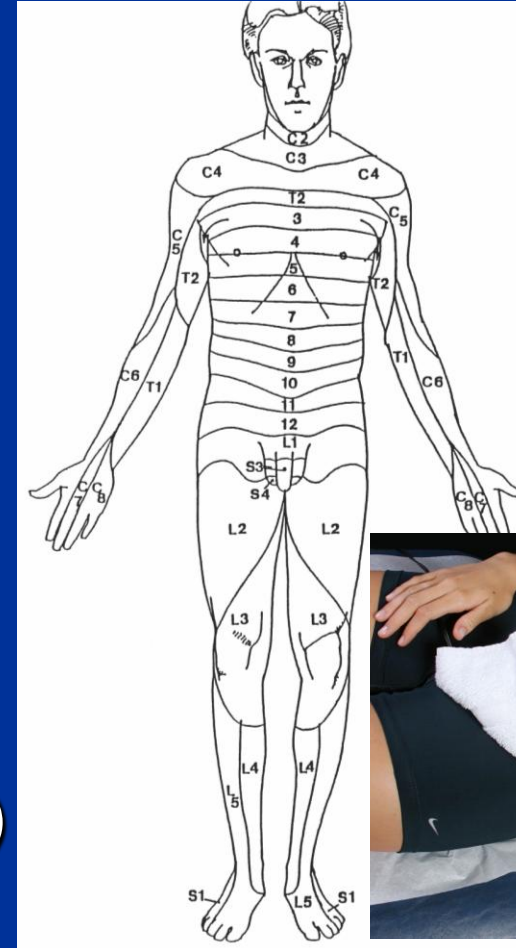
In medicine, nerve pain is difficult or impossible to treat

With FSM ,nerve pain is the easiest thing we treat

Outcomes in Neuropathic Pain

Pain Practitioner Fall, 2010

- N=20 – average chronicity 6.7 years
- All patients experience pain reduction
- Pain reduced 1st Tx = 6.8/10 to 1.8
 - P < .001
- Pain reduced 2nd Tx = 4.8/10 to .97/10
 - P < .001
- 65% fully recovered (n=13)
 - 4.6 Treatments (1-15)
- No adverse reactions
- 25% terminated care prior to recovery (n=5)

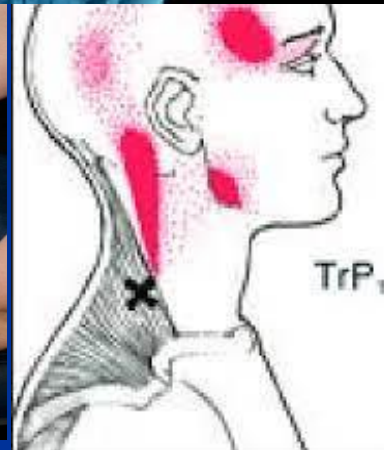


Neck Pain

50 Cases published – TICC, 1998

203 million people have neck pain world wide

- 4.7 years avg chronicity
 - Range: 1 to 28 years
- 88% failed with 3 to 6 other practitioner types
 - Patients were their own controls. If they were going to have a placebo effect, they would have had it with one of the 3 to 6 other practitioners who treated them
- 11.2 treatments
- 7.9 weeks
- Start VAS 6.8/10
- End VAS 1.5/10



Microcurrent Treatment of Myofascial Pain in the Head, Neck and Face”, Topics in Clinical Chiropractic, Vol5, Number1, March 1998

Low Back Pain

23 Cases Published - JBMT, 2004

619 million people have low back pain world wide

- 8.4 years avg chronicity:
- Range: .1 to 20 yrs
- 87% failed with 3 to 6 other practitioner types
 - Patients were their own controls.
 - If it was a placebo affect , it would happened with one of the 3 to 6 other practitioners who treated them
- 5.7 treatments
- 5.7 weeks
- Start VAS 6.8/10
- End VAS 1.6/10



“Microcurrent Therapy: A novel treatment method for chronic low back myofascial pain.” Journal of Bodywork and Movement Therapies, 2004, 8, 143-153

Effect of adjuvant frequency-specific microcurrent on pain and disability in patients treated with physical rehabilitation for neck and low back pain

G Shetty, *, P Rawat, A Sharma , JBMT, 24 (2020) 168-175

- Retrospective case-control study
- Compared pre- and post-treatment numerical pain rating scale (NPRS) score, Oswestry disability index (ODI) score, neck disability index (NDI) score, disability categories, and treatment outcome categories
- 167 LBP FSM group
- 61 LBP Control group
- FSM results considering all objective measures $p < 0.006$



FSM Improves Healing

Frequencies Change Neuro Recovery

38-year-old, 3 -year chronic stroke patient. Two treatments in 6 days.

