



Functional Approaches to Chronic Pain Management

2018
CONNIE BASCH, MD

Relevant Financial Disclosure

Corinne Basch, MD

- ▶ I have nothing to disclose



Gratitudes

- ▶ Images in this presentation come from:
 - ▶ Many of my generous patients
 - ▶ Licensed images purchased from various sources or used from Creative Commons
 - ▶ Explain Pain, Second Edition, DS Butler and GL Moseley, Noigroup Publications 2013
 - ▶ The Explain Pain Handbook Protectometer, GL Moseley and DS Butler, Noigroup Publications 2015

Material from the latter two is reproduced with the permission of Noigroup Publications



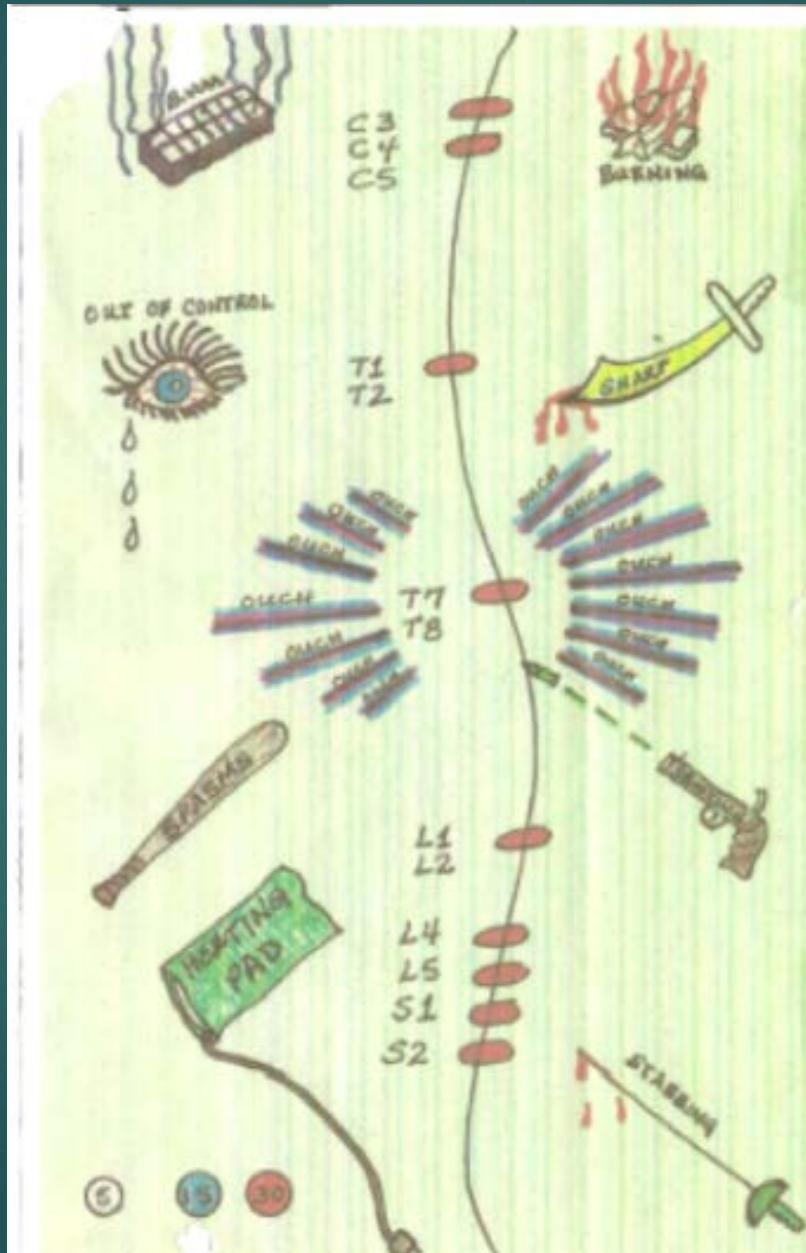
Chronic Pain Management

- ▶ You look at your schedule:
 - ▶ Mrs. C – 38 yo woman with fibromyalgia
 - ▶ Mr. B. – 54 yo M, chronic low back pain
 - ▶ Ms. G – 24 yo woman with IBS
 - ▶ Ms. T – 36 yo woman with headaches

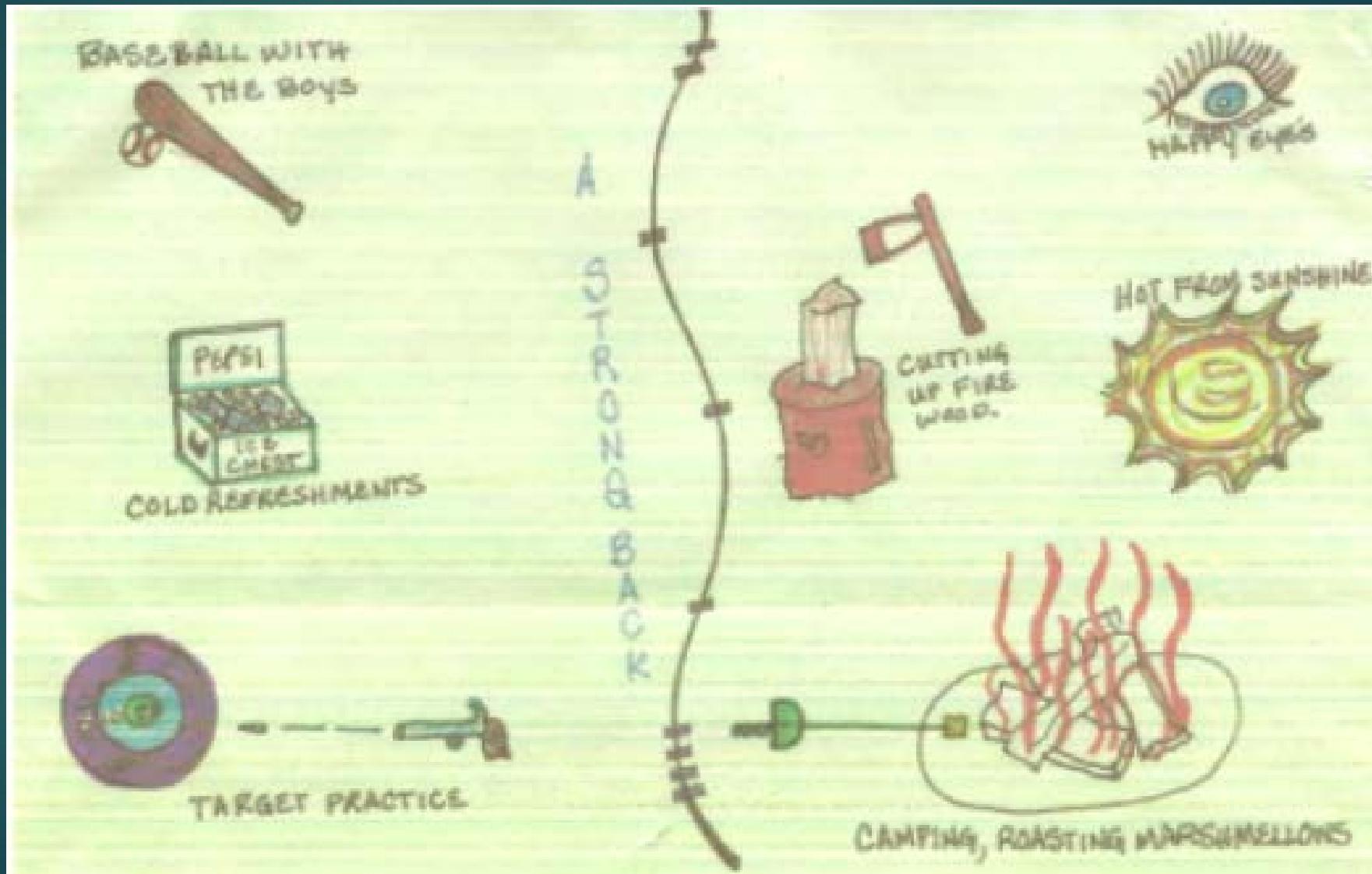
Your distress score on a scale of 1-10?



From Suffering. . .



... To Healing



The Problems with Current Pain Management

- ▶ Limited palate of Approaches
 - ▶ Non-opioid medications
 - ▶ Opioids
 - ▶ Injections
 - ▶ Physical Therapy
- ▶ Integrative Medicine adds some options, but often requires multiple visits, not covered by insurance, etc.

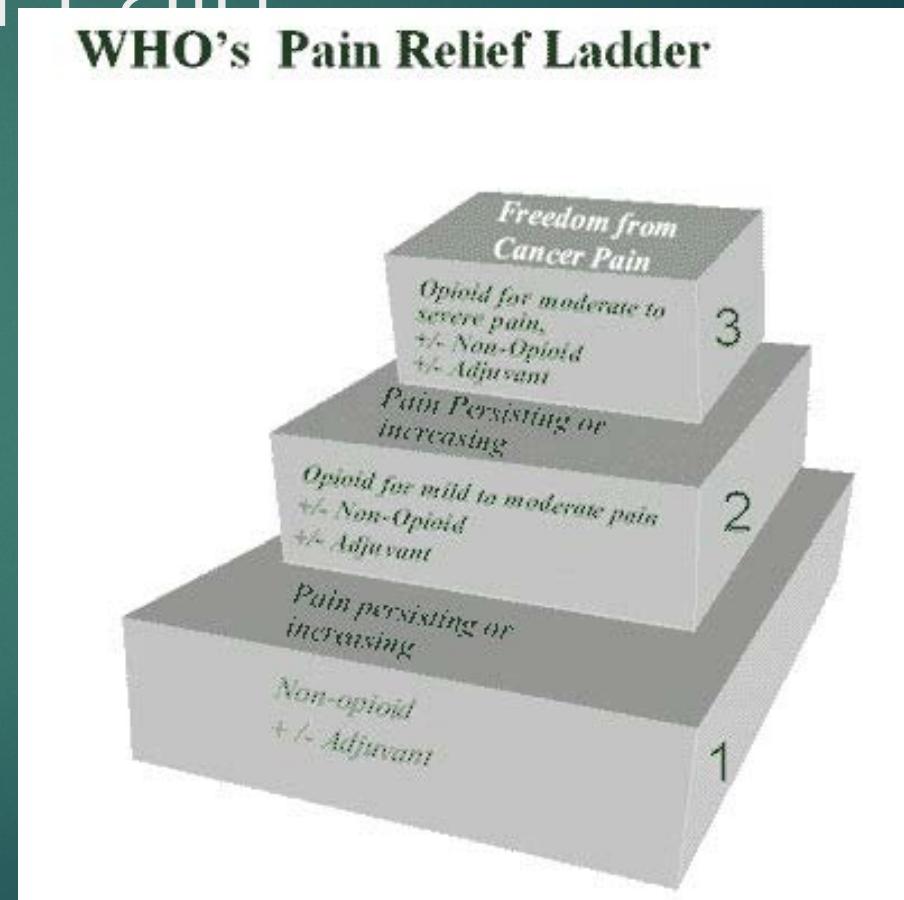


Symptom Management: Limitations of the current model for Medical Treatment of Pain

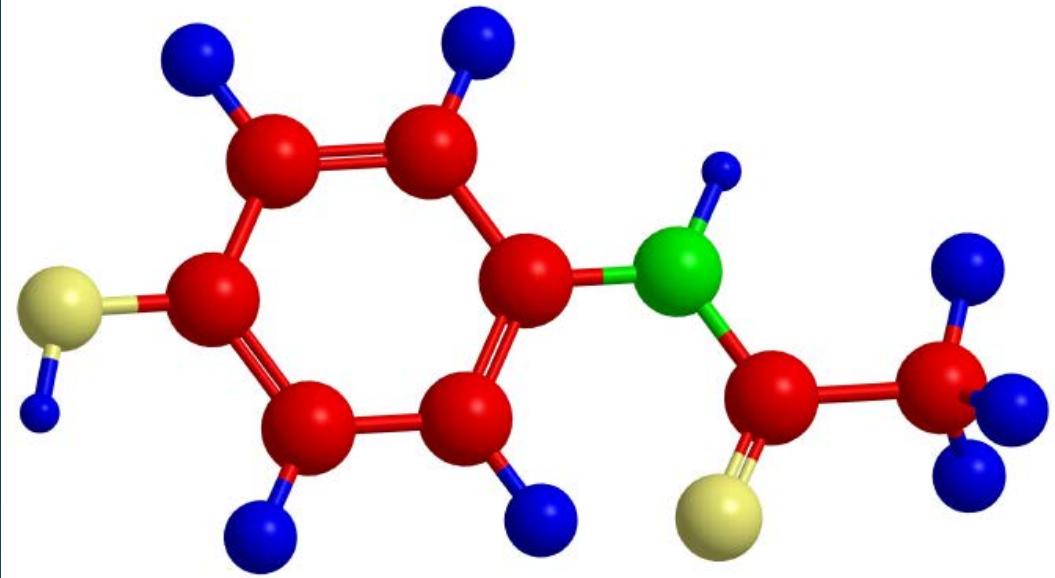
WHO's pain ladder

- developed for cancer pain, now applied for nonmalignant chronic pain as well

- o Step 1 Non-Opioid Analgesics
 - o Aspirin
 - o Tylenol
 - o Other NSAIDs



Acetaminophen toxicity



1,600 cases of acute liver failure in the United States per year between 2000 and 2004

86% from intentional or unintentional overdoses of APAP
Hepatology. 2005 Dec;42(6):1364-72

- ▶ Chronic tylenol ingestion of 4 g per day (8 of the old Vicodin, 12 norco) can produce liver damage
- ▶ Patients may combine with OTC products
- ▶ Lesser doses can be toxic when fasting/not eating well or when consumed in conjunction with alcohol



NSAID-related Toxicity

GI Bleeding

- ▶ 107,000 hospitalizations/yr for NSAID-related GI complications
- ▶ At least 16,500 NSAID-related deaths occur each year among patients

Am J Med. 1998 Jul 27; 105(1B): 31S-38S

- ▶ Overall mortality from GI bleeds 1 in 13
 - ▶ 1 in 5 in those using NSAIDs or aspirin

BMC Gastroenterology, 2009, Vol. 9, Special section p1-7

Cardiovascular

RR MI 1.30 (1.20-1.41) generally, 1.61 if known CV dz
possibly lower for naproxen

risk non-fatal MI inc more than fatal MI *PLoS One.* 2011
Feb 8;6(2):e16780



NSAIDs Impair Joint Repair

In vivo studies with NSAIDs at physiologic concentrations have shown that several NSAIDs reduce glycosaminoglycan synthesis.

- ▶ Salicylate
- ▶ Acetylsalicylic acid
- ▶ Fenoprofen
- ▶ Ioxicam
- ▶ Tolmetin
- ▶ Ibuprofen
- ▶ “...femoral head collapse and **acceleration of osteoarthritis have been well documented in association with the NSAIDs...**” *Lancet.* 1985 Jul 6; 2(8445): 11-4





The Problems with Current Pain Management

- ▶ Limited palate of Approaches
 - ▶ Non-opioid adjunctive medications – issues with cost, efficacy, sedation, etc.
 - ▶ Duloxetine – 50% side effects, 20% stop due to side effects [Front Neurol](#). 2017; 8: 307.
 - ▶ Gabapentin – 20% dizziness, 15% somnolence even <1800 mg per day [Am J Geriatr Pharmacother](#). 2004 Sep;2(3):157-62.
 - ▶ Others
 - ▶ Opioids
 - ▶ Injections
 - ▶ Physical Therapy
- ▶ Integrative Medicine adds some options, but often requires multiple visits, not covered by insurance, etc.

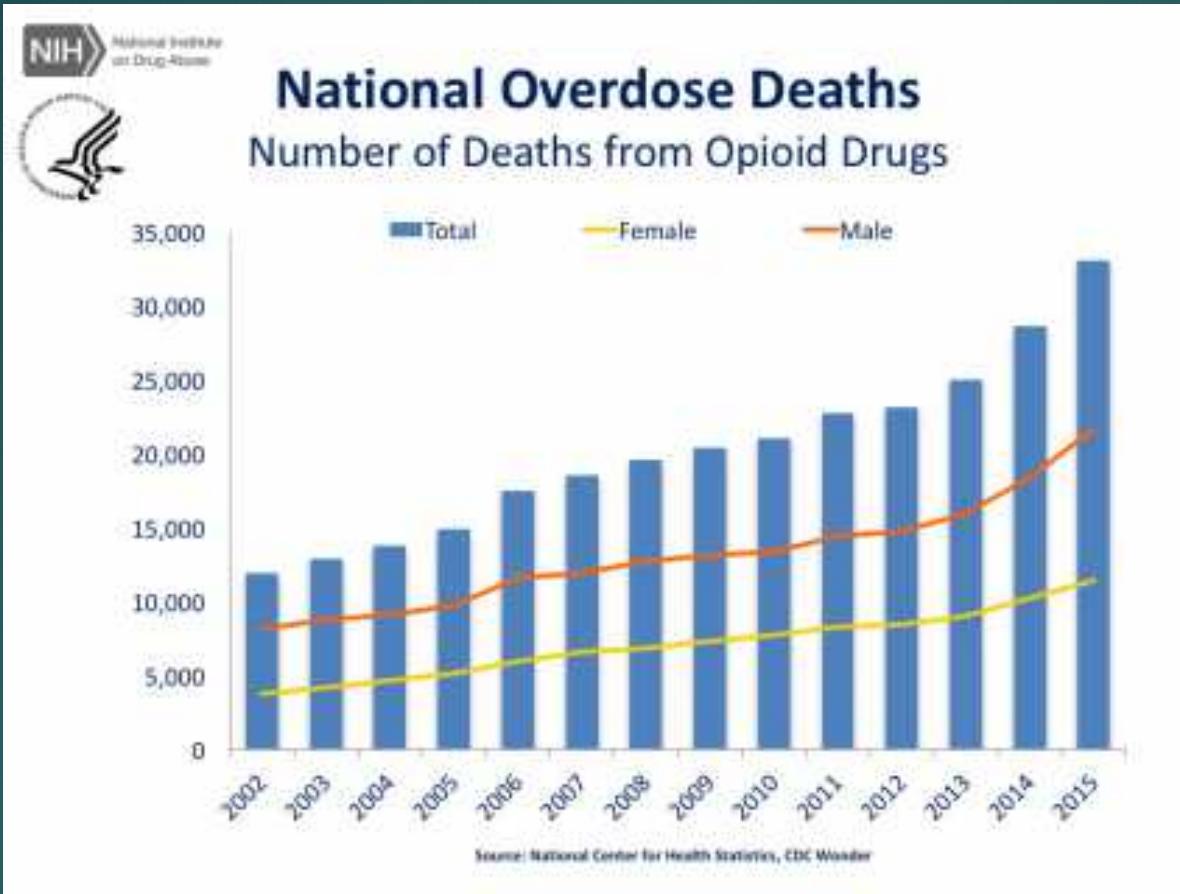


The Problems with Current Pain Management

- ▶ Limited palate of Approaches
 - ▶ Non-opioid medications
 - ▶ Opioids
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Opioid Overdose Deaths



Max prescribed daily opioid dose, mg/d	Death rate per 1000 Person-months		
	Patients with Chronic Noncancer Pain Diagnoses	Patients with Acute Pain Diagnoses	Patients with Substance Use Disorder Diagnoses
0	0.09	0.12	0.42
1- <20	0.11	0.21	0.54
21 - <50	0.24	0.36	0.78
50 - <100	0.66	1.13	1.59
≥ 100	1.24	1.82	2.97

JAMA. 2011 Apr 6;305(13):1315-21.