Only one frequency combination
reduces stroke spasticity
81 / 92
Increase secretions /
Sensory motor cortex

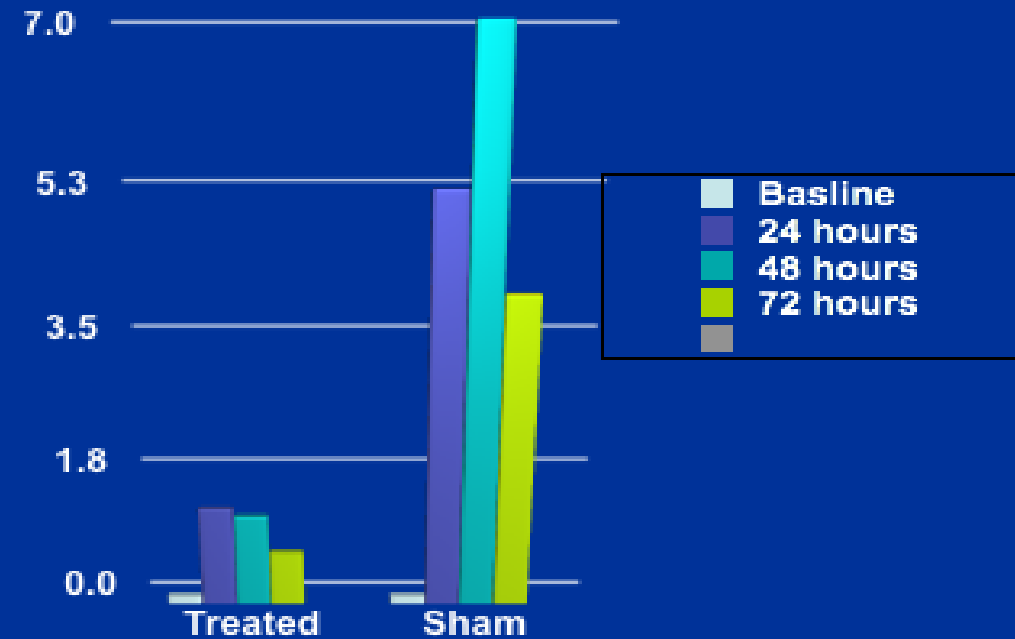


Recovery permanent
Until the next stroke
Caused by apnea

Delayed Onset Muscle Soreness

Controlled trial: JBMT June, 2010

	Treated	Sham
■ Baseline	0 ± 0	0 ± 0
■ 24 Hr	1.3	5.2
■ 48 Hr	1.2	7.0
■ 72 Hr	0.7	4.0



p value <.0005 at all time measures

■ No other effective treatment for DOMS



Curtis, Fallows, Morris, McMakin. The efficacy of frequency specific microcurrent therapy on delayed onset muscle soreness. JBMT; 2010; 14 (3): 272-9