Pain Meds in the Elderly

	NSAIDs	Coxibs	Opioids
Cardiovascular risk	1	HR 1.28 (1.01-1.62)	1.77(1.39-2.53)
GI bleeding	1	0.6 (0.35 – 1)	1
Fracture risk	1	1	4.47 (3.12-6.41)
All-cause mortality	1	1	1.87 (1.39-2.53)

Arch Intern Med. 2010 Dec 13;170(22):1968-76



Other issues with Opioids

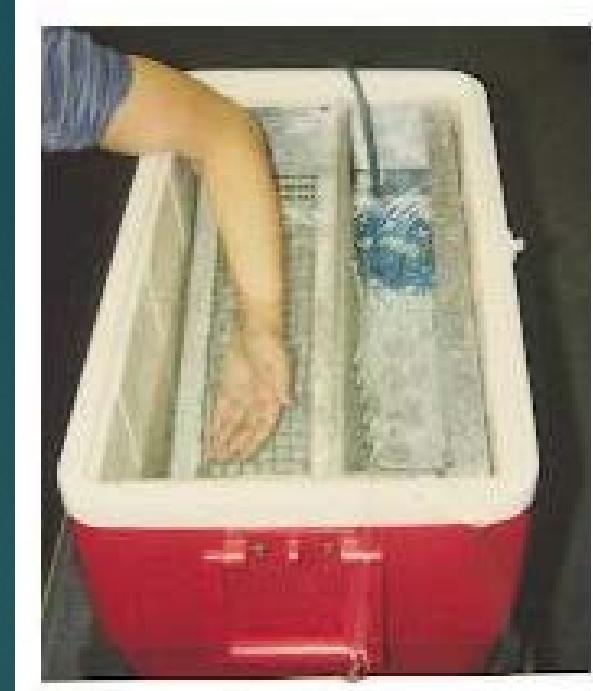
► Opioid-induced hyperalgesia

- Documented in animals and humans
- A number of case reports document decreases in pain with stopping opioids
- Mechanism may be NMDA receptor-mediated central sensitization

► Opioid-related Endocrinopathy

- Up to 90% of patients treated with opioids!
- More pronounced in doses > 100 mg morphine per day
- Opioids bind to receptors in hypothalamus
 - Decrease stimulation of the pituitary

The American Journal of Medicine Volume 126, Issue 3, Supplement 1, March 2013, P S12-S18



The Problems with Current Pain Management - an Aside on the Opioid Crisis

- ▶ Current changes in Opioid Prescription Guidelines
 - ▶ "Just say no"?

NATIONAL PAIN REPORT
What You Don't Know Can Hurt You

NP ABOUT US BLOG CONTACT ADVERTISE PRIVACY POLICY

STOP!

Opinion: Stop The War On Chronic Pain Patients

Posted on May 26, 2016 in [Opinion](#)

By Richard "Red" Lawhern, PhD

Much has been written lately about an "epidemic" of opioid overdose deaths, and a supposed need to restrict prescription opioid medications. Regrettably, many readers will not penetrate beneath the sensational headlines to grapple with the complicated realities of this issue. Few who aren't

4.68 ★★★★☆ 19 ratings

f p t e m p

War On Opioids Punishes Desperate Pain Patients

Opioids have become the newest enemy in the war on drugs. Doctors are becoming afraid to prescribe such meds. People in severe chronic pain are suffering.

A circular logo with a green gradient mortar and pestle in the center, set against a dark background. The logo is surrounded by a ring of hands, some blue and some white, all pointing towards the center.

- ▶ Survey of patients in first 100 days after rescheduling of hydrocodone
 - ▶ 39.0% no changes in access to hydrocodone
 - ▶ 61% experienced some barriers
 - ▶ 64.2% had to visit their healthcare providers more often
 - ▶ 30.3% reported some type of issue interacting with their pharmacy
- ▶ Of those who could no longer get hydrocodone
 - ▶ 18.1% borrowed pain medications
 - ▶ 17.1% turned to marijuana
 - ▶ 13.1% used alcohol
 - ▶ 2.3% used illicit drugs.
- ▶ 88.3% felt that the rescheduling was neither a fair nor appropriate solution to the abuse of hydrocodone
- ▶ For those still working, 46.2% reported that they had missed work because of the stricter regulations.
- ▶ 27.2% reported having thoughts of suicide since the rescheduling

Pain Med (2016) 17 (9): 1686-1693





4162

Views

5

CrossRef citations

218

Altmetric

Commentary

Turning the tide or riptide? The changing opioid epidemic

Stefan G. Kertesz , MD, MSc

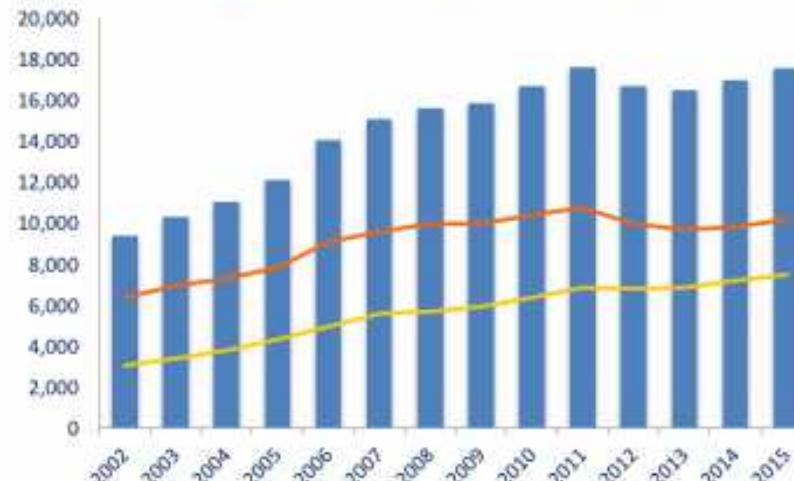
Pages 3-8 | Accepted author version posted online: 18 Nov 2016, Published online: 18 Nov 2016



National Overdose Deaths

Number of Deaths from Prescription Opioid Pain Relievers (excluding non-methadone synthetics)

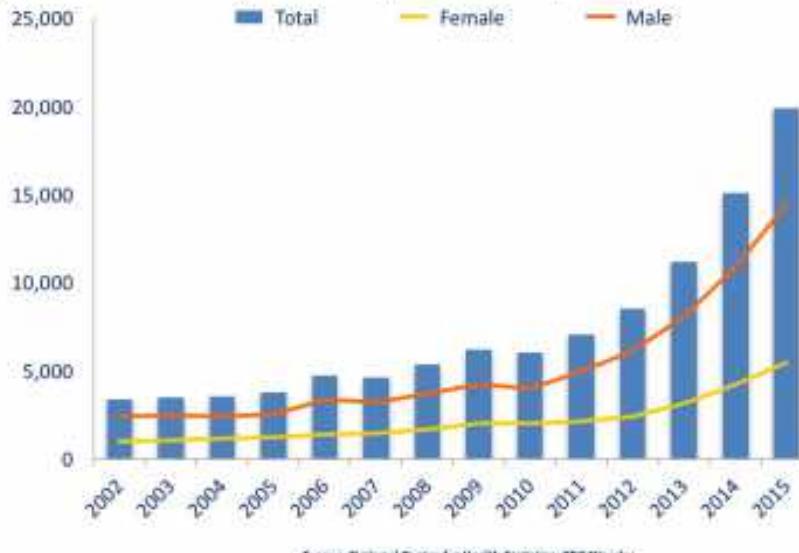
Total Female Male

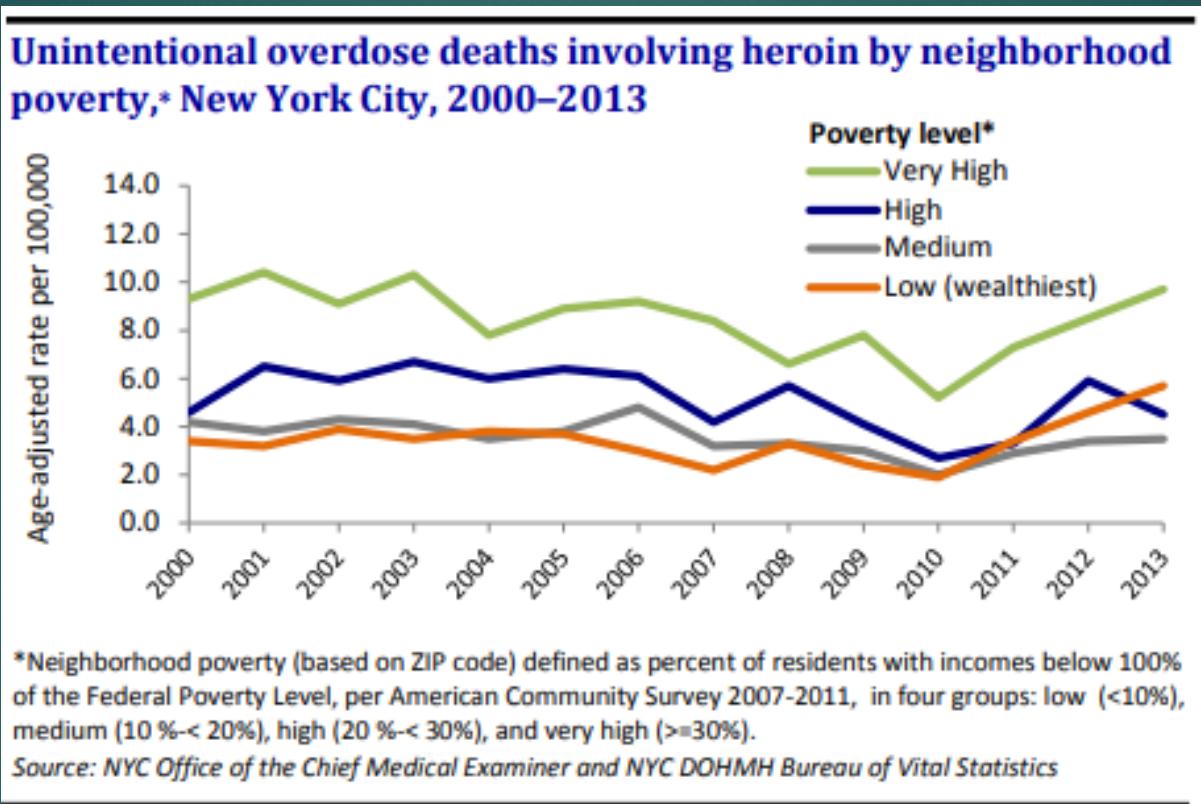


National Overdose Deaths

Number of Deaths from Heroin and Non-Methadone Synthetics (captures illicit opioids)

Total Female Male





- ▶ New York State's Department of Health found that 79.5% of heroin users had used opioid analgesics before beginning heroin, compared to only 1% of users who initiated heroin before using opioid analgesics (<https://www1.nyc.gov/assets/doh/downloads/pdf/epi/databrief50.pdf>)





Shifting the Blame –

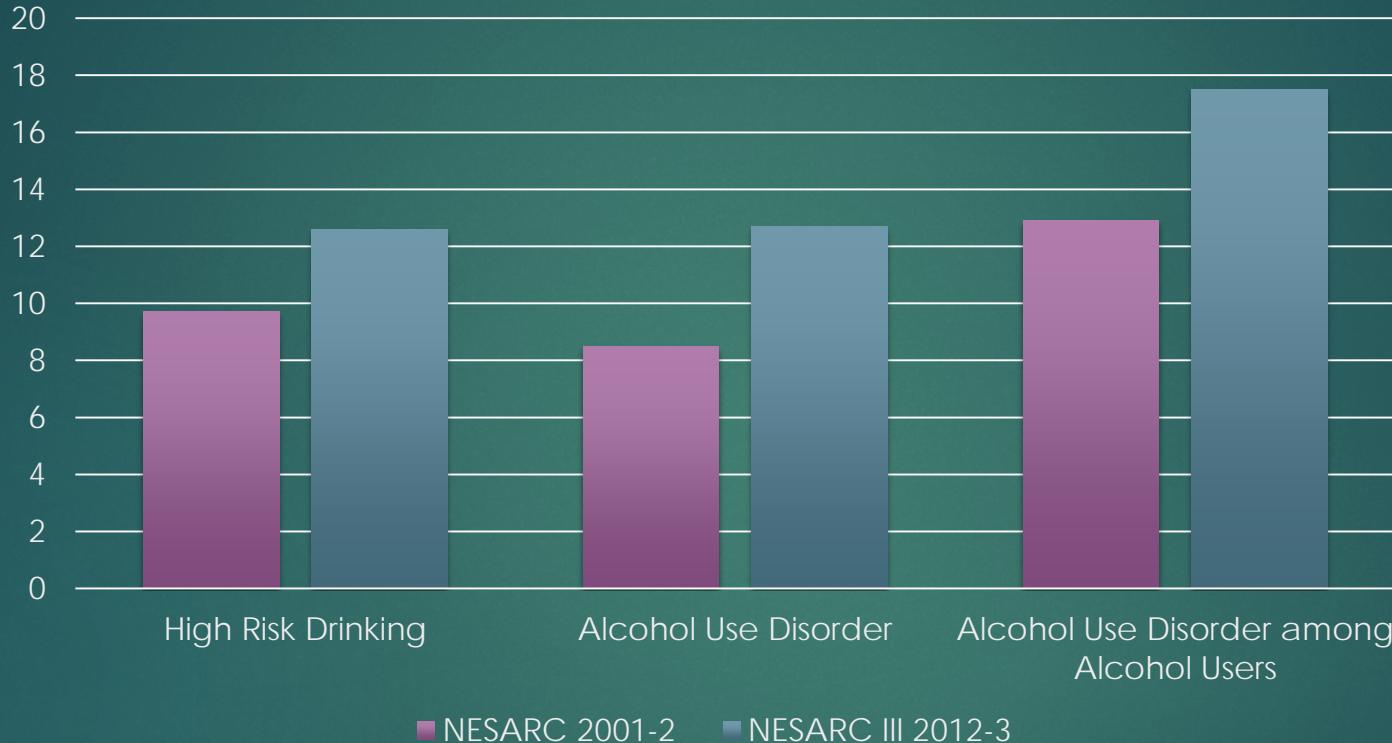
Beyond the scope of this talk, but an important equity issue. . .

- ▶ White opioids: Pharmaceutical race and the war on drugs that wasn't Biosocieties. 2017 Jun; 12(2): 217–238.
- ▶ “..pharmaceutical development and dissemination increasingly stand in as primary public health interventions for conditions that are rooted in economic inequalities, political disempowerment, and social exclusions, including HIV infection, psychiatric diagnoses, and narcotic addiction.”
- ▶ “*An increase in prescriber monitoring has shifted the focus from addicted people to prescribers as a threat, paradoxically driving users to illicit markets and constricting their access to pharmaceutical treatment for opioid addiction. Prescriber monitoring is also altering clinical cultures of care, as general physicians respond to heightened surveillance and the psychosocial complexities of treating addiction with either rejection of opioid dependent patients, or with resourceful attempts to create support systems for their treatment where none exists.*”
- ▶ [Transcult Psychiatry. 2016 Aug; 53\(4\): 465–487.](#)



Alcohol Abuse is also increasing

Alcohol Use Disorder Trends



- ▶ JAMA Psychiatry. 2017;74(9):911-923
- ▶ Between 2006 and 2014, the number of ED visits involving alcohol consumption increased 61.6%, from 3,080,214 to 4,976,136. *Alcoholism Clinical & Experimental Research* January 2018 <https://onlinelibrary.wiley.com/doi/pdf/10.1111/acer.13559>

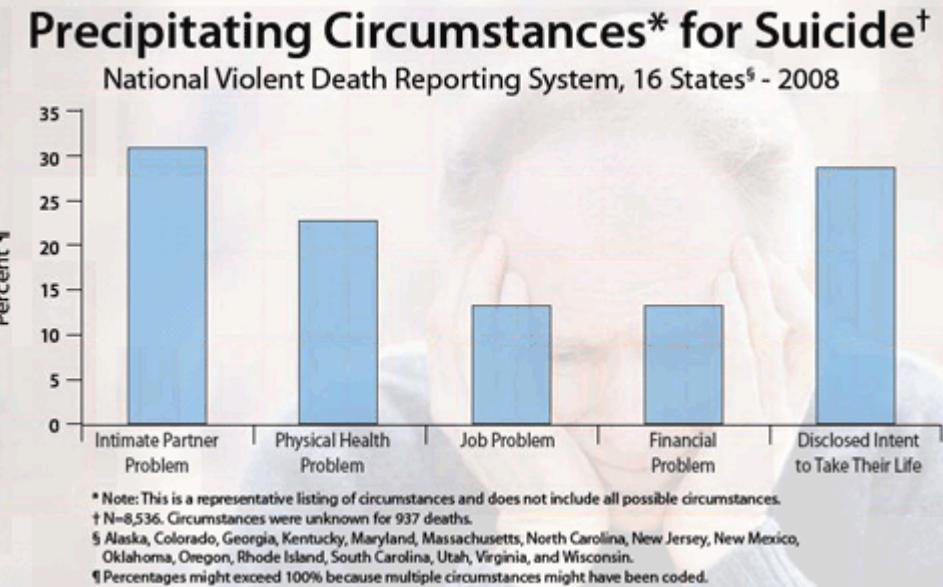




Suicide and Chronic Pain

- ▶ Survey:
 - ▶ 50% of CNP patients had inadequate pain relief
 - ▶ 50% “considered suicide due to feelings of hopelessness associated with their pain”

J Pain Symptom Manage. 1994 Jul;9(5):312-8



- ▶ Severe pain increases risk of suicide in vets Suicide Life Threat Behav. 2010 Dec;40(6):597-608, Journal of Pain April 2017 Volume 18, Issue 4, Supplement, Page S62

- ▶ Individuals with physical pain were more likely to report:
 - ▶ Lifetime death wish ($p = 0.0005$)
 - ▶ Current and lifetime
 - ▶ Suicidal Ideation (both $p < 0.00001$)
 - ▶ Suicide Plan (current: $p = 0.0008$; lifetime: $p < 0.00001$)
 - ▶ Suicide Attempt (current: $p < 0.0001$; lifetime: $p < 0.00001$)
 - ▶ Suicide Deaths ($p = 0.02$).

Journal of Psychiatric Research December 2015 Volume 71, Pages 16–32 The impact of physical pain on suicidal thoughts and behaviors: Meta-analyses Rafaella Calati et al



**END
DETOUR**



The Problems with Current Pain Management

- ▶ Limited palate of Approaches
 - ▶ Opioids
 - ▶ Non-opioid medications
 - ▶ Injections
 - ▶ Physical Therapy
- ▶ Green Medicine - adds some options, but often requires multiple visits, not covered by insurance, etc.
 - ▶ Acupuncture
 - ▶ Chiropractic
 - ▶ Energy work
 - ▶ Etc.

Sometimes these produce durable results in acute pain, but often there are ongoing needs in chronic pain patients, without resources to provide for them.



Injections

- ▶ Systematic Review:
 - ▶ Epidural steroid injection
 - ▶ Moderately effective for short-term
 - ▶ No effect for long-term symptom relief

PM R. 2009 Jul;1(7):657-68

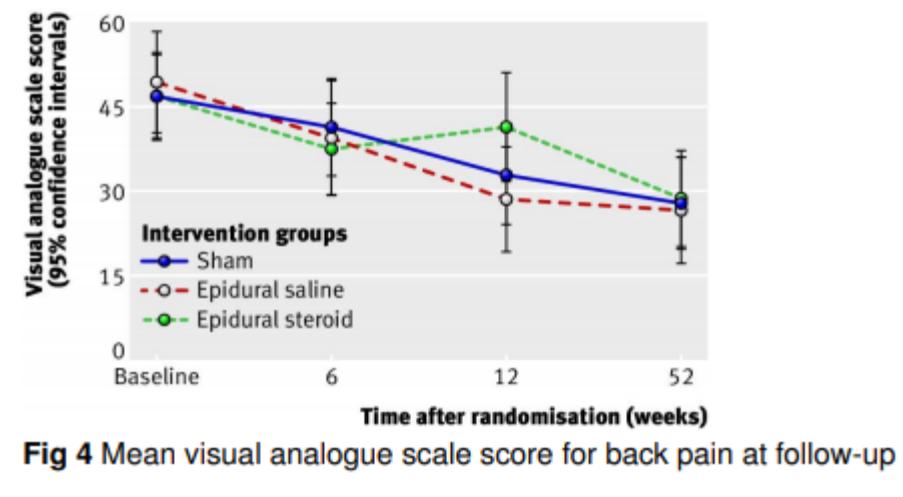


Fig 4 Mean visual analogue scale score for back pain at follow-up

▶ BMJ 2011;343:d5278

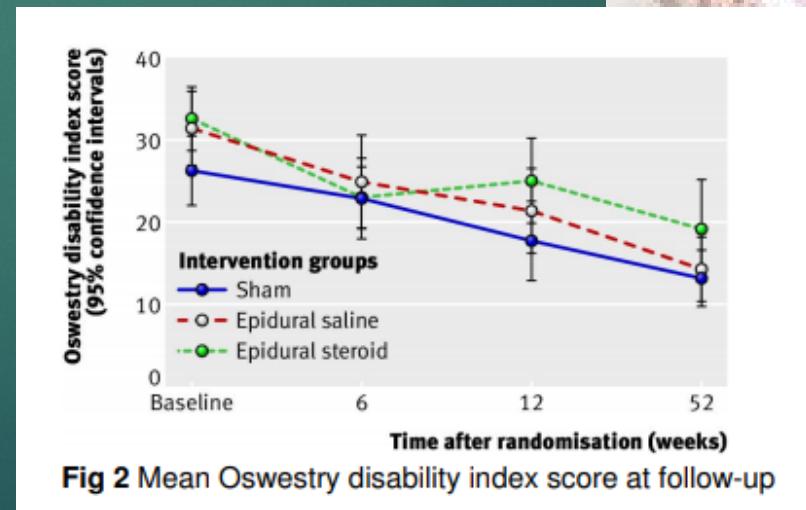
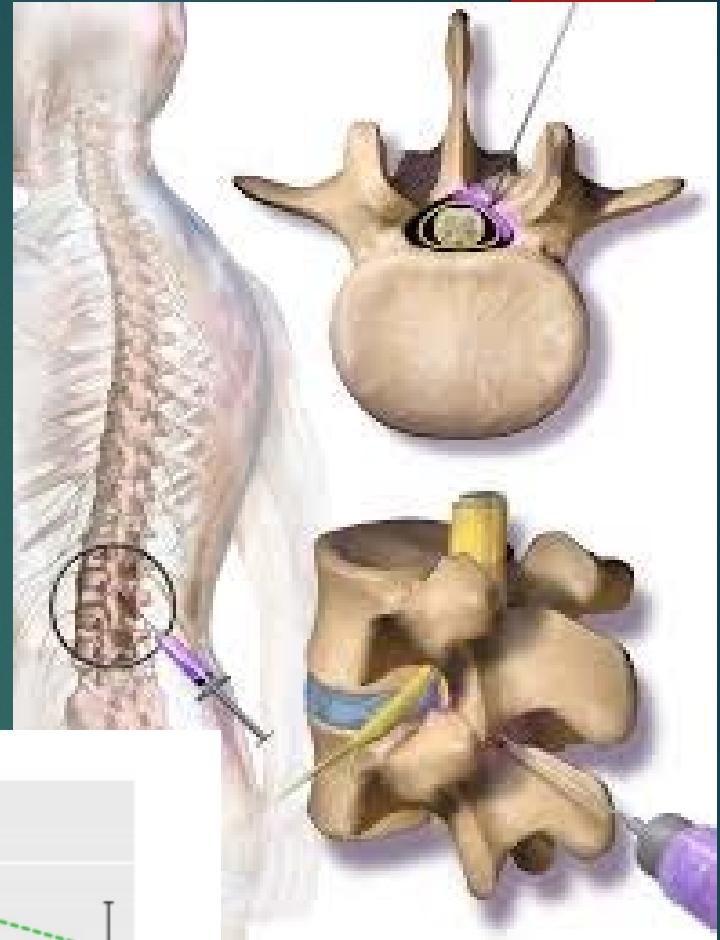


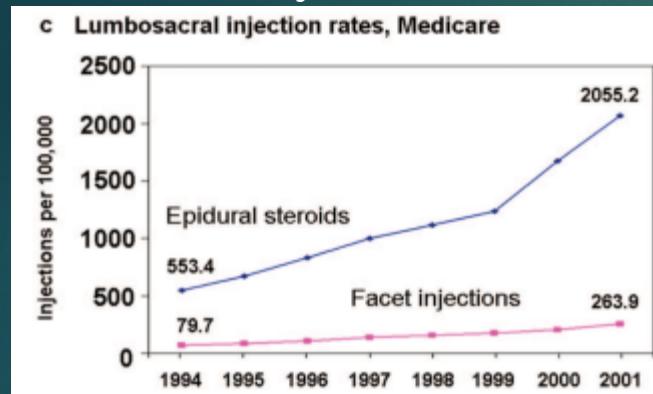
Fig 2 Mean Oswestry disability index score at follow-up





Another Detour: Money and Pain Management

629 percent increase in Medicare expenditures for epidural steroid injections over the last decade. J Am Board Fam Med 2009;22:62– 68.



Many patients are referred for noninterventional pain care after all the procedures (covered by insurance) have been carried out, and patients are then told they are being referred for “chronic pain management.”

Pain Practice, Volume 12, Issue 4, 2012 326–330



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Sometimes these produce durable results in acute pain, but often there are ongoing needs in chronic pain patients, without resources to provide for them.





What does Functional Medicine Add to Pain Management?

- ▶ A conceptual framework to think about chronic and complex illness and to address it
- ▶ Focus on underlying causes
 - ▶ The wisdom of the 2 year old – “Why?”
- ▶ Focus on patient education and empowerment
 - ▶ Provider as partner or guide on healing path







► Are you a mopper or a turner-offer?





What does Functional Medicine Add to Pain Management?

- ▶ A conceptual framework to think about chronic and complex illness and to address it
- ▶ Focus on underlying causes
 - ▶ The wisdom of the 2 year old – “Why?”
- ▶ Taxonomy ≠ Etiology



MRI and Back Pain

Magnetic Resonance Imaging of the Lumbar Spine in People without Back Pain

- ▶ MRI examinations on 98 **asymptomatic** people
 - ▶ Only 36% had a normal MRI
 - ▶ 52% - bulge at at least one level
 - ▶ 27% - protrusion
 - ▶ 1% - extrusion.
 - ▶ 38% - abnormality of more than one intervertebral disk.
 - ▶ “Given the high prevalence of these findings and of back pain, the discovery by MRI of bulges or protrusions in people with low back pain may frequently be coincidental”
- ▶ *Maureen C. Jensen, et al. NEJM Volume 331:69-73, 1994*



Name it, Blame it, Tame it

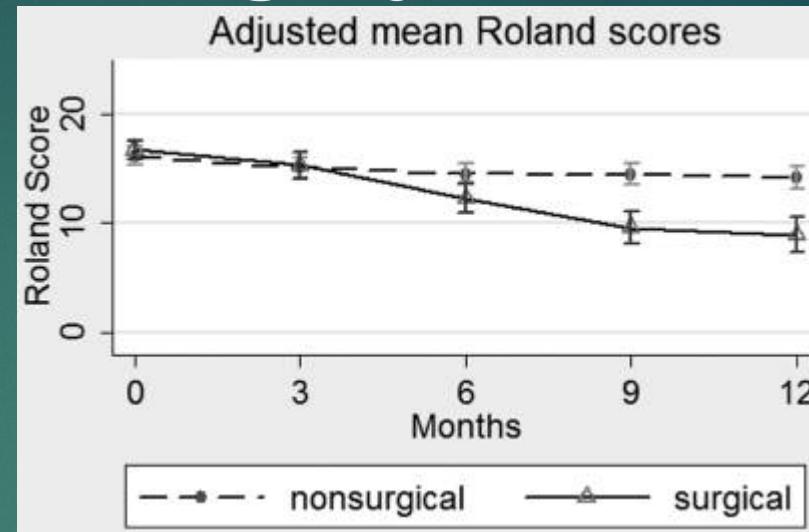
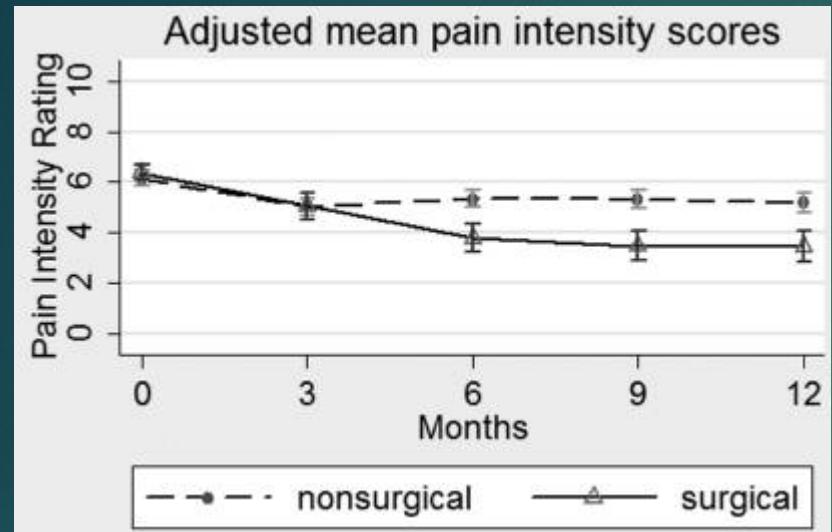
ICD-10

- ▶ Name: Lumbar Disc Disease
- ▶ Tame: Treat with surgery, injections, etc
- ▶ And the result?





Back Pain treatment - Surgery or Non-surgical



Spine J. 2013 Nov; 13(11): 1421–1433.

	Failed Back Surgery Group	Non-specific chronic back pain Group
VAS at rest	3.8 ± 1.5	$3.2 \pm 1.2^*$
VAS in motion	5.6 ± 1.6	5.4 ± 1.1
VAS at night	3.5 ± 2.1	$2.1 \pm 1.4^*$
Beck Depression Inventory	16.5 ± 5.5	$13.2 \pm 5.5^*$
J Phys Ther Sci. 2017 May; 29(5): 891–895.		* p<0.05



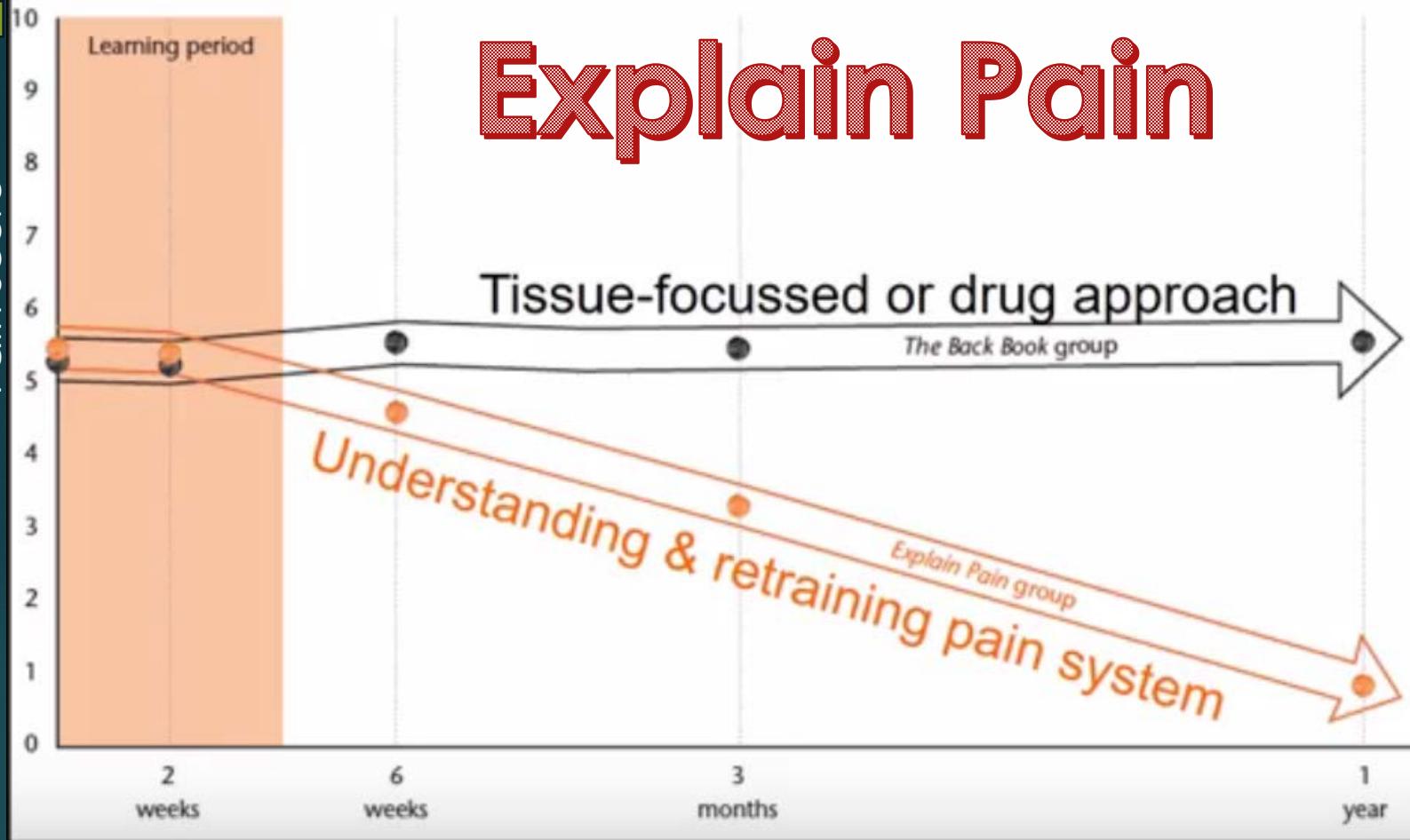
Why such poor results? Human beings—and their diseases—are complex

- ▶ Many conditions may emerge from a single cause (e.g., the many varied signs and symptoms of gluten intolerance).
- ▶ Individuals have their own pathways toward a diagnosis—one person's asthma or diabetes or heart disease is not the same as another's. Fibromyalgia is a prime example.
- ▶ Outcomes are not predictable; what works for one person will not necessarily be effective with the next.
- ▶ Everything is connected to, and can be influenced by, everything else—body, mind, and spirit. The latter two are much more important in chronic pain than has previously been appreciated
 - ▶ Engaging patients in addressing this without having them feel minimized or accused is an art, and takes time



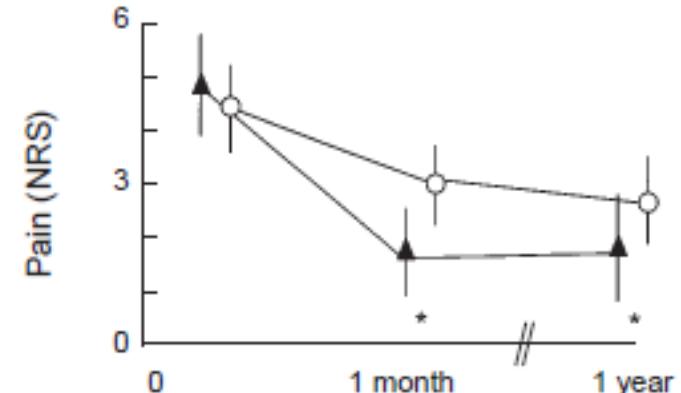


Pain Score

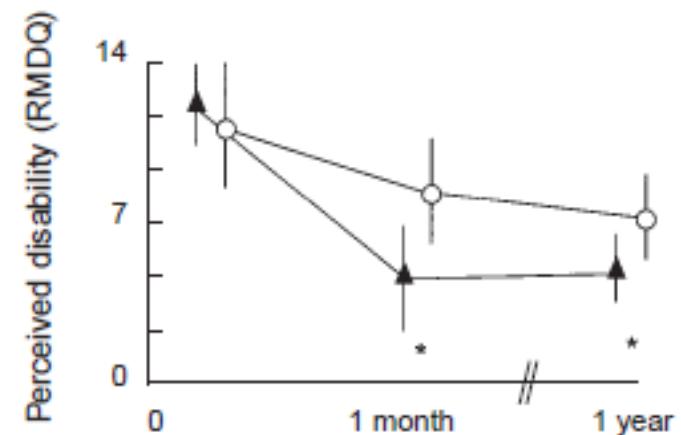


- Top image is a screen grab from a talk on the web from Lorimer Moseley
- His study to the right compared PT and education to Usual treatment *Australian Journal of Physiotherapy* 48: 297-302 2002

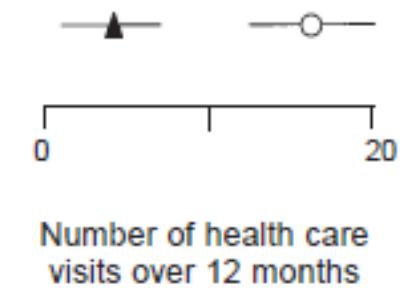
A.



B.

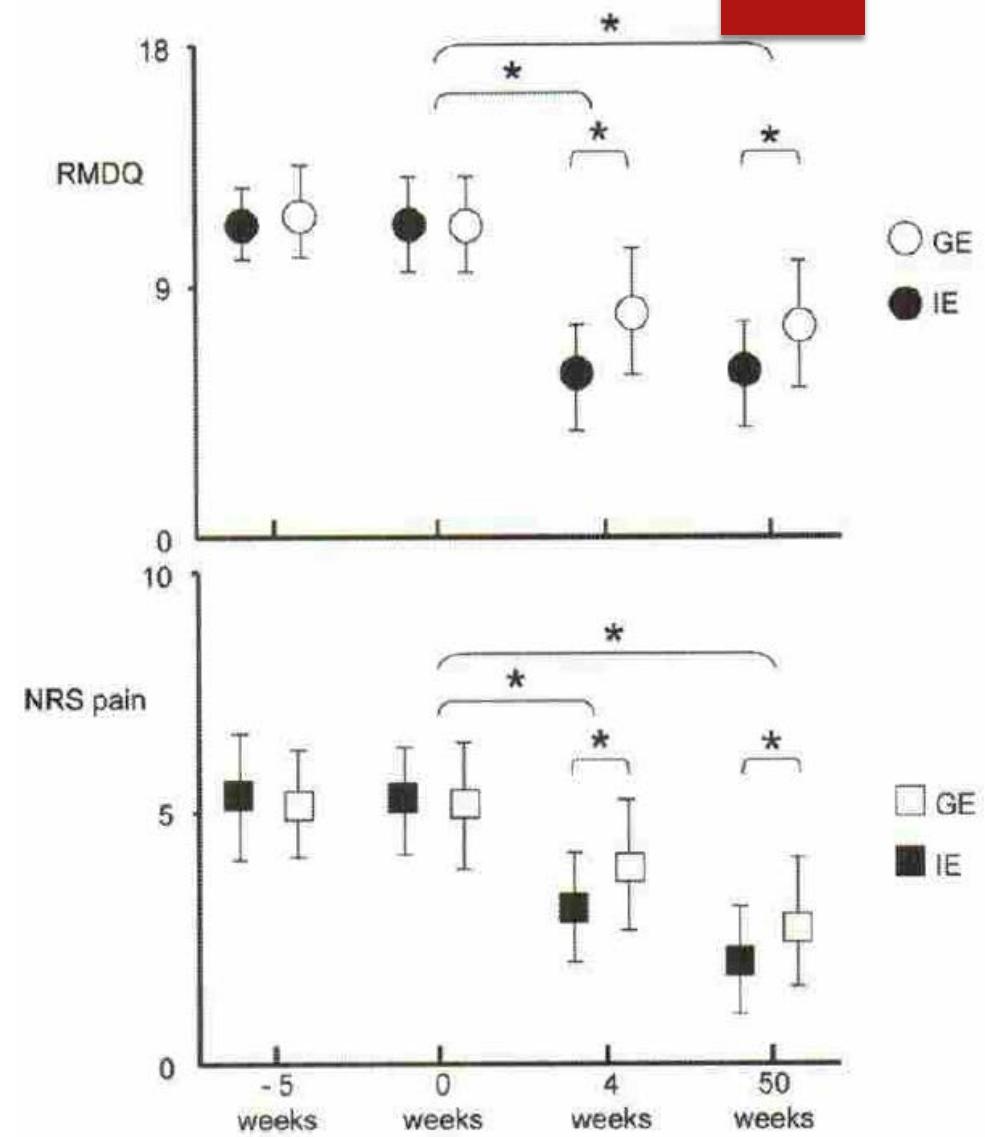


C.

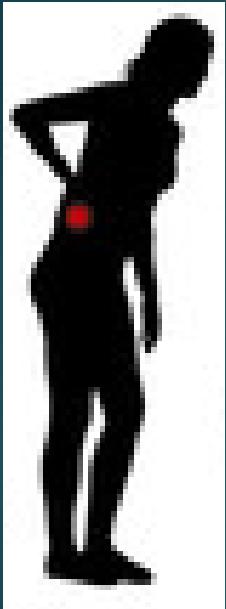


Individual and Group Education

- ▶ 4 1-hour individual sessions
- vs
- ▶ One 4-hour group session
- ▶ The Journal of Manual & Manipulative Therapy
11(2)(2003), 88-94



Predictors of Low Back Pain in People with Asymptomatic Abnormal MRI's



Forty-six asymptomatic individuals who had a high rate of disc herniations (73%) were observed for an average of 5 years

Low back pain was predicted by ($P < 0.001$):

listlessness

job satisfaction

working in shifts

NOT by abnormal discs

► Boos et al. Spine. 25(12):1484-1492, June 15, 2000.