Results Post Facelift

80 Minute treatment

Immediately Post-Op and daily for 7 days



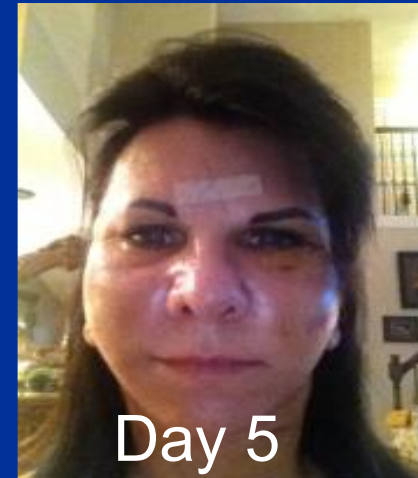
Day 1



Day 2



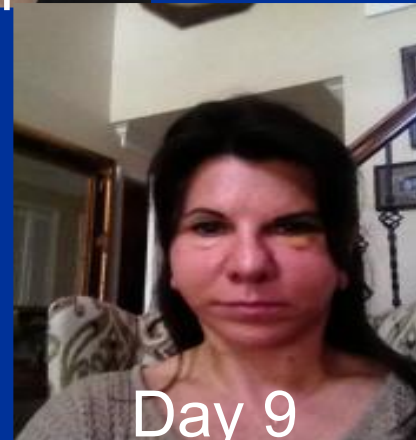
Day 4



Day 5



Day 6



Day 9



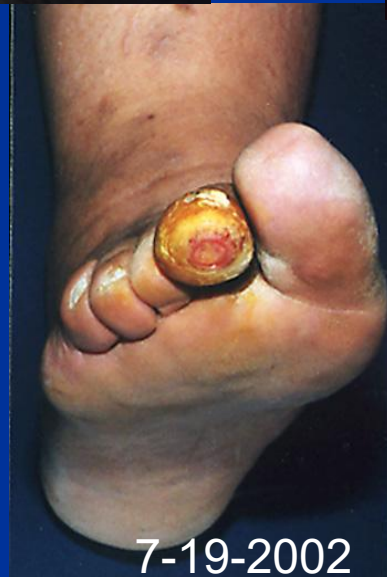
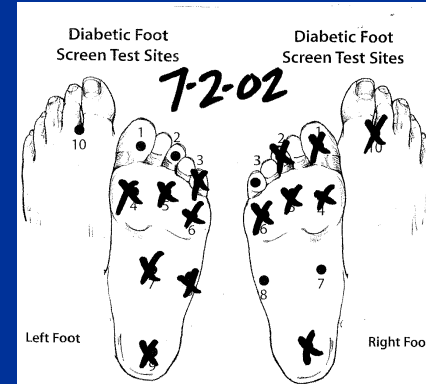
Day 11

Case Report Marissa Brennan

Diabetic Wounds and Neuropathies

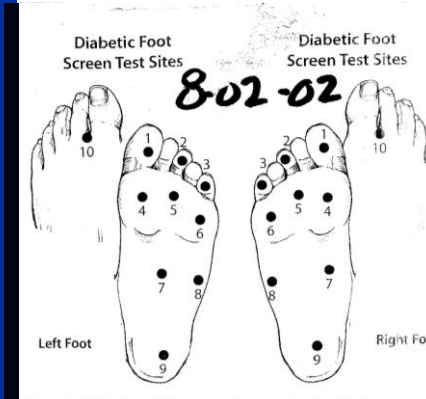


Sensation Lost

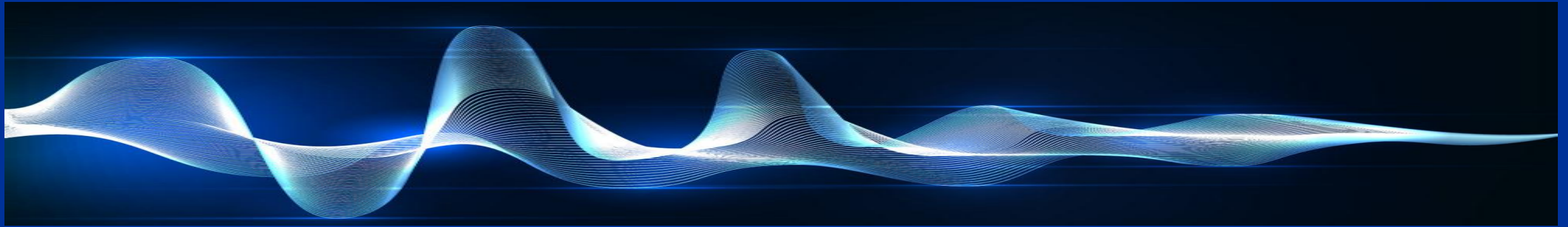


Sensation Normal

2 Treatments / week
4 weeks

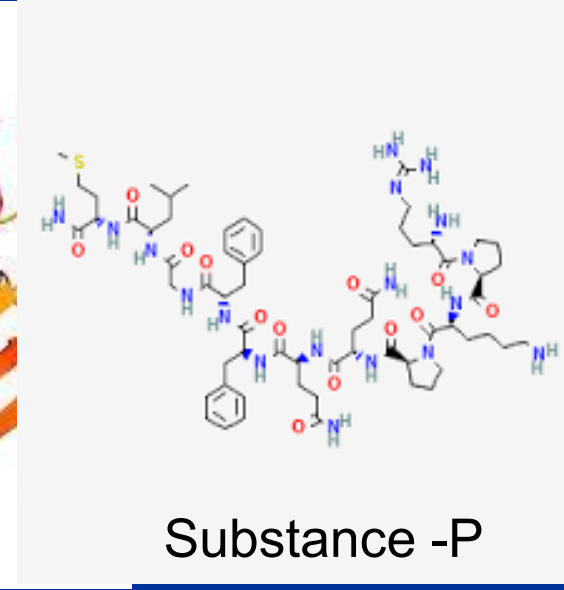
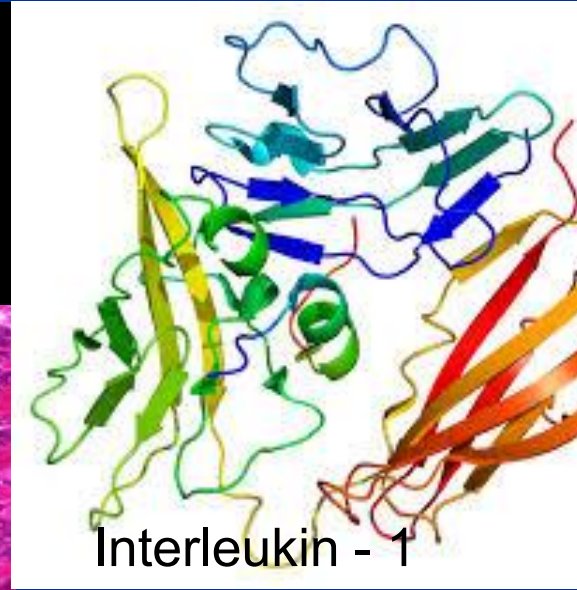
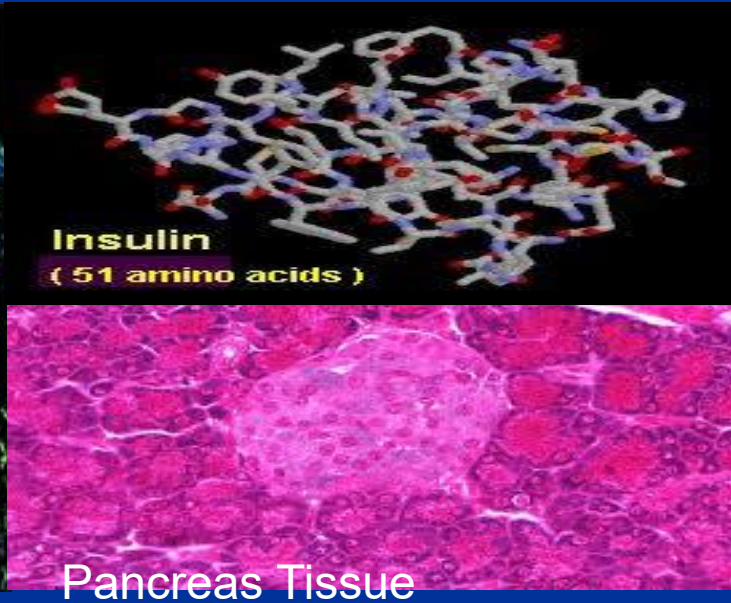
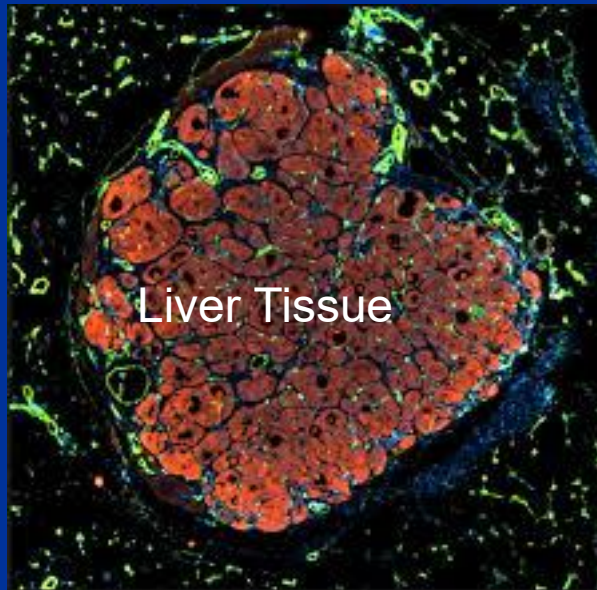


How does this happen?
With just frequencies and microcurrent?