Principles of Functional Medicine

Change the metaphor from:

- Name-it, Tame-it, and Blame-it
- Doctor-Knows-Best

to

Participatory
common
sense



Pain **may** be mandatory, but suffering is optional

- ▶ Functional Approach to Chronic Pain
 - ▶ Addressing the sources of pain
 - ▶ Addressing the perception of pain
 - ▶ Addressing the suffering associated with pain

The definition of Healing may be different for different people, but there are opportunities for intervention at each of these levels



As I present it to Patients:

- ▶ Heal the Body – more on this topic in a few minutes
- ▶ Heal the Brain – I now think we need to introduce this early
- ▶ Heal the Person



Understanding Pain





Explaining This to Patients. . .

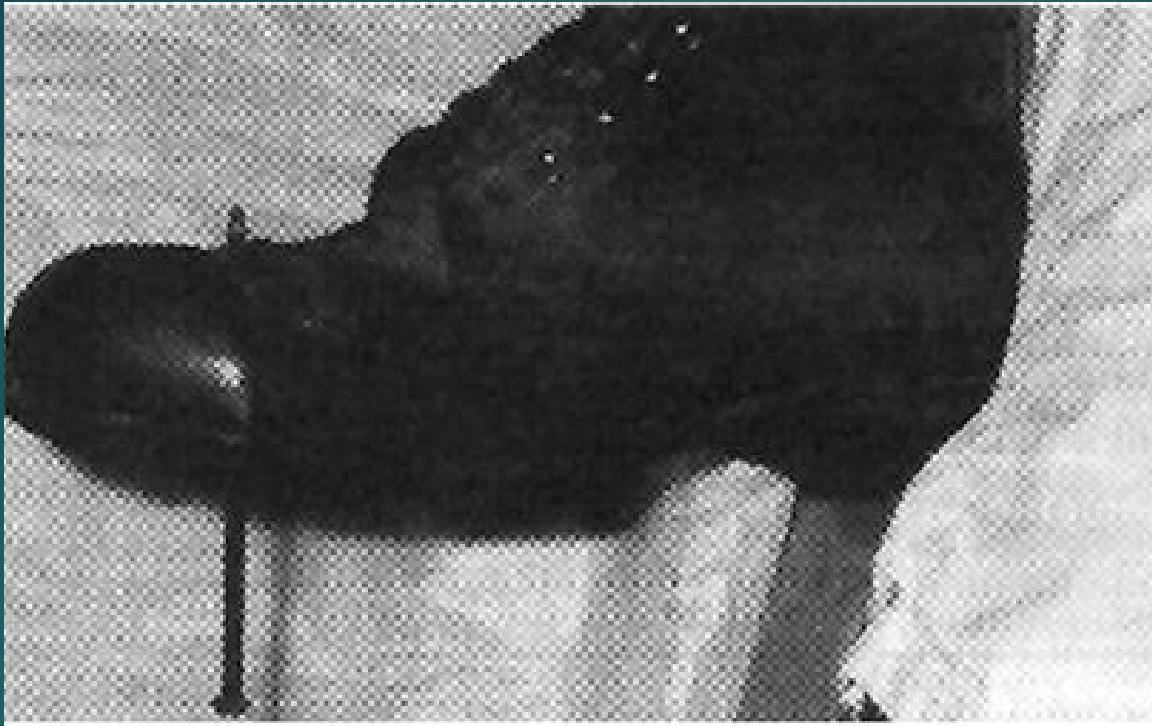
- ▶ Understanding Pain
 - ▶ The Rules of Pain
 - ▶ Useful metaphors. . .



The Rules of Pain

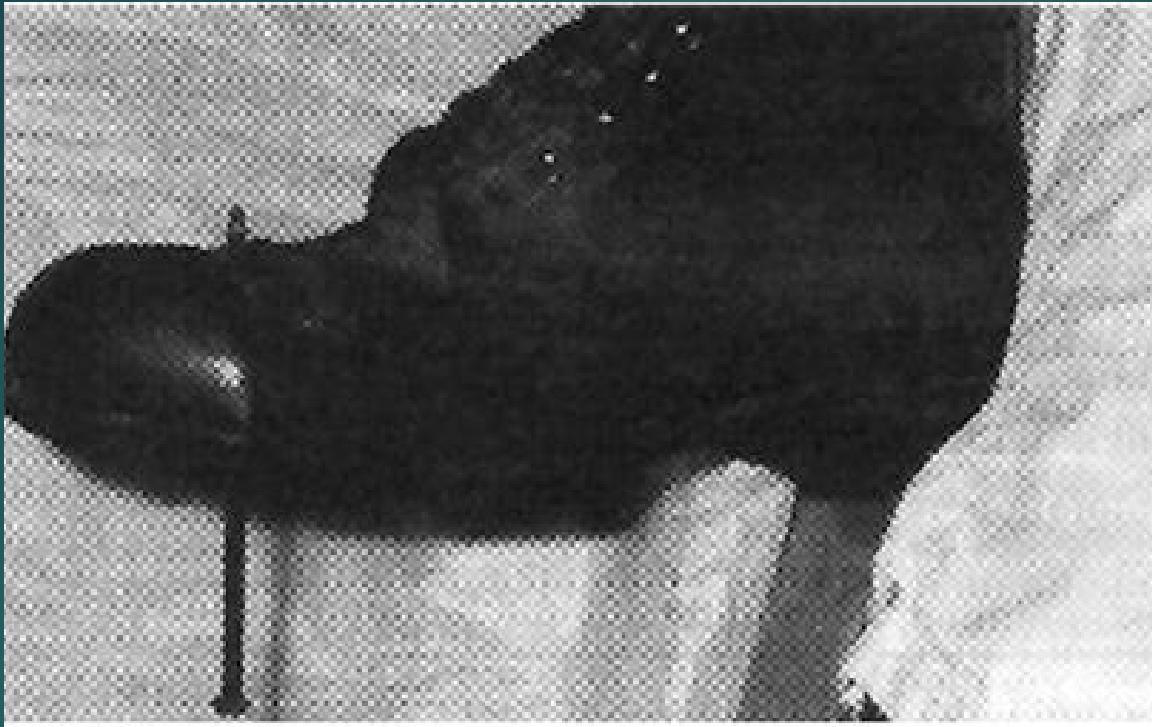
- ▶ 1. All pain is real





- ▶ Builder jumped on a 7-inch nail
- ▶ Required intravenous sedation in the ER





- ▶ Builder jumped on a 7-inch nail
- ▶ Required intravenous sedation in the ER
- ▶ When boot was cut away, the nail had passed **BETWEEN** the toes

Fisher et al, British Medical Journal 1995



- ▶ Construction worker was working with a nail gun
- ▶ 6 days later he had a toothache and went to the dentist



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- ▶ 6 days later he had a toothache and went to a dentist



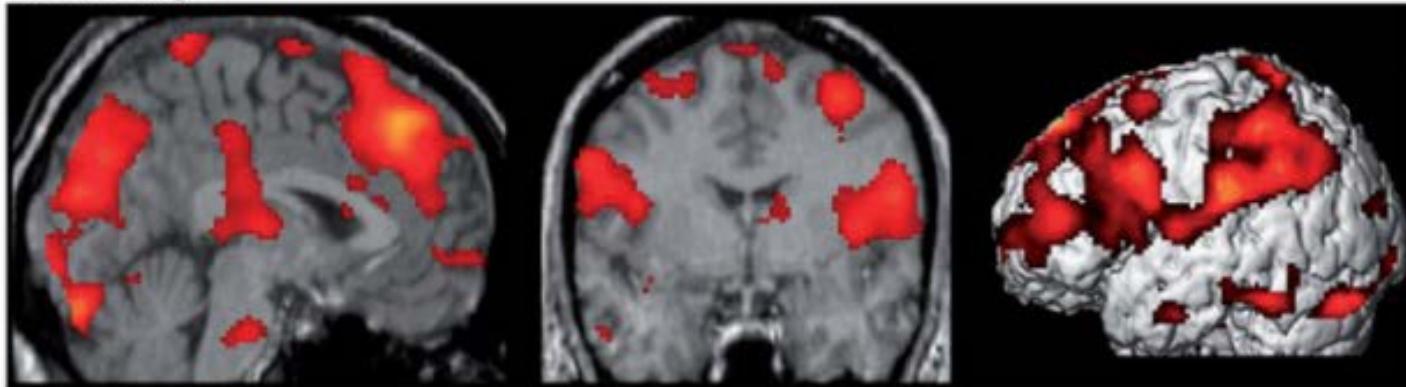
from USA Today





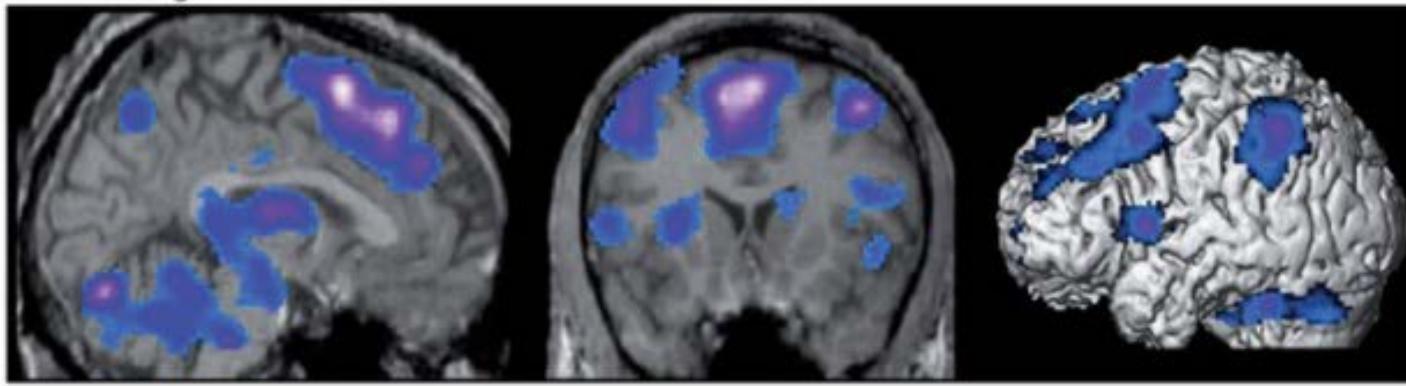
Physically induced pain

Pain rating 5



Hypnotically induced pain

Pain rating 5



The Rules of Pain

- ▶ 1. All pain is real
- ▶ 2. The purpose of pain is protection





- ▶ What happens if you cannot feel pain?



Duct Tape

What happens if you cannot feel pain?

Diabetic Foot Ulcer



Leprosy



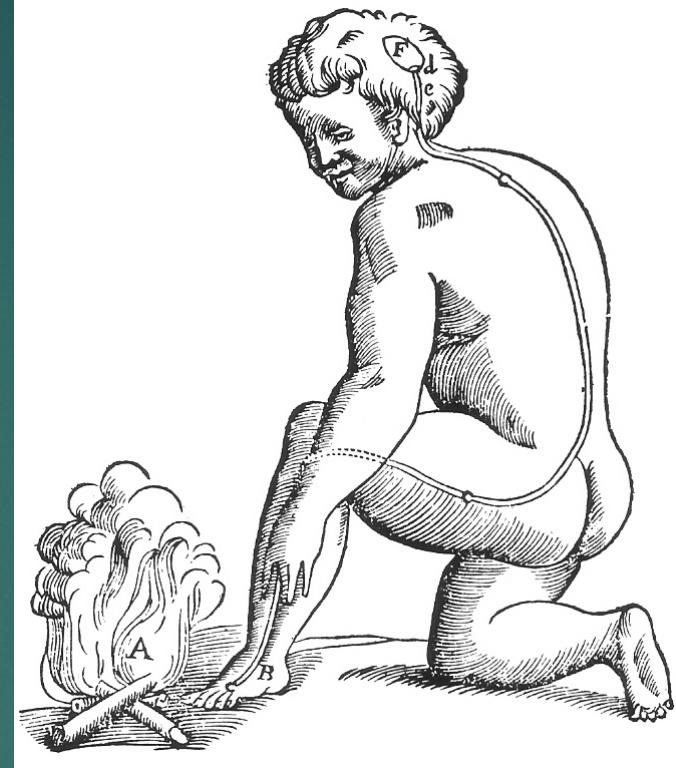
The Rules of Pain

- ▶ 1. All pain is real
- ▶ 2. The purpose of pain is protection
- ▶ 3. The brain learns to do pain
 - ▶ Like any skill, it improves with practice ☺

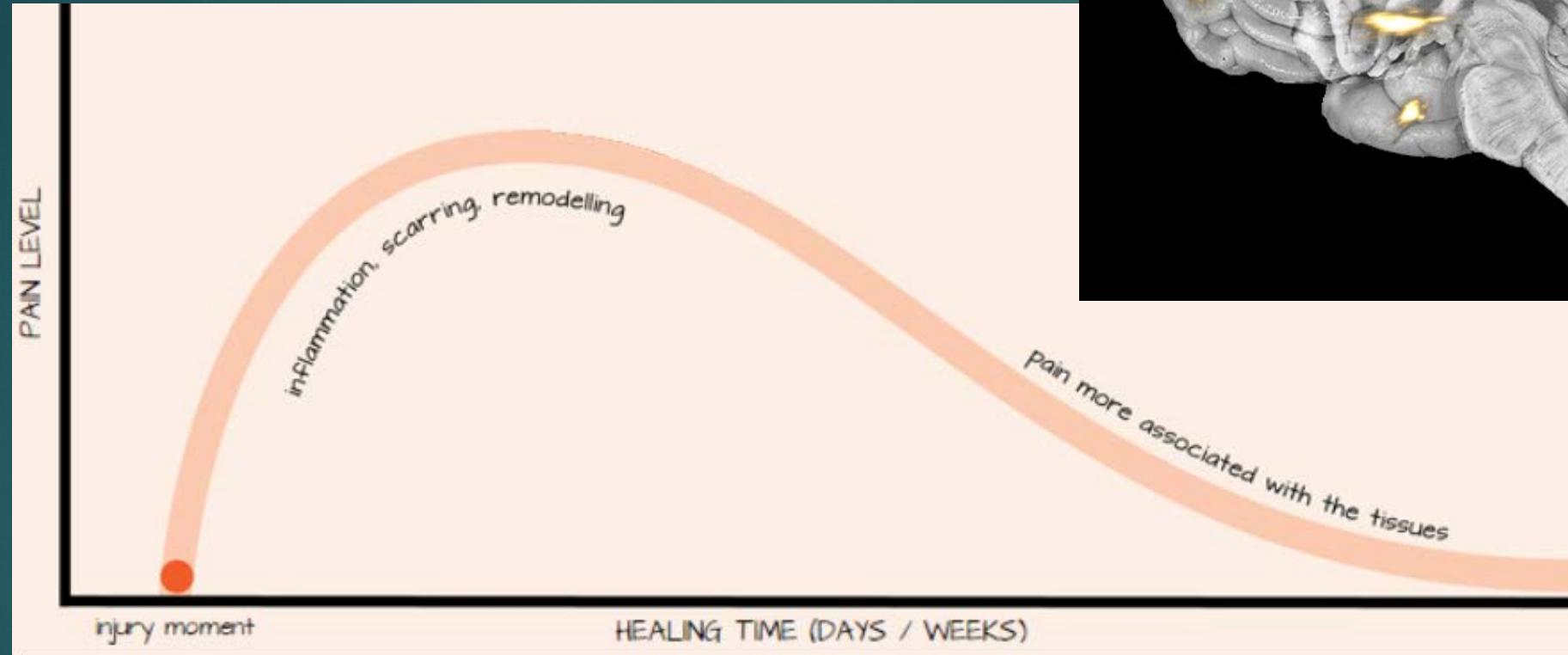


Acute Pain

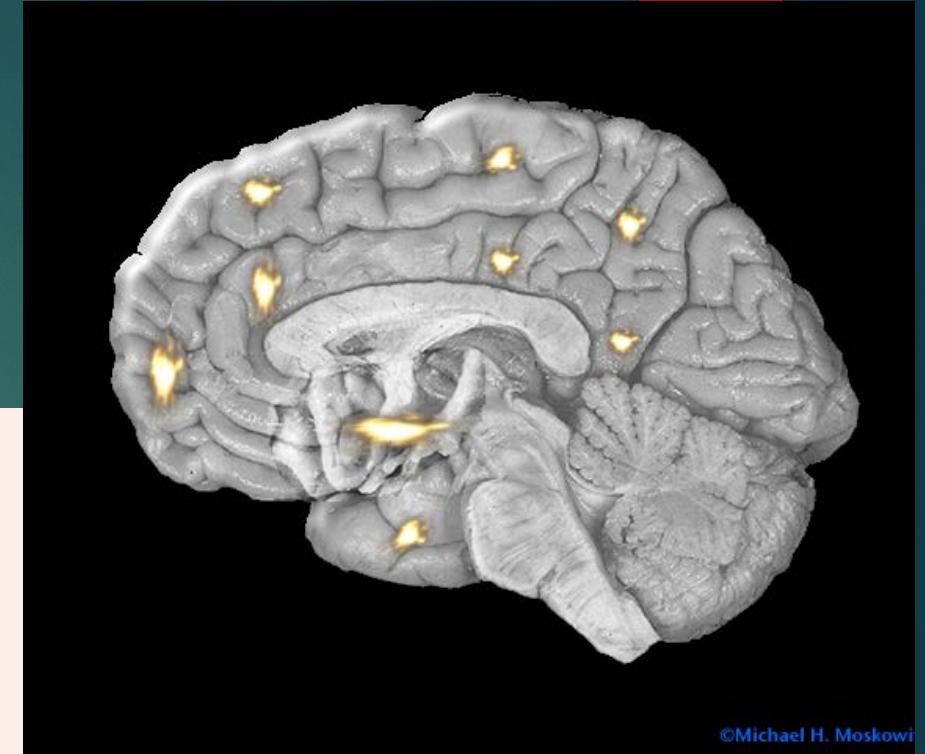
- ▶ Adaptive:
 - ▶ Indicates tissue injury
 - ▶ Initiates protective behavior



In an ideal world. . .



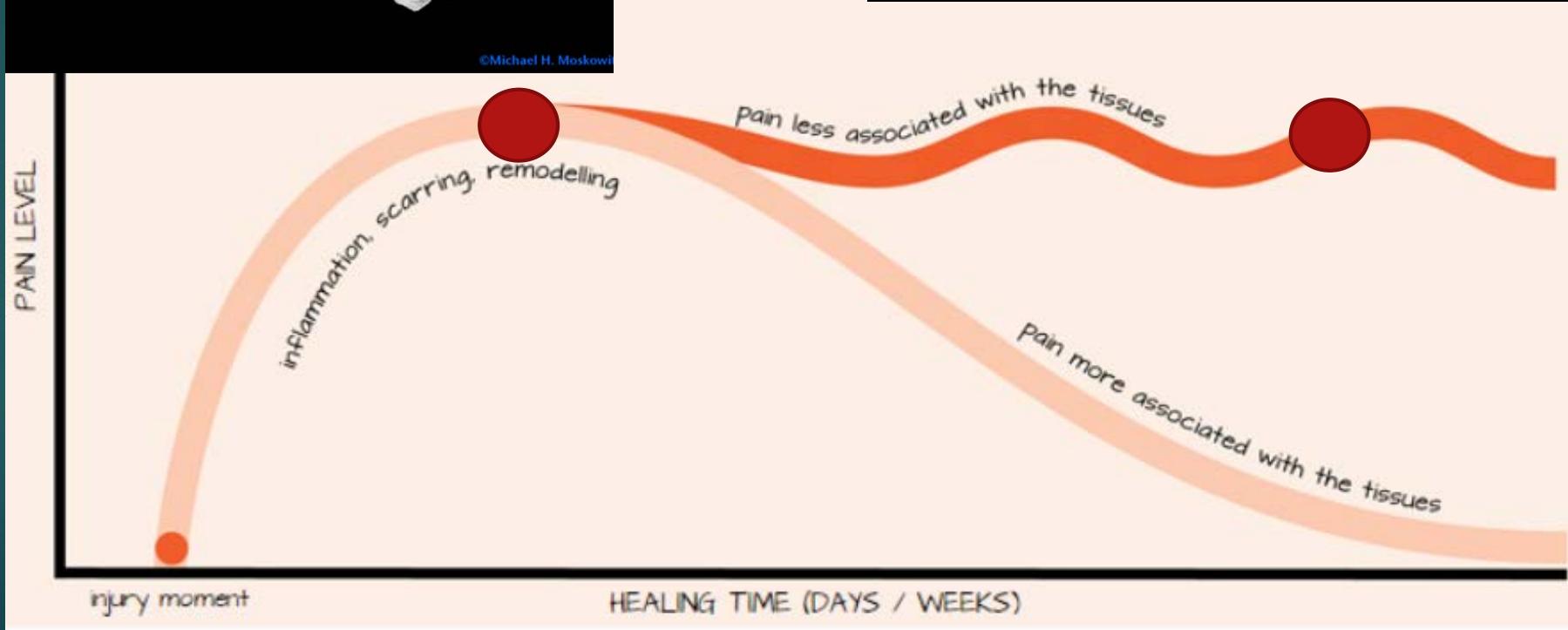
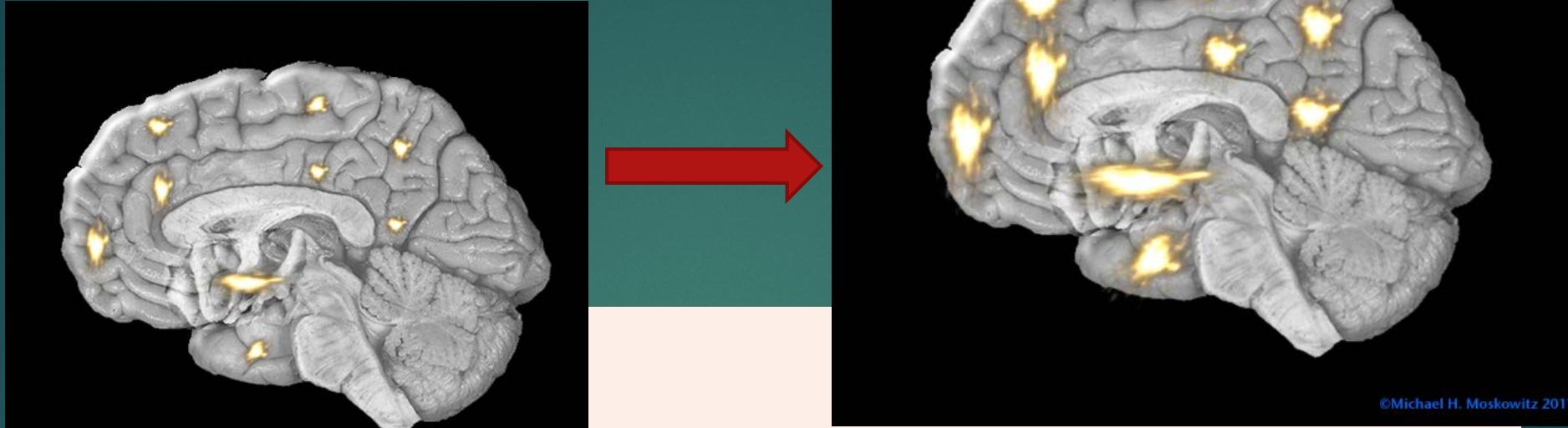
Acute pain –
develops with injury, and then Resolves



©Michael H. Moskowitz

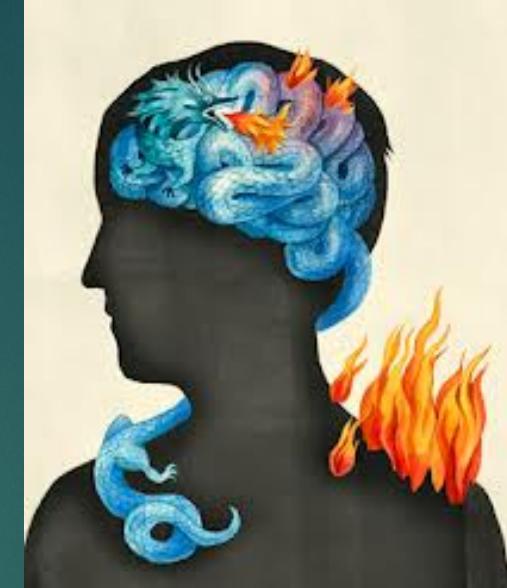


In chronic pain:



Chronic Pain

- ▶ Maladaptive:
- ▶ Signal no longer related to trauma/injury
- ▶ Ongoing message is harmful,
not protective



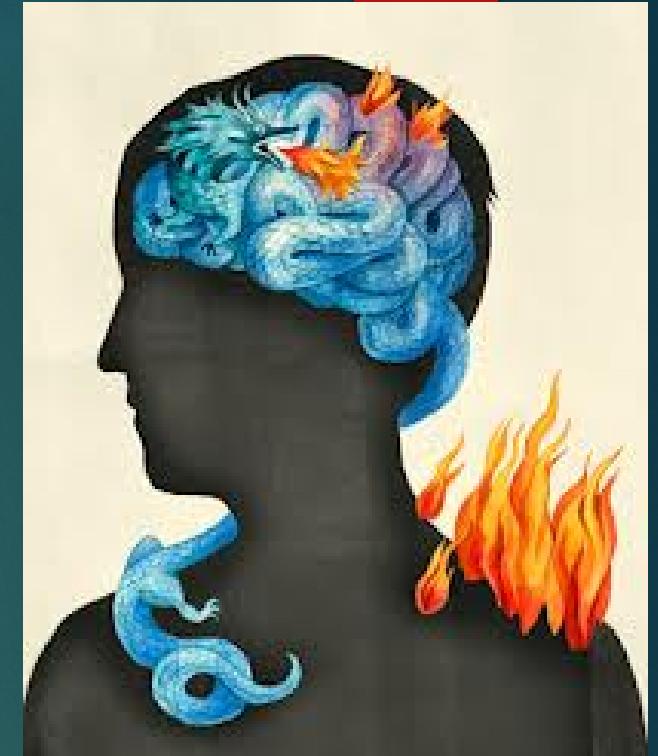
Right after a fill-up



Chronic Pain

- ▶ Maladaptive:
- ▶ Signal no longer related to acute trauma/injury
- ▶ Ongoing message is harmful, not protective
- ▶ The disease may be in the BRAIN, not the painful body part

- ▶ Chronic nonmalignant pain is common:
 - ▶ >50 million Americans
The American Journal of Bioethics, 10:11, 5 – 12, 2010
 - ▶ 26% of Kansas adults >18 yo, according to a population-based survey
(2011) 1249-1255



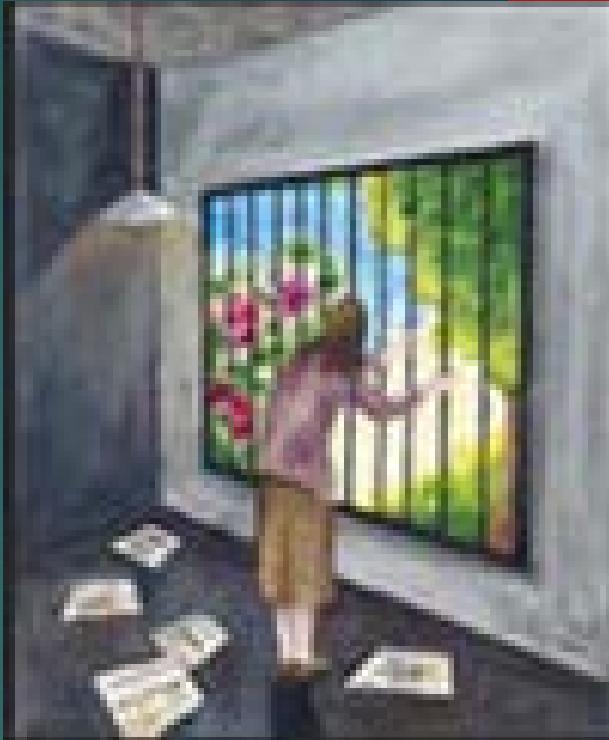
PAIN 152





Effects of Chronic Pain

- ▶ Physical
 - ▶ Stress
 - ▶ Interrupted sleep
 - ▶ Poor wound healing
 - ▶ Decreased immunity
- ▶ Psychological
 - ▶ Depression
 - ▶ Isolation
 - ▶ Self-medication
- ▶ Spiritual
 - ▶ Reminder of mortality
 - ▶ At times perceived as a punishment or evidence of moral wrongdoing
 - ▶ Causes feelings of powerlessness, hopelessness



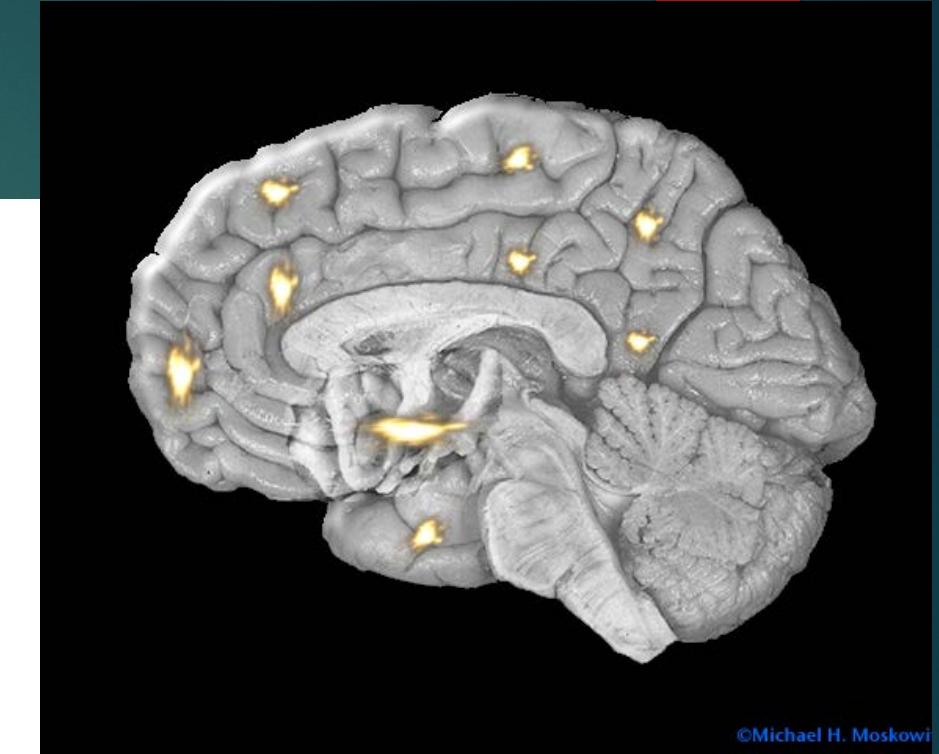
In establishing trust with patients, it is important to acknowledge these impacts – we will not linger here, but do not skip this step with your patients



Another metaphor



► The Balanced Brain

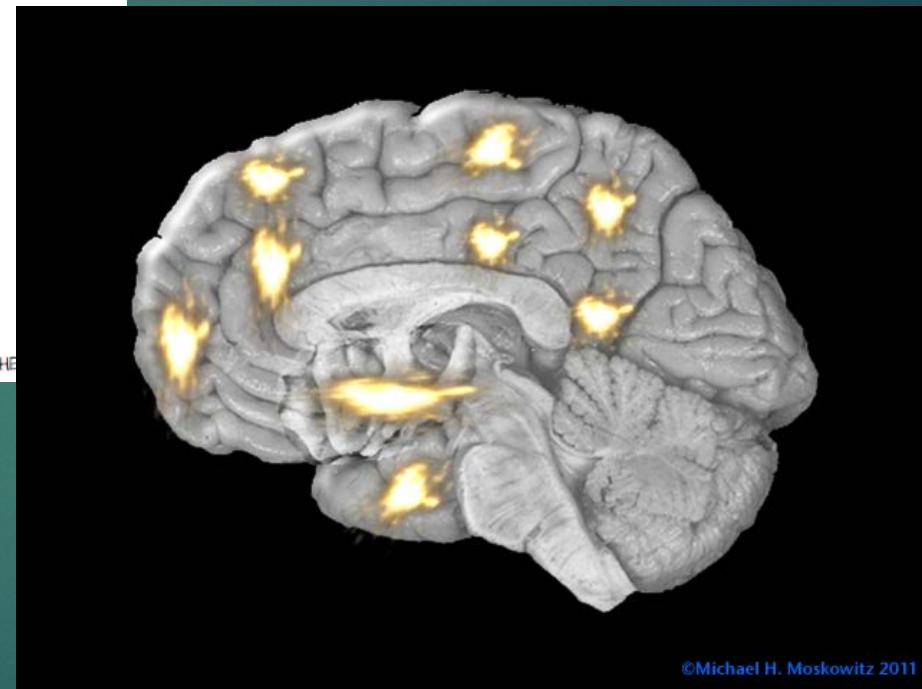


©Michael H. Moskowitz





THE PAIN BRAIN



©Michael H. Moskowitz 2011





IM4US
INTEGRATIVE MEDICINE FOR THE UNDERSERVED

Integrative Pain Management

PAIN MAY BE MANDATORY,
BUT SUFFERING IS OPTIONAL

Solutions?

- ▶ Heal the Body
- ▶ Heal the Brain
- ▶ Heal the Person



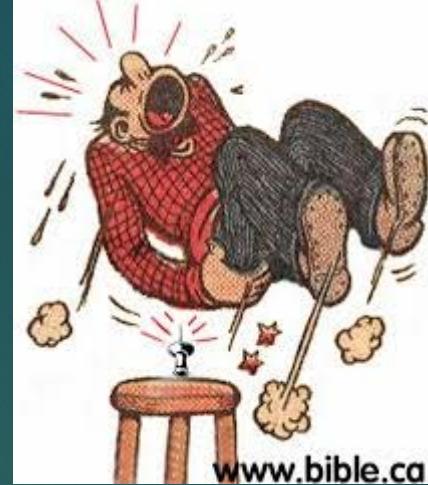


Circling back: What does Functional Medicine Add to Pain Management?

- ▶ A conceptual framework to think about chronic and complex illness and to address it
- ▶ Focus on underlying causes
 - ▶ The wisdom of the 2 year old – “Why?”
- ▶ Taxonomy ≠ Etiology



Tacks Rule #1



- If you are sitting on a tack, it takes a lot of aspirin to make the pain go away.

Sidney Baker, MD



Tacks Rule #1



- ▶ If you are sitting on a tack, it takes a lot of aspirin to make the pain go away.
 - ▶ You can substitute psychotherapy, meditation, organic foods, etc for the aspirin and the rule still holds
- ▶ The proper treatment for tack-sitting is tack removal

Duct Tape





Tacks Rule #2

- ▶ If you are sitting on two tacks, removing just one does not result in a 50% improvement.





Tacks Rule #2

- ▶ If you are sitting on two tacks, removing just one does not result in a 50% improvement.
- ▶ If you have a mechanical issue AND a sleep problem/hormone problem/brain changes from chronic pain, treating either one of these may not result in improvement until both are addressed
- ▶ *Chronic illness is, or becomes, multifactorial*



Tacks Rule #3

- ▶ If you are sitting on 3 tacks, you have an environmental problem



Tacks Rule #3

- ▶ If you are sitting on 3 tacks, you have an environmental problem
 - ▶ Rancidity – oxidative stress
 - ▶ Bugs – parasites, yeast, bacteria
 - ▶ Toxins – yours and others



A Corollary to the Tacks Rules

- ▶ If you are sitting on a tack and you use morphine to make it feel good, this may prevent you from removing the tack



Example of Underlying Causes Approach

Bob E. - 67 yo man with new onset RA

Marital counseling, journaling and Elim diet





The Two Questions

– Biochemical Individuality

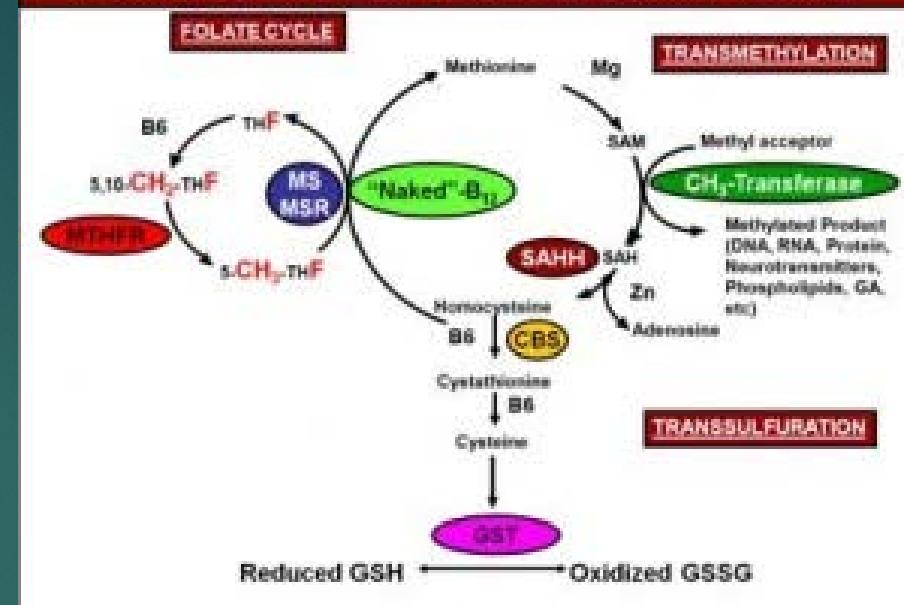


- ▶ Is there something for which you have an **unmet special need?** (Get)
 - ▶ Biochemical individuality
- Or
- ▶ Something for which you have an unmet special need **to get rid of or avoid?** (the rule of tacks) (Rid)



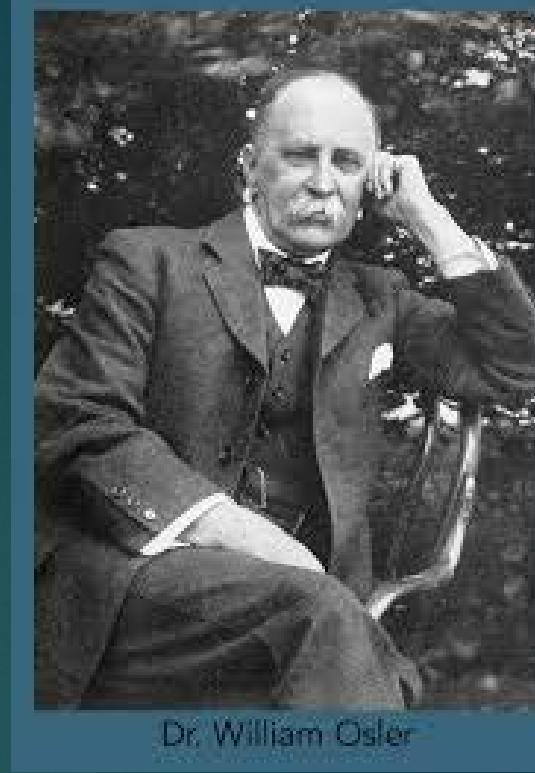
MTHFR SNPs

- ▶ Polymorphisms are associated w/risk of:
 - ▶ Autism
 - ▶ Depression
 - ▶ Cancer
 - ▶ Cardiovascular disease
 - ▶ Neural tube defects
- ▶ Methylfolate appears to decrease symptoms
 - ▶ [J Nutrigenet Nutrigenomics](#). 2015;8(3):137-50. doi: 10.1159/000440700. Epub 2015 Oct 21.



More on individuality – the individual's story

- ▶ It is more important to know what person has the disease than which disease the person has.
- ▶ —Sir William Osler



Dr. William Osler



ATM model



- ▶ Person-centered diagnosis proposed by Leo Galland
- ▶ Antecedents
- ▶ Triggers
- ▶ Mediators



Triggers - Discrete entities or events that provoke disease or its symptoms ("Straws")

- ▶ Trauma
- ▶ Microbes
- ▶ Drugs
- ▶ Allergens
- ▶ Foods
- ▶ Toxins
- ▶ Stressful life events



- ▶ **Precipitating events:** before this event, patient was healthy, after...never again!