Science Starts with Observation.
How does science explain the observed effects of FSM?

- Your body is a large Newtonian object made of Molecules • Atoms • Subatomic Quantum Particles
- Held together by electromagnetic bonds



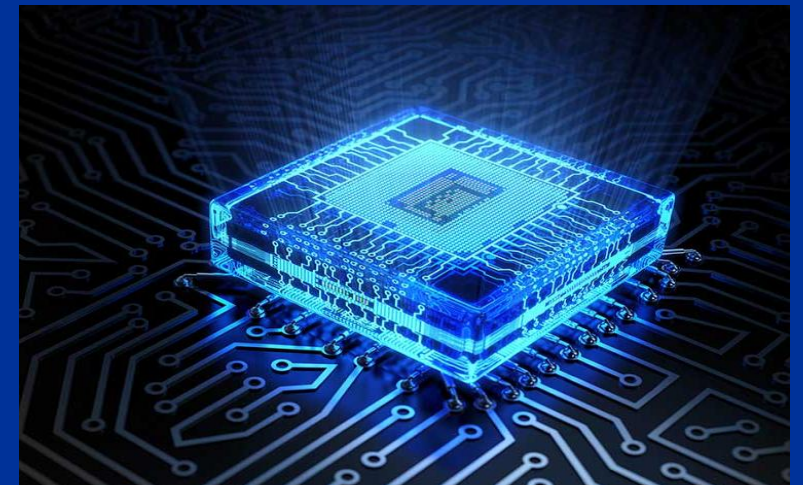
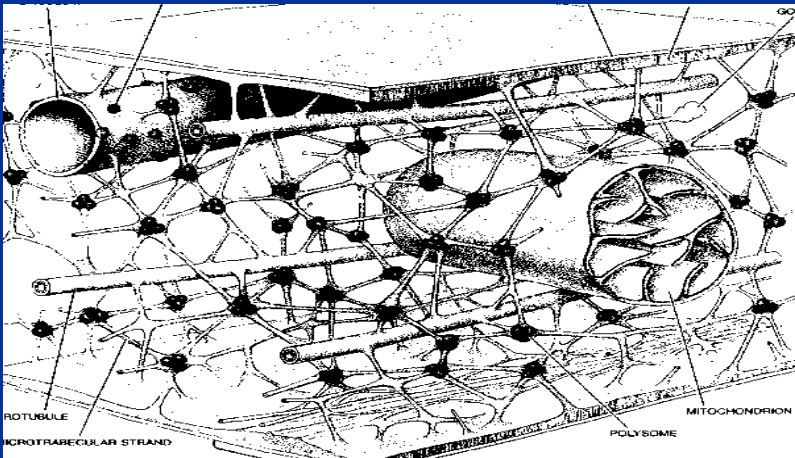
- Every electromagnetic bond has a Resonant Frequency

Your Body is a semiconductor

Water lines the gel inside cells and forms structures that act as a semiconductor St Gyorgi 1986

It conducts

Current
Charge
Information



Resonance is Powerful

Resonance is the tendency of a system or bond to oscillate at large amplitudes in response to some frequencies and not others