Antecedents(GULCH): factors predisposing to illness



- ▶ Mother's health before and during pregnancy
- ▶ Congenital, acquired, or inherited
- ▶ Family history (with attention to the ideas of epigenetics)
- ▶ ACEs – Adverse Childhood Experiences
- ▶ Exposure to toxins
- ▶ Trauma
- ▶ Microbial milieu of the body
- ▶ Nutrition
- ▶ Learned patterns of behavior



Mediators/Mechanism: aid the illness cascade, maintain illness

- ▶ Biochemical
 - ▶ Free radicals , Cytokines, Hormones, Neurotransmitters
 - ▶ Electromagnetic fields
 - ▶ Neurologic wind-up/neuroplasticity
- ▶ Social
 - ▶ Lack of resources – especially as disability and its financial consequences develop
 - ▶ Reinforcement for staying ill
 - ▶ Lack of support - Loneliness
- ▶ Psychological
 - ▶ Low self-esteem, low self-efficacy
 - ▶ Conditioning
 - ▶ Fear





Identifying ATM's –



A clinical pearl, especially for Fibro

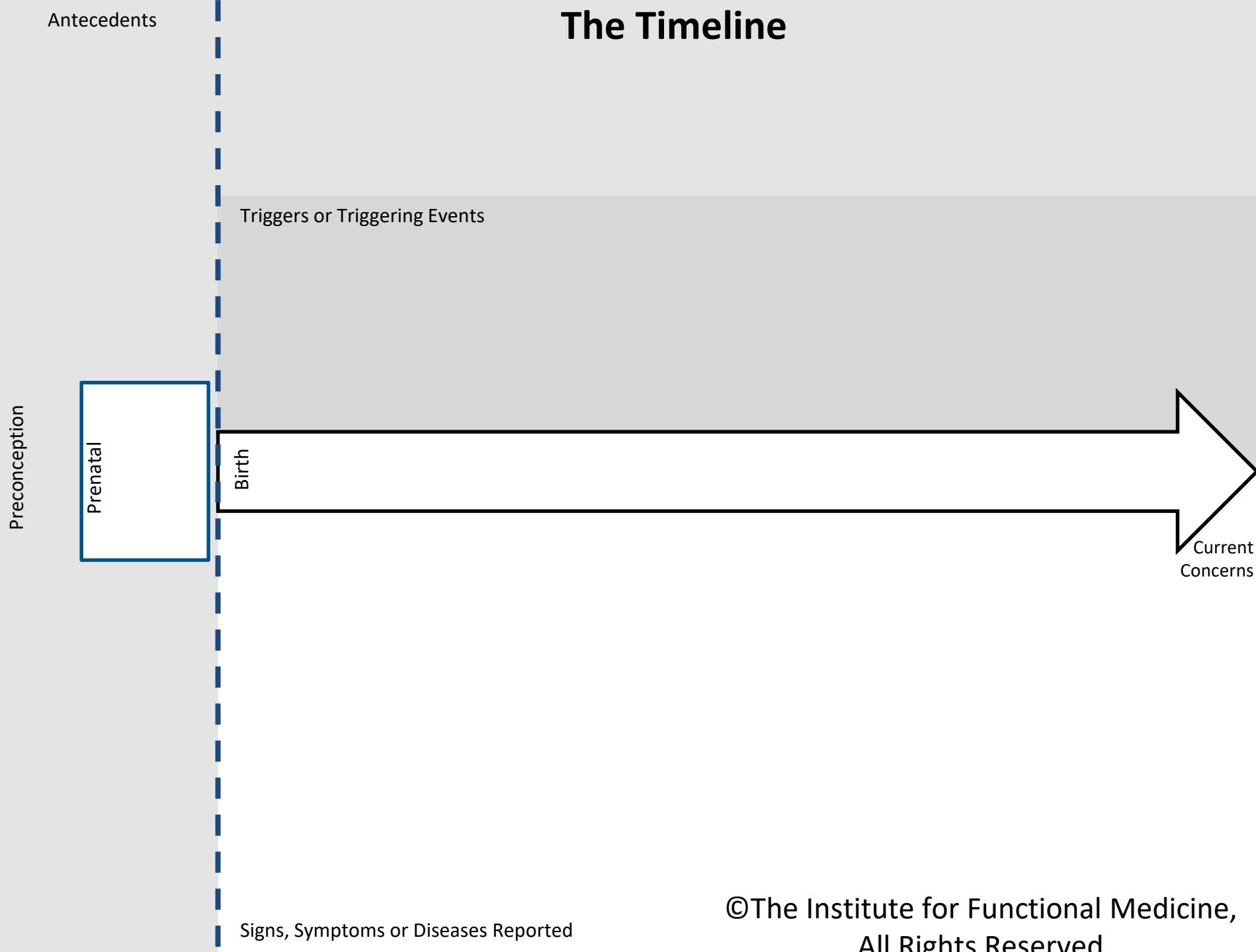
- ▶ When is the last time you felt really well for more than a few days at a time?
- ▶ During the six months preceding that date, did you experience any illness or major stress, change your use of medication or dietary supplements, or make any significant life changes?





Antecedents

The Timeline



GO TO IT – another tool of FM we will not cover in detail, for time, but emphasize the TELL



- ▶ Gather
- ▶ Organize
- ▶ Tell
 - ▶ Retelling ATM's and case highlights
 - ▶ Invite patient to join in correcting and amplifying the story
 - ▶ Establish the context of partnership
- ▶ Order
- ▶ Initiate
- ▶ Track





The Matrix

► “When one tugs at a single thing in nature, he finds it attached to the rest of the world.”

► John Muir



FUNCTIONAL MEDICINE MATRIX

Retelling the Patient's Story

Antecedents

(Predisposing Factors—
Genetic/Environmental)

Triggering Events (Activators)

Mediators/Perpetuators (Contributors)

Physiology and Function: Organizing the Patient's Clinical Imbalances

Assimilation

(e.g., Digestion,
Absorption, Microbiota/GI,
Respiration)

Structural Integrity

(e.g., from Subcellular
Membranes to
Musculoskeletal
Structure)

Defense & Repair

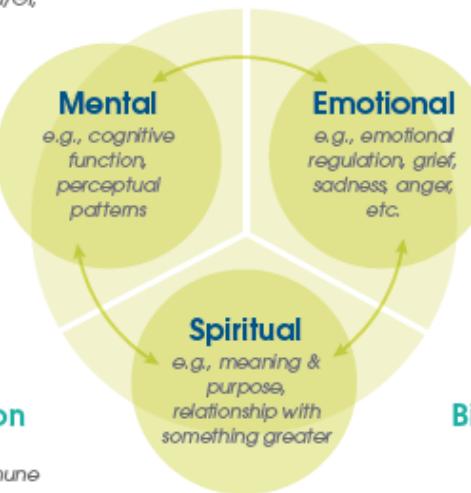
(e.g., Immune,
Inflammation,
Infection/Microbiota)

Energy

(e.g., Energy
Regulation,
Mitochondrial
Function)

Communication

(e.g., Endocrine,
Neurotransmitters, Immune
messengers)



Modifiable Personal Lifestyle Factors

Sleep & Relaxation

Exercise & Movement

Nutrition

Stress

Relationships





FUNCTIONAL MEDICINE MATRIX

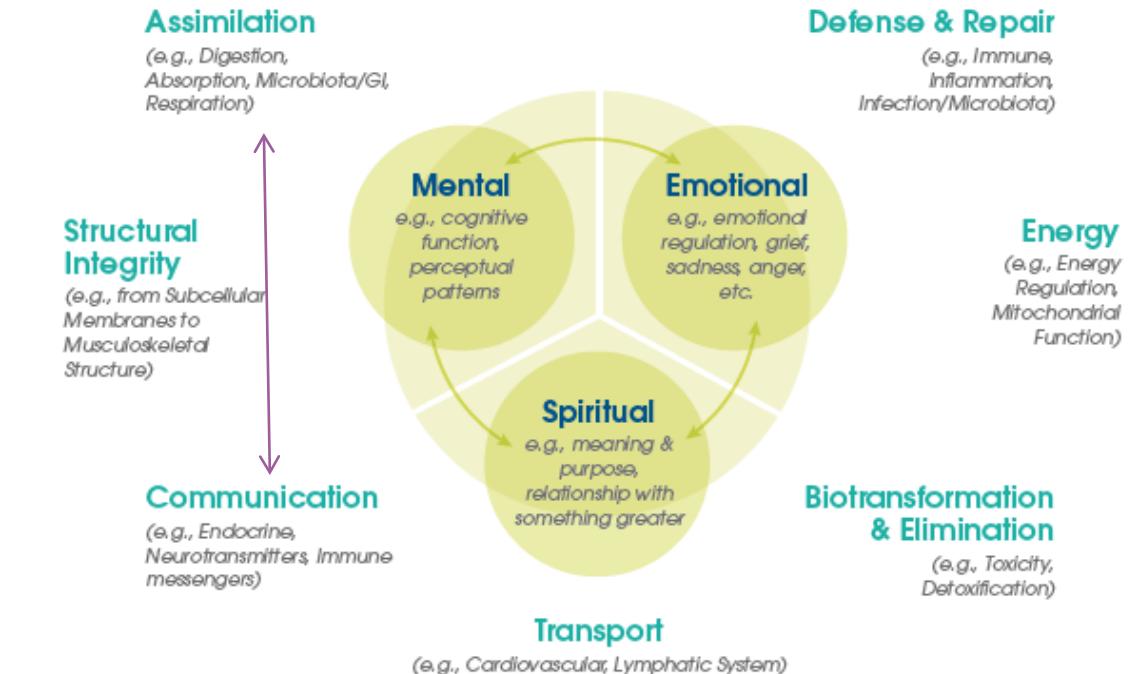
Retelling the Patient's Story

Antecedents
(Predisposing Factors—Genetic/Environmental)

Triggering Events
(Activators)

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Physiology and Function: Organizing the Patient's Clinical Imbalances



Modifiable Personal Lifestyle Factors

Sleep & Relaxation

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FUNCTIONAL MEDICINE MATRIX

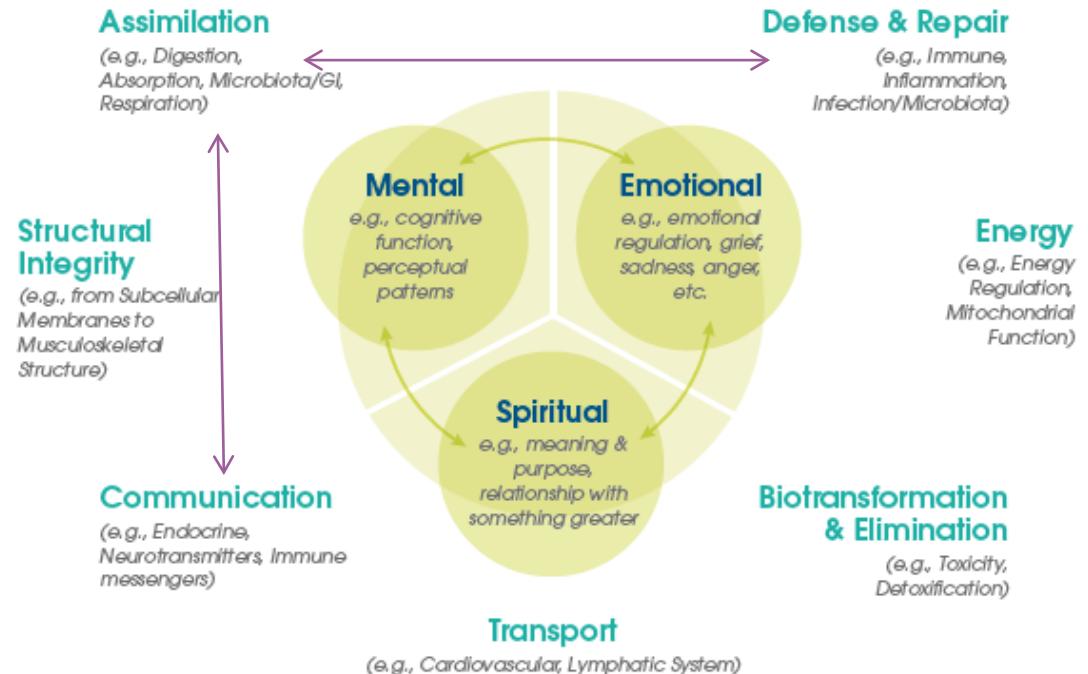
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Sleep & Relaxation

Exercise & Movement

Nutrition

Stress

Relationships



Name: _____

Date: _____

CC: _____

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FUNCTIONAL MEDICINE MATRIX

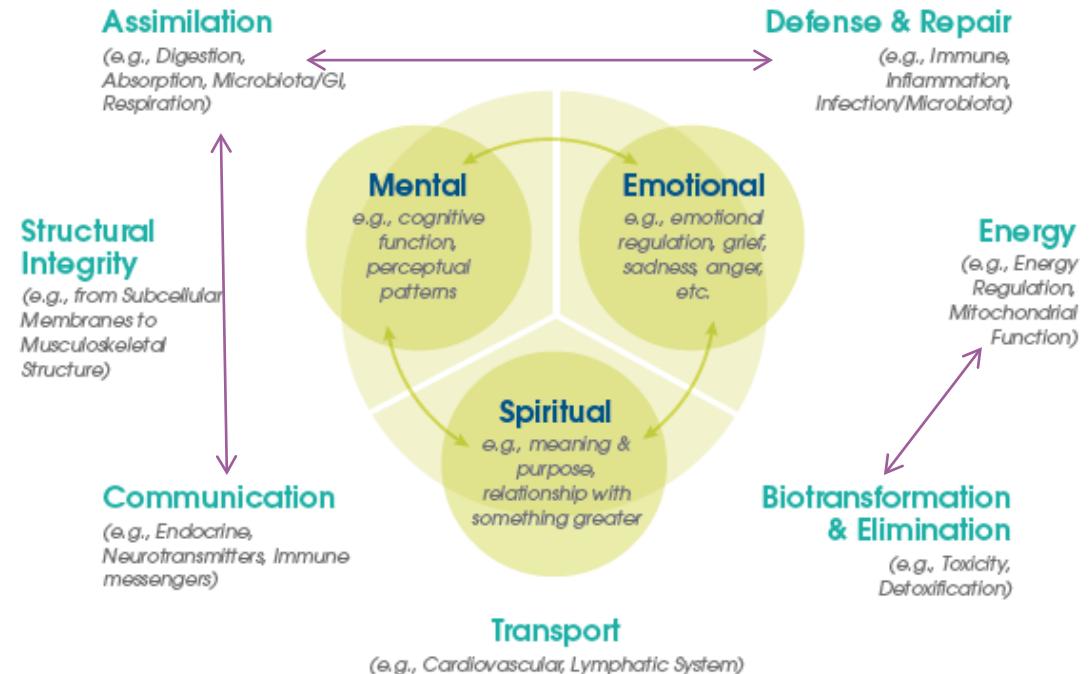
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Modifiable Personal Lifestyle Factors

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Name: _____

Date: _____

CC: _____

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FUNCTIONAL MEDICINE MATRIX

Retelling the Patient's Story

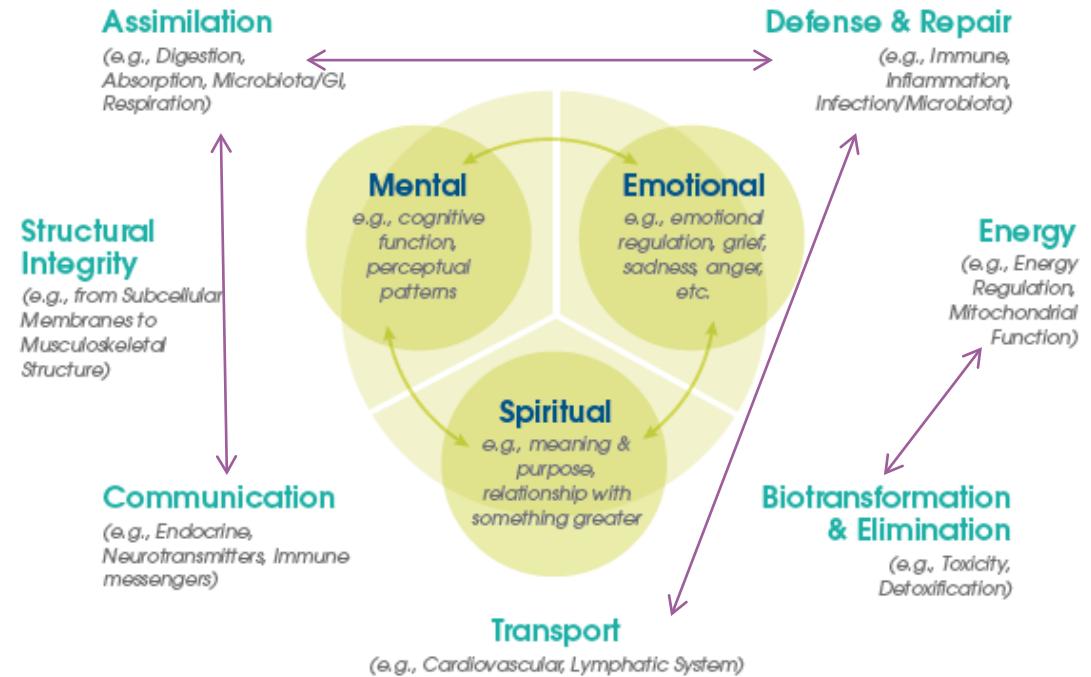
Antecedents

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Modifiable Personal Lifestyle Factors

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FUNCTIONAL MEDICINE MATRIX

Retelling the Patient's Story

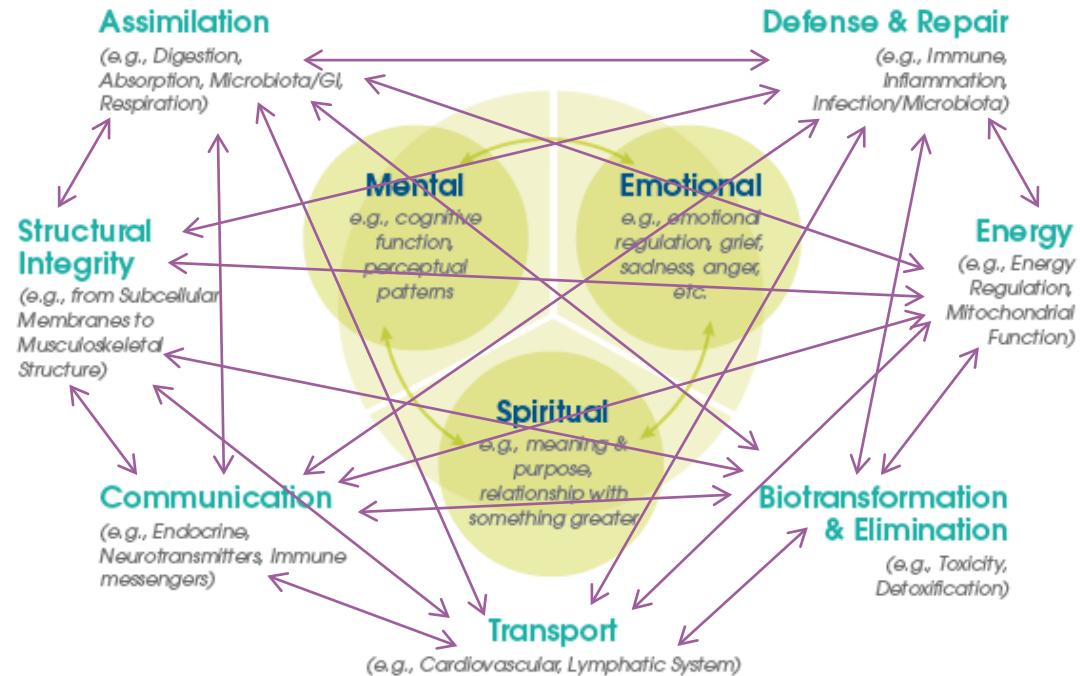
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Modifiable Personal Lifestyle Factors

Sleep & Relaxation	Exercise & Movement	Nutrition	Stress	Relationships
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Small Intestine Bacterial Overgrowth (SIBO) as an example

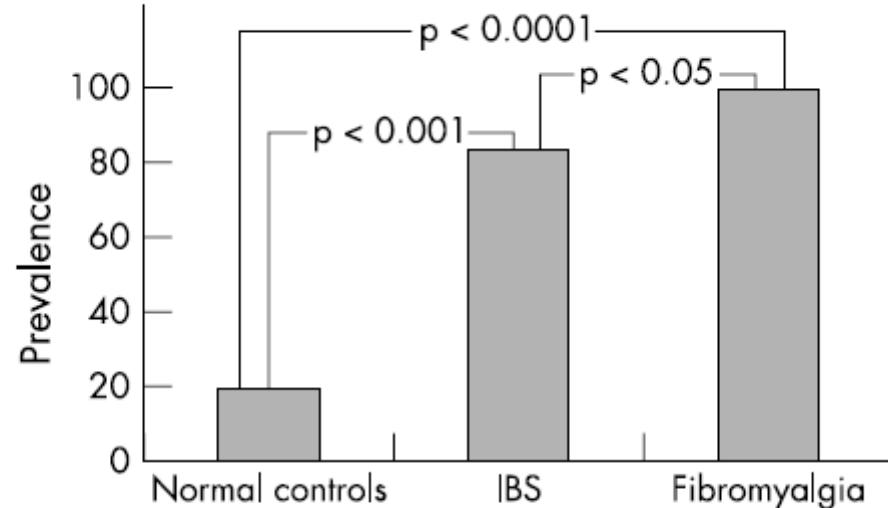


Figure 1 Comparison of the prevalence of abnormal LBT in controls and subjects with IBS and fibromyalgia.

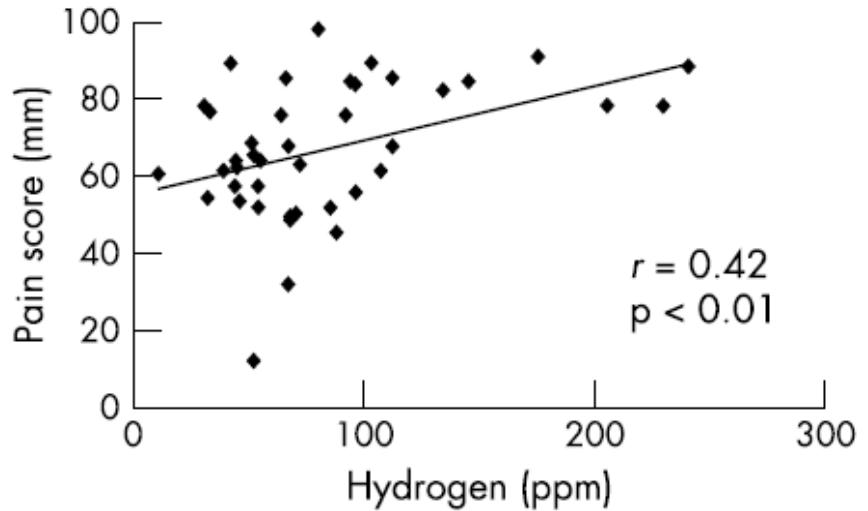


Figure 3 Correlation between the hydrogen peak production on LBT and pain on visual analogue score.

- ▶ Abnormal lactulose breath test is found in patients with fibromyalgia
- ▶ Pain scores may correlate with peak hydrogen production
 - ▶ Endotoxin increases hyperalgesia in animals

Ann Rheum Dis 2004;63:450–452.



Treatment of SIBO relieved RLS, which is associated with fibromyalgia

- ▶ Ten of thirteen patients exhibited > or = 80% improvement from baseline in RLS symptoms with Rifaximin treatment

Dig Dis Sci. 2008 May;53(5):1252-6

Anecdotally, treatment of SIBO sometimes helps fibromyalgia, interstitial cystitis, and other pain syndromes



Rheumatology International

March 2015, Volume 35, Issue 3, pp 433-444

An insight into the gastrointestinal component of fibromyalgia: clinical manifestations and potential underlying mechanisms



The blessing and the curse. . .



- ▶ The complexity of interactions means that the logic of your intervention may need some explaining to the patient
 - ▶ “Why are you so focused on my bowel movements when I came to you for my back pain?”
- ▶ The gift is that you do not have to “fix” every node – sometimes tweaking 1 or 2 things will allow the system itself to find a new balance



Stretch Break



As I present it to Patients:

- ▶ Heal the Body – more on this topic
- ▶ Heal the Brain
- ▶ Heal the Person





Corollaries to the Rule of Tacks in Pain Management

- ▶ Accurate diagnosis is important
 - ▶ Do not rush to control symptoms and ignore the message about an underlying health problem
- ▶ Remove tacks where possible, i.e. treat underlying causes
 - ▶ Surgical treatment
 - ▶ Physical therapies
 - ▶ Specific medical treatment for neuropathy, systemic inflammation related to gut disturbances, etc.
 - ▶ Sleep, hormonal, nutritional influences on tissue healing
 - ▶ Counseling - History of trauma



Structural issues and Manual Medicine

- ▶ OMT vs. control for LBP
 - ▶ OMT significantly reduced low back pain (effect size, -0.30; 95% confidence interval, -0.47 – -0.13; P = .001).
 - ▶ Short, intermediate and long-term follow-up

BMC Musculoskelet Disord. 2005; 6: 43

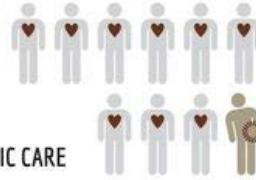
- ▶ OMT systematic review musculoskeletal pain:
 - ▶ 11 studies no benefit
 - ▶ 5 studies improved outcome Clin Rheumatol (2011) 30:285–291



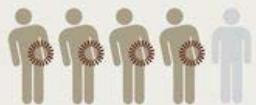
Structural issues and Manual Medicine

How Effective is Chiropractic Care?

LET'S EVALUATE:
PRE & POST CHIROPRACTIC CARE



Chiropractic care has an extremely high success rate among patients. **9 out of 10 users of chiropractic feel their treatment has been effective.** If you're looking for greater quality of life — especially if you're suffering from chronic back pain — go visit your local chiropractor!



At some point in their lives, 80% of the population will experience back pain.
CONSUMER REPORTS, MARCH 2013

Chiropractic Care is a viable and great health option for all people, especially those with chronic or acute low back pain. Using BackChart®, your chiropractor can better monitor your progress during your course of treatment.

Low Back Oswestry is an extremely useful tool that researchers and disability evaluators use to measure a patient's functional disability. A recent study of 222 chiropractic patients seeking low back pain relief revealed:

4x Improved Function!



A higher score means the **function of daily living (ADLs)** is impaired.
A lower score means **increased function of ADLs**. Enjoy activities & an improved quality of life!



Chiropractic patient satisfaction

- ▶ Satisfaction score for chiropractic patients better than medical patients [Am J Public Health. 2002 Oct;92\(10\):1628-33.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1253333/)

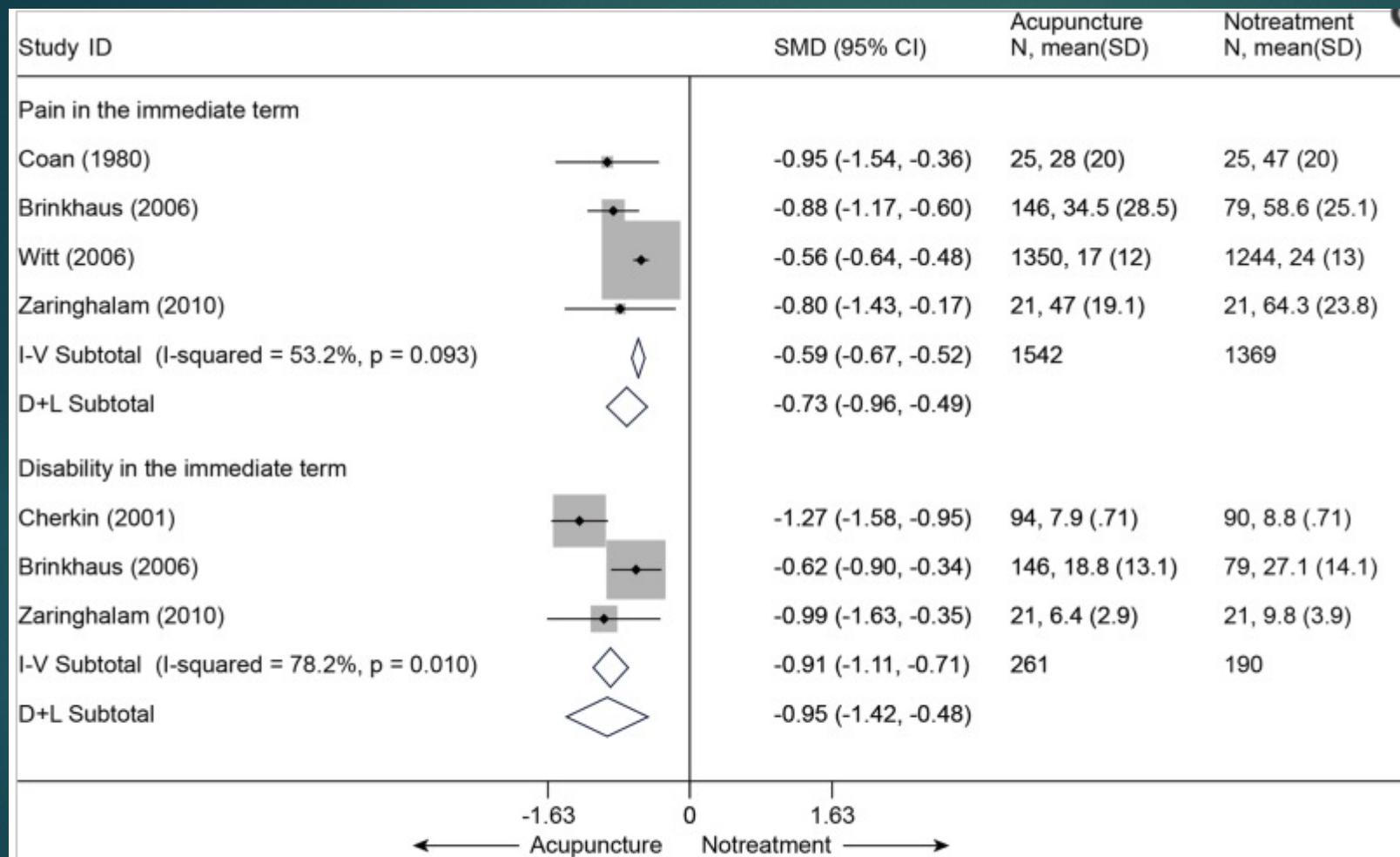
- ▶ Neck pain: manual therapy resulted in faster recovery than physiotherapy and general practitioner care [Korthals-de Bos et al \(2003\), British Medical Journal](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1403333/)

Etc. . .





Acupuncture



Meta-Analysis of Acupuncture versus Notreatment for CLBP in Pain and Disability.



o PLoS One. 2015; 10(2): e0117146.

o Published online 2015 Feb 24. doi: [10.1371/journal.pone.0117146](https://doi.org/10.1371/journal.pone.0117146)



SHINE-MT – a useful mnemonic

For T's and M's in the ATM

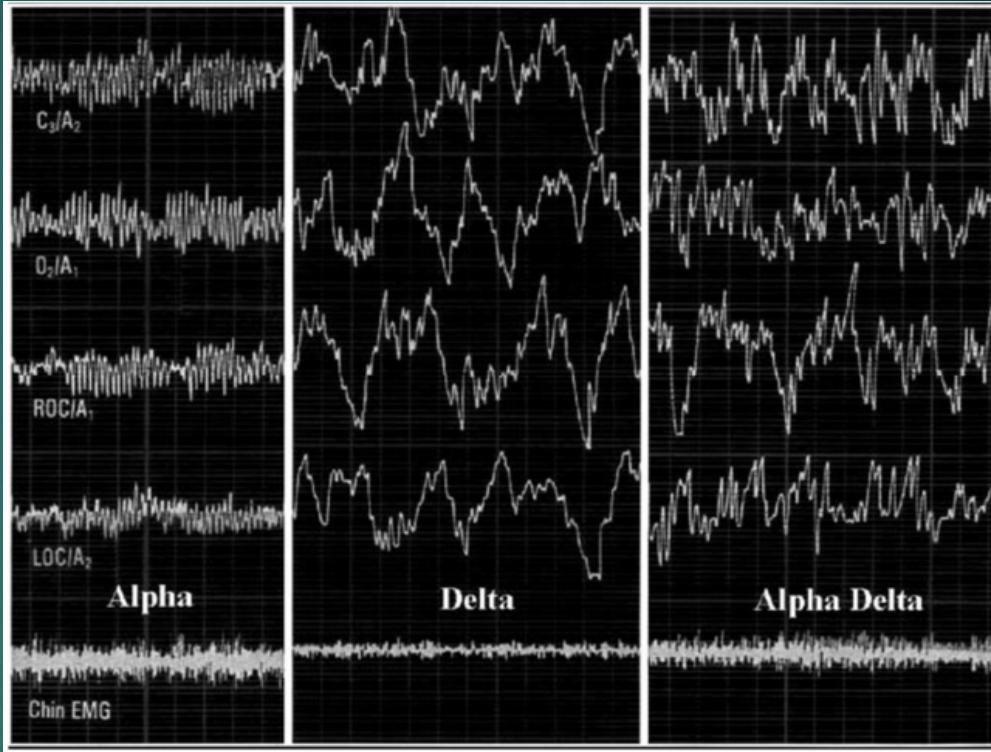
- ▶ Sleep
- ▶ Hormones
- ▶ Infection
- ▶ Nutrition
- ▶ Exercise

- ▶ Mindbody
- ▶ Toxicity



S Pain Interferes with Normal Sleep

- ▶ Alpha wave intrusion on sleep -
deep, delta wave sleep is disrupted
Sleep. 1997 Aug;20(8):632-40.
- ▶ The alpha-EEG anomaly is present in:
 - ▶ Fibromyalgia
 - ▶ RA
 - ▶ Osteoarthritis
 - ▶ Primary Sjogren's Syndrome
 - ▶ PTSD
 - ▶ CFS



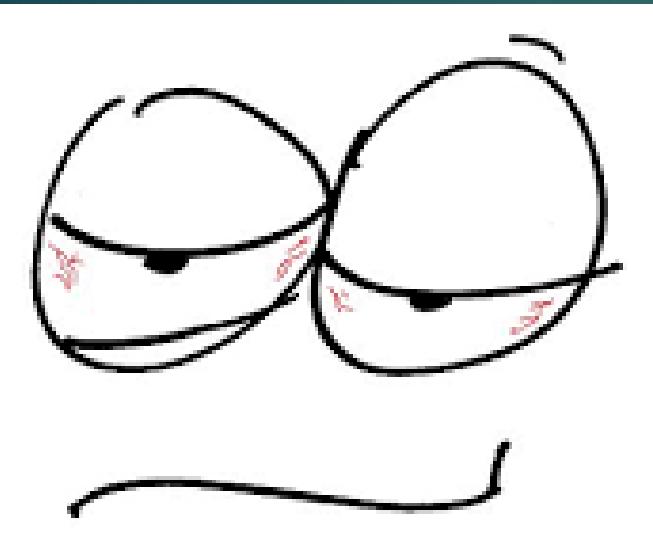
Drewes AM. (Thesis). Aalborg: Aalborg University, Denmark, ISBN 87-90562-00-3.



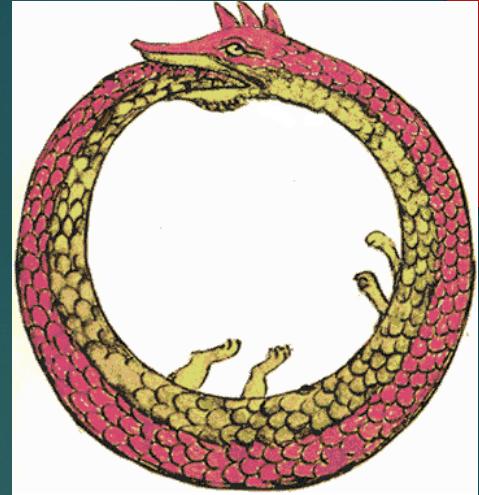
S

Poor Sleep Increases Pain

- ▶ Pain severity was related to fewer hours slept and delayed sleep onset. *J Pain Symptom Manage.* 1991 Feb;6(2):65-72.
- ▶ Low levels of somatomedin C (IGF-1) in patients with the fibromyalgia syndrome *Arthritis Rheum.* 1992 Oct;35(10):1113-6.
- ▶ 55.4% of patients with OSA have chronic widespread pain [*J Phys Ther Sci.* 2015 Sep;27\(9\):2951-4. doi: 10.1177/0898260315575111](https://doi.org/10.1177/0898260315575111)
- ▶ Sleep deprivation lowers the pain threshold



S The Vicious Cycle



- ▶ A night of poorer sleep was followed by a significantly more painful day
- ▶ A more painful day was followed by a night of poorer sleep. Pain. 1996 Dec;68(2-3):363-8.



Remove the peas



Sleep - treatment

- ▶ Search for and treat sleep apnea
 - ▶ Seen in in 14% of patients with chronic spinal pain
Pain Physician. 2016 May;19(4):E569-79.
 - ▶ Opioids exacerbate sleep-disordered breathing. *Chest.* 2016 Jun 1. pii: S0012-3692(16)49109-9
 - ▶ Unfortunately, CPAP did not decrease opioid use in vets J Clin Sleep Med. 2016 May 25. pii: jc-00502-15.
- ▶ Look for other underlying causes
 - ▶ PLM/RLS – iron deficiency and other causes
- ▶ Sleep hygiene
- ▶ Treat nighttime pain
- ▶ Circadian rhythm disturbances
 - ▶ Melatonin – 0.5 mg EARLY and am light or light box



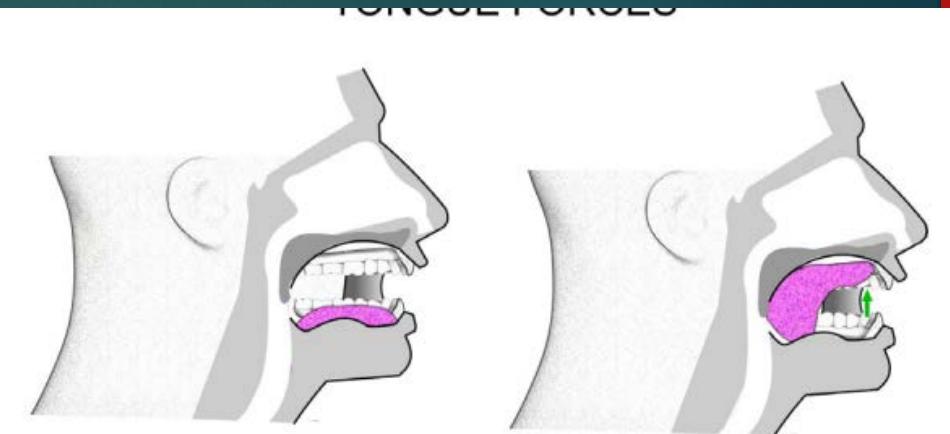
Alt Treatment Sleep Apnea

- ▶ CPAP/Bipap
- ▶ Sleep with your head elevated, such as in a recliner
- ▶ Consider BreatheRight strips
- ▶ Dental devices - Mandibular advancement



OSA

TONGUE EXERCISES

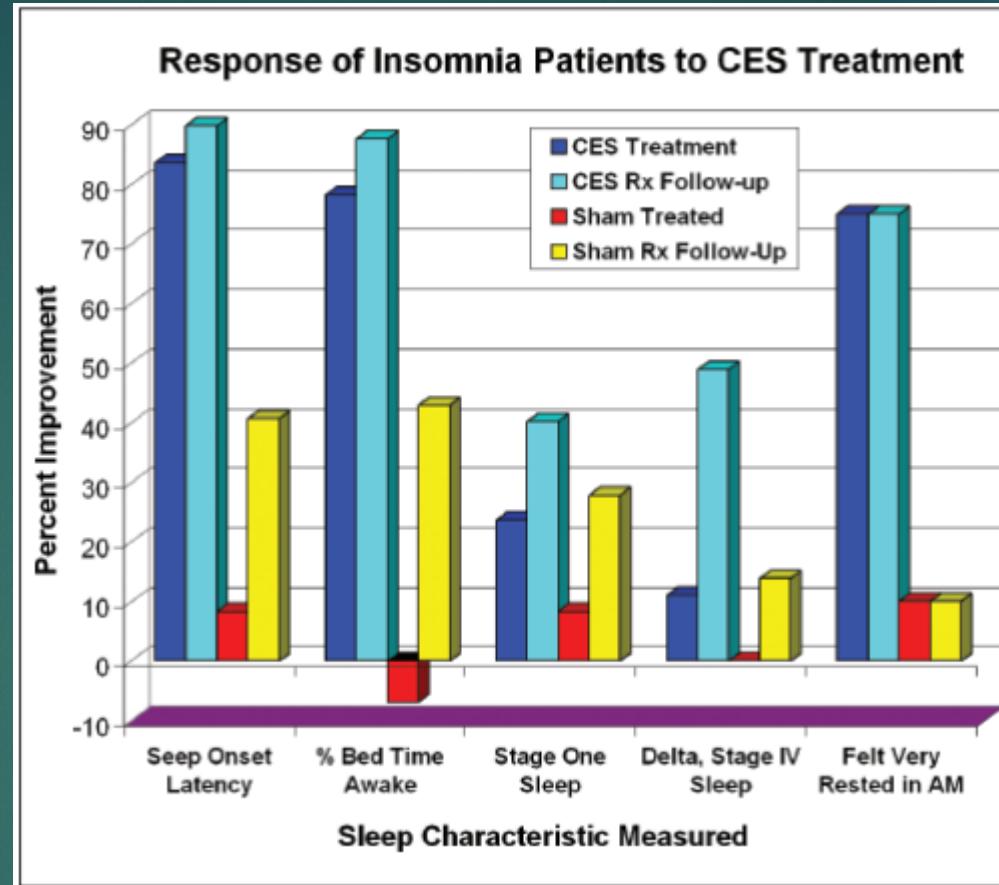


- ▶ Try the exercises at
http://www.sleepsolutionsnw.com/wp-content/uploads/2014/02/orofacial_exercises.pdf
- ▶ Check out <https://www.aveosleep.ca/>
 - ▶ There is a very inexpensive version of this device available on amazon.com – search for “tongue apnea.”