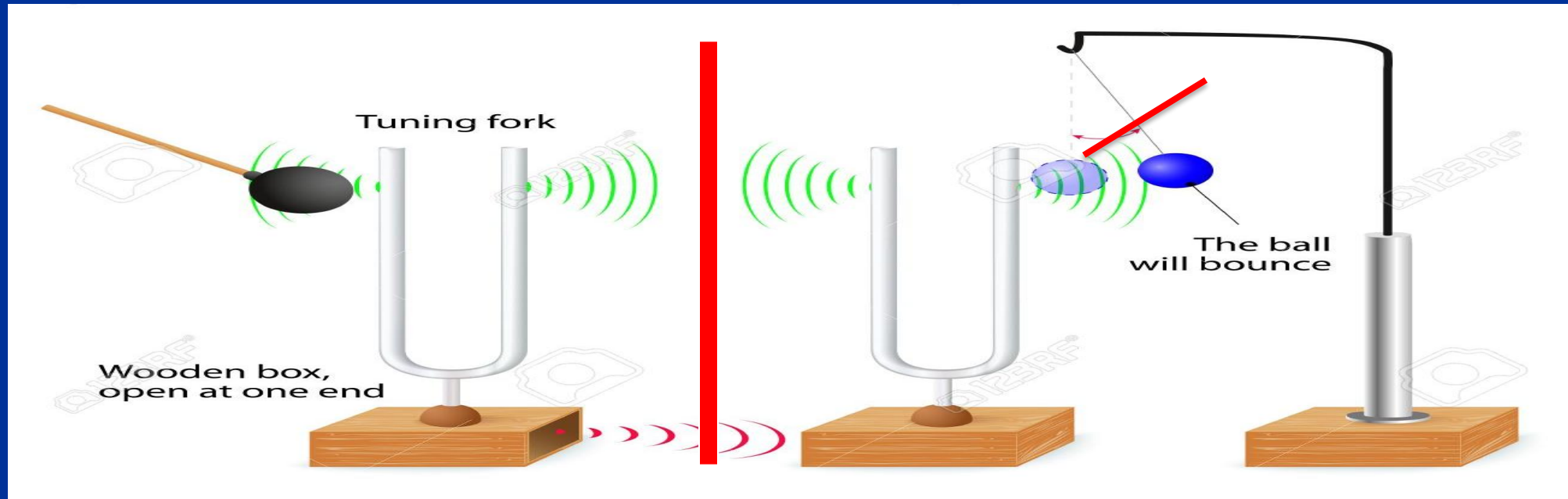
At the resonant frequency, very small forces can produce very large amplitude vibrations



Soldiers marching in step can collapse a bridge

Interference stops Resonance

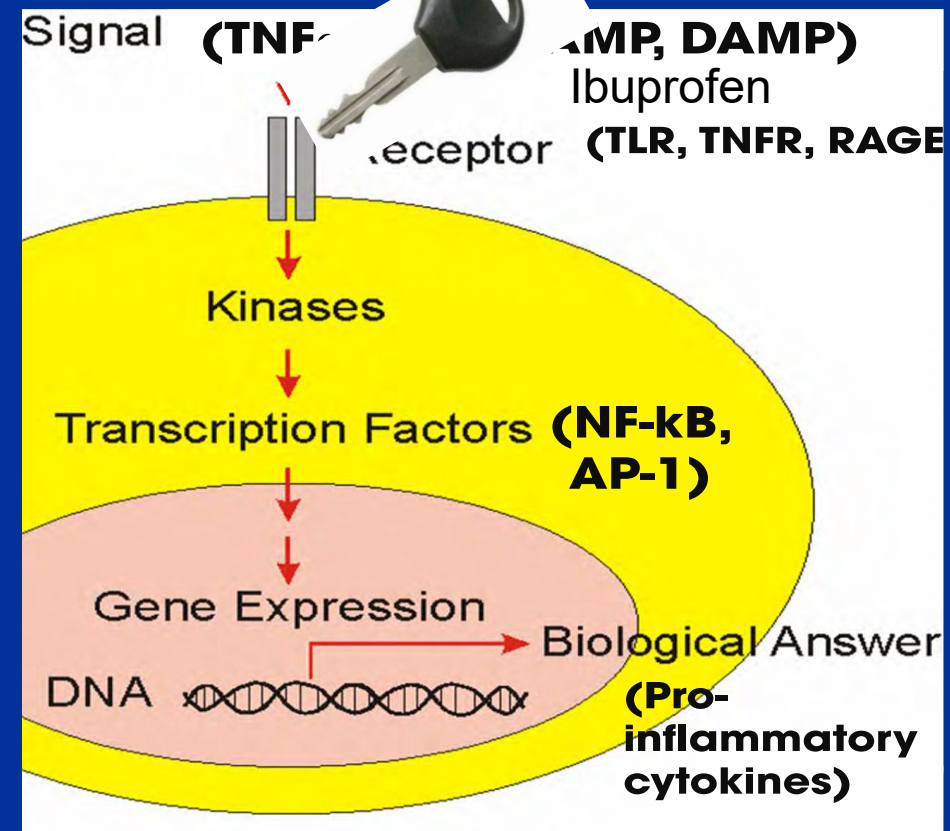
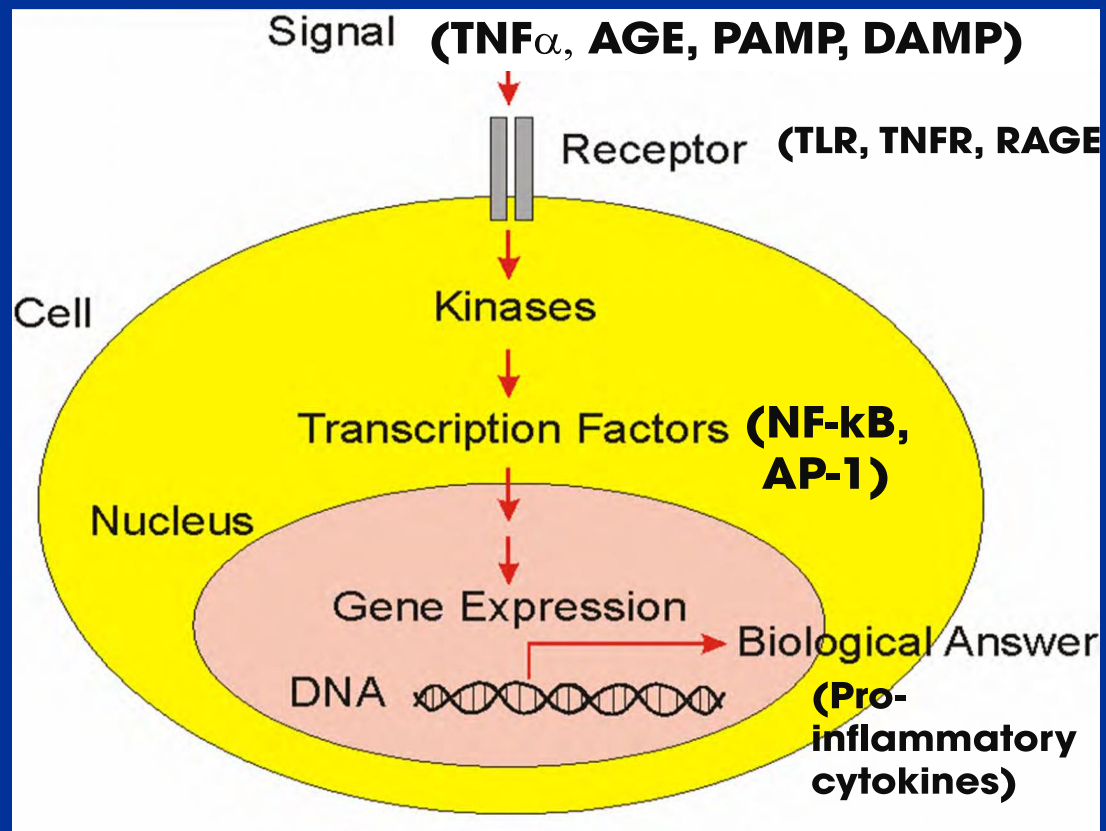
- Two tuning forks will resonate with each other across a room
 - Interference stops the frequency transfer.
- Remove the interference and resonance returns



BIOLOGIC RESONANCE

Explains the Effects on Living Tissue

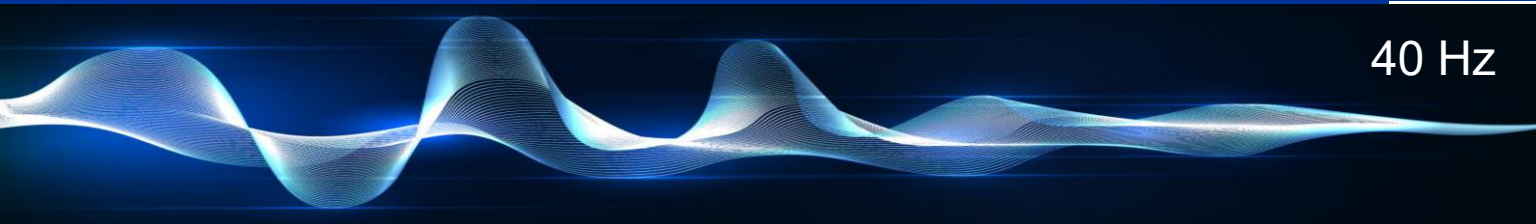
- Drugs or nutrients act like keys in a lock to change membrane receptors and change intracellular function



BIOLOGIC RESONANCE

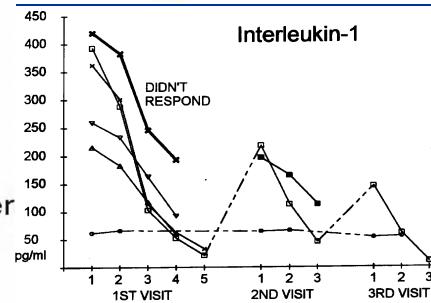
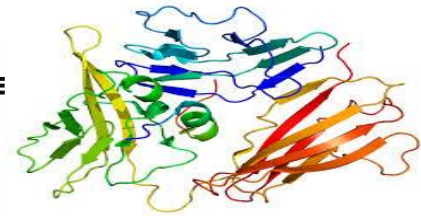
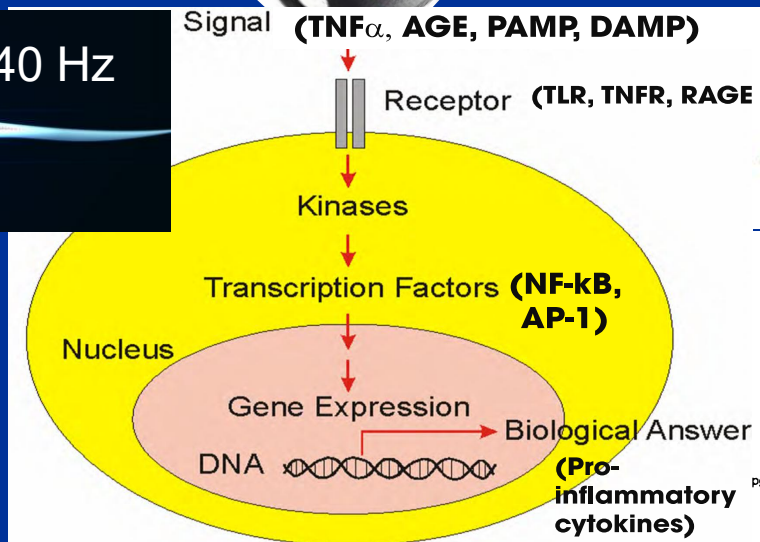
Frequencies act like the key remote opening a lock with an electromagnetic signal

- Frequencies appear to change membrane protein configuration and cell function electromagnetically with a specific frequency signal.



40 Hz

If you used a remote to open your car door, you used Frequency Specific Resonance



Think about FSM when you want to do

Something more

Something faster

Something better

Something that makes you think and ask why and how

Something that makes what you already do easier

Something that makes what you already do more effective

Something that is otherwise impossible

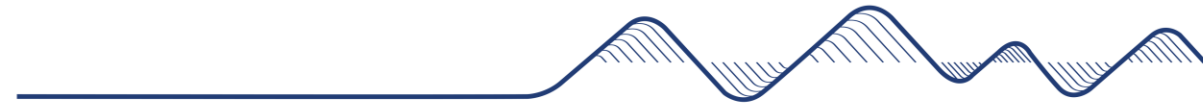
Something that makes practice fun again

5-Day FSM Seminar Changes Everything



- Core Seminar in person or on video
 - 5 days Lecture
 - 8 hours hands-on practicum or 4 hours private after video
- Individual attention, Immediate competence
- 3 month to forever learning curve
 - Advanced Courses, Webinars, Workshops
- Inexpensive US made equipment
 - FDA 510k, CE mark, ISO certified

Dr McMakin's **FSM**



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