CES



Increased dreams for the first 1-2 weeks

Usually start in evening, move to am use



H

Symptoms of Low Thyroid

Activity

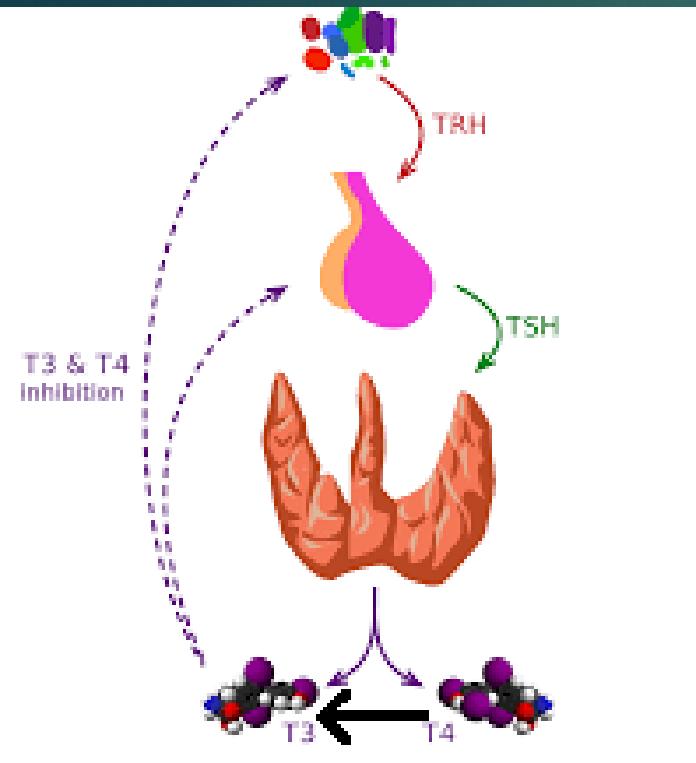
- ▶ Muscle Aches
- ▶ Fatigue
- ▶ Cold Intolerance
- ▶ Constipation
- ▶ Dry Skin and Hair
- ▶ Depression
- ▶ Difficulty Losing Weight

**Non-evidence
based alert
(but a clinical pearl!)**



H

Reasons Blood Tests May Not Show Hypothyroidism



- ▶ TSH may be normal with low thyroid activity:
 - ▶ Central/hypothalamic dysfunction Opioid Endocrinopathy Clin J Pain. 2010 Jun;26(5):374-80. J Neuroendocrinol. 2010 Aug;22(8):960-70
 - ▶ Peripheral conversion of T4 to T3
 - ▶ Selenium deficiency
 - ▶ Soy and some xenobiotics
 - ▶ Peripheral competition for the receptor, such as in PCB and other environmental chemical exposure
 - ▶ Mutations in receptor leading to thyroid resistance

Med Hypotheses. 1997 Feb;48(2):125-35



H Temperature Testing for the Thyroid

- ▶ Low RMR in women with fibromyalgia

Med Sci Monit. 2006 Jul;12(7):CR282-9.

Thyroid autoimmunity is associated with fibromyalgia

Clinical Rheumatology 2007 Dec; Vol. 26 (12), pp. 2115-2120, Rheumatol Int (2012) 32:335-341

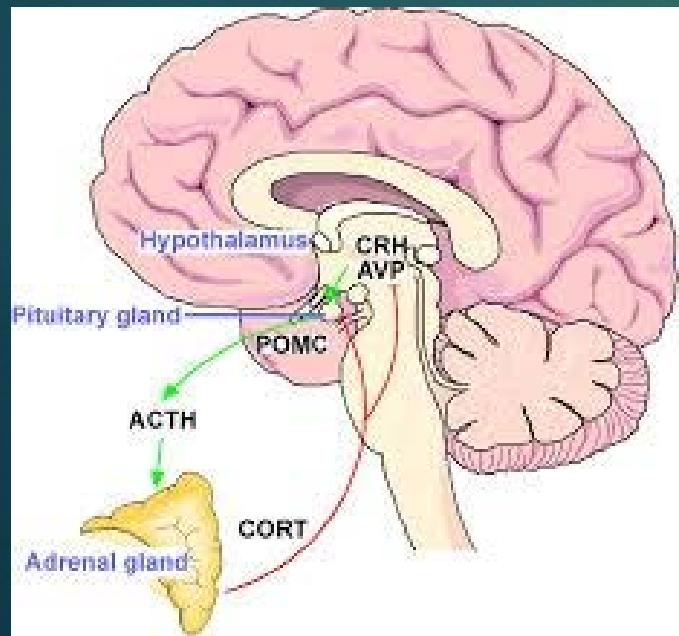
- ▶ Morning Basal Temperatures below 97.6 may indicate low thyroid activity
 - ▶ Measurement should be made in the first part of the menstrual cycle in menstruating women
- ▶ Consider trial of therapy with T3 or armour/nature-throid – Stanford has a clinical trial of this



H

Hypothalamic Pituitary Adrenal Axis

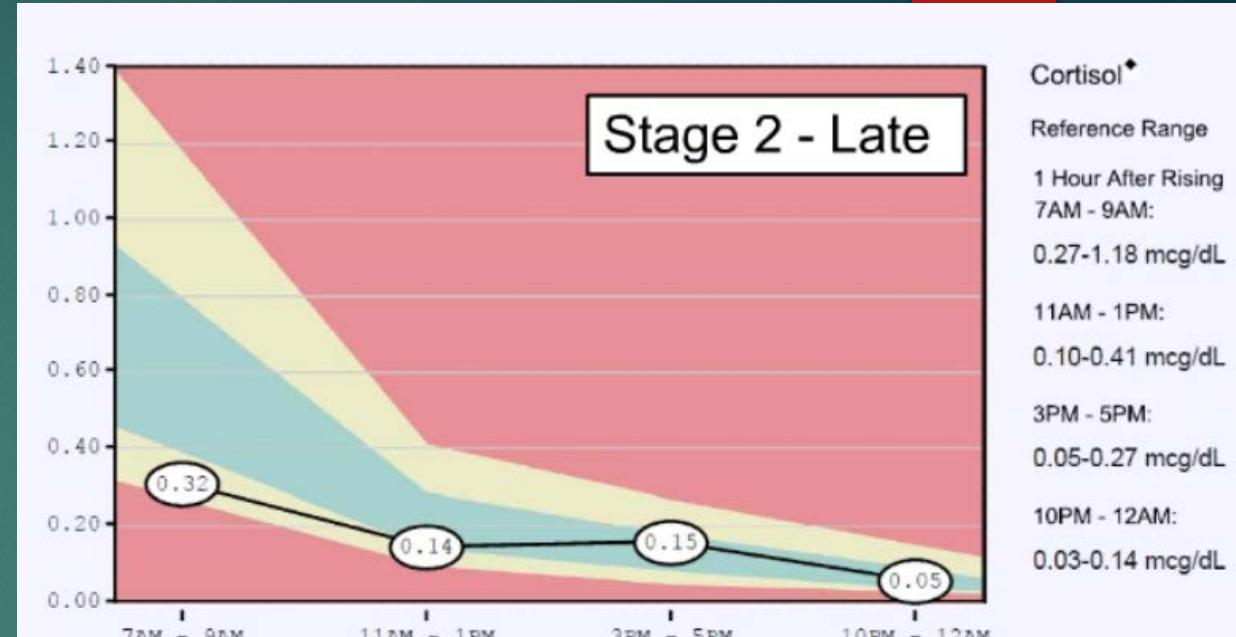
- ▶ Set Point is determined by stressors in early life
- ▶ Studies are contradictory but ACTH response to stress is exaggerated in fibromyalgia, while adrenal response to ACTH is blunted
- ▶ Opioid-related Endocrinopathy also may be significant



H Symptoms of Adrenal Insufficiency

- Fatigue
- Hypoglycemia
 - sugar craving
 - shakiness relieved by eating
- Low blood pressure, esp. dizziness with standing
- Recurrent infections

Salivary cortisol testing
now available per
standard labs



Hormone	Reference Range	Reference Range
DHEA 7am - 9am	70	71-640 pg/mL
DHEA: Cortisol Ratio/10,000	71	115-1,188



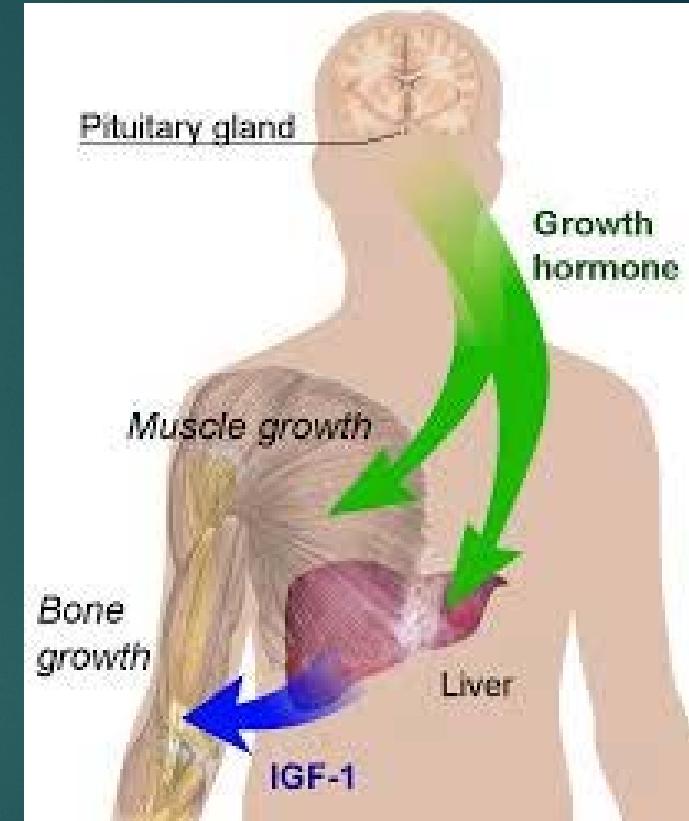
H Treating the Adrenals

- ▶ Nutritional – pantethine, magnesium
- ▶ Glandular extracts
- ▶ Cortef
- ▶ Safest may be herbal:
 - ▶ Siberian ginseng
 - ▶ Licorice if blood pressure is low – but monitor BP, potassium



H Growth Hormone

- ▶ Secreted in Stage 3 + 4 Sleep
- ▶ Depleted in Fibromyalgia
- ▶ Symptoms of growth hormone deficiency:
 - ▶ reduced exercise capacity
 - ▶ poor general health
 - ▶ muscle weakness
 - ▶ cold intolerance



H

Elevators of Growth Hormone



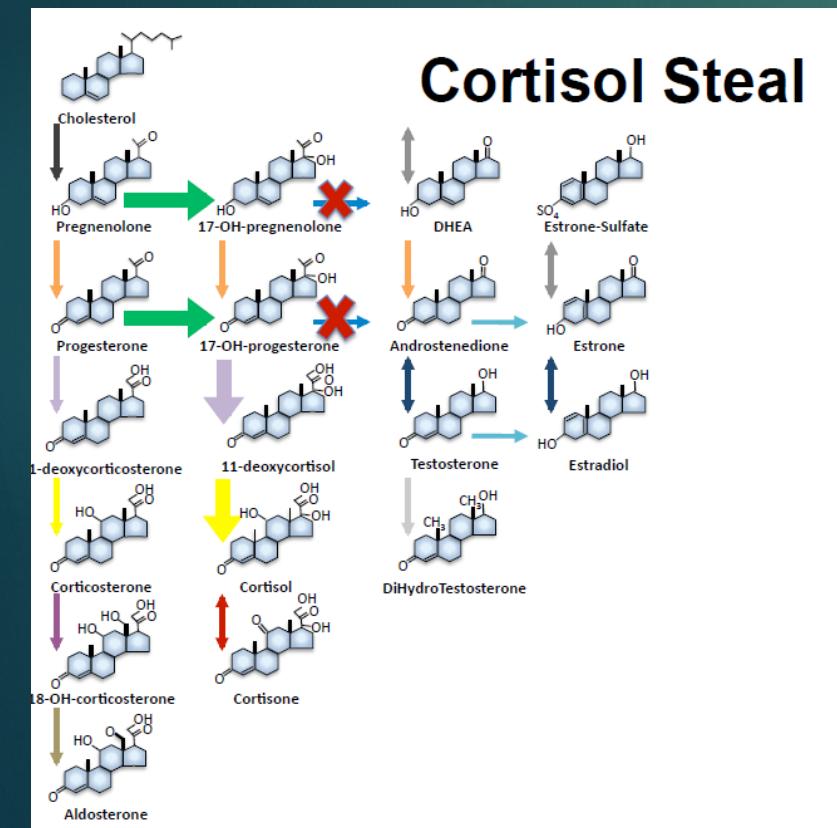
- ▶ Exercise
 - ▶ 10 minutes above lactate threshold intensity
- ▶ Adequate hydration
- ▶ Deep Sleep
- ▶ Low GI diet
- ▶ L-glutamine 2 grams, GABA 5 grams



H

Sex Hormones

- ▶ Sex steroids will be modulated by stress and HPA axis
- ▶ Low Androgens associated with Fibromyalgia:
 - ▶ DHEA-S – optimal is 120-180 for women, 300-500 for men
 - ▶ Testosterone – consider treating in the lower 20% of the normal range



H

Menopause

- ▶ For some women, pain increases at menopause, and HRT may decrease this effect
- ▶ Consider HRT if symptoms worsen in premenstrual period, if there has been TL or hysterectomy



Clinical Pearl

Chronic Infection and Pain

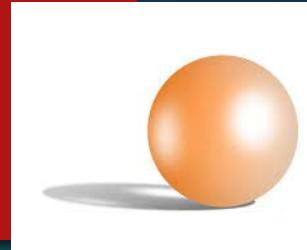
- ▶ Viral infections
 - ▶ Hepatitis C
 - ▶ Possibly XMRV, EBV, etc.
- ▶ Chronic bacterial infection
 - ▶ Mycoplasma and Chlamydia pneumoniae
 - ▶ Gut dysbiosis and spondylarthropathy
 - ▶ SIBO associated with diffuse pain
- ▶ Yeast overgrowth

Another subject for a talk all its own. . .



N Diet as a “tack”

Elimination Diet – another pearl



- ▶ Food Sensitivities - a factor in 40-50% of patients with fibromyalgia and rheumatoid arthritis.

- ▶ Consider elimination diet, celiac test
- ▶ Elevated GI meals assoc with inc. CRP
- ▶ Particular attention to glutamate agonists:

▶MSG

▶Aspartame

- ▶ Living Foods Diet –8+ clinical trials in FM, RA

- ▶ Whole foods (loads of fruits and veggies) with minimal or no animal products, no processed grains or oils, no sugar.

- ▶ Nightshades (eggplant, tomato, peppers, potatoes) –
 - ▶ little data to support this, but lots of great anecdotes

Clin Rheumatol. 1991 Dec;10(4):401-7. Diet and disease symptoms in rheumatic diseases--results of a questionnaire based survey.Haugen M, Kjeldsen-Kragh J, Nordvag BY, Forre O.

BMC Complement Altern Med. 2001; 1: 7

Plant Foods Hum Nutr. 1993 Jan;43(1):55-61
Scandinavian Journal of Rheumatology
Volume 29, Number 5 / October 27, 2000
Bangladesh Med Res Counc Bull. 2000
Aug;26(2):41-7.
Toxicology. 2000 Nov 30;155(1-3):45-53.



Nutrition Interventions in Low-Income Populations

- ▶ Changing food choices
- ▶ Not the “organic” version of oreos and other highly processed foods

Cost of Eating: Whole Foods Versus Convenience Foods in a Low-income Model

Andrew J. McDermott, ENS, MC, USN; Mark B. Stephens, MD, CAPT, MC, USN

Background and Objectives: Financial limitations in low-income populations, those at highest risk for poor health outcomes, may preclude adherence to recommended dietary guidelines. We examine the financial burden of shopping for foods to meet national dietary recommendations in a supermarket compared to eating primarily in a fast-food restaurant. Methods: Using a single-parent, low-income model, we obtained whole food costs (healthy) from local supermarkets and from fast-food outlets (convenient). Using cost per calorie as a metric for comparison, we used estimated single-parent, low-income living expenses to determine the relative costs of meeting national dietary guidelines. Results: Average food costs for healthy and convenience diets accounted for 18% and 37% of income, respectively. Dairy products and vegetables accounted for the largest cost percentages of diet costs (36% and 28%, respectively). The cost per calorie of a convenience diet was 24% higher than the healthy diet. Both models resulted in net financial loss over the course of a year for a single-parent, low-income family. Conclusions: Food costs represent a significant proportion of annual income. Diets based heavily on foods from convenient sources are less healthy and more expensive than a well-planned menu from budget foods available from large supermarket chains.

(Fam Med 2010;42(4):280-4.)

The Cost per calorie of the convenience diet was 24% higher than the healthy diet



- Dietary cost did not change at 6 months, but significantly decreased from baseline to 1 year

A cost-analysis of adopting a healthful diet in a family-based obesity treatment program

HOLLIE A. RAYNOR, MS, RD; COLLEEN K. KILANOWSKI, MS; IRINA ESTERLIS; LEONARD H. EPSTEIN, PhD

ABSTRACT

Objective To assess dietary costs during a family-based pediatric obesity intervention.

Design Families were randomized to one of two groups. Dietary and cost data were collected from a parent or child using three 24-hour recalls: at baseline, 6 months, and 12 months.

Subjects Thirty-one families with an obese 8- to 12-year-old child entered treatment, with complete dietary data provided from 20 families.

Intervention The 20-week behavior modification intervention emphasized increasing diet nutrient-density. Families attended group and individual sessions or group sessions.

Main outcome measures Energy intake; percent of energy from protein, fat, and carbohydrate; servings and percent servings from food groups classified by nutrient density; and daily food costs.

Statistical analyses performed Mixed analyses of variance, with group as the between-subject factor, and time as the within-subject factor.

Results No significant effect of group was found in any analyses. Significant decreases in percent overweight were observed at 6 and 12 months for children (-10.0 ± 8.7 and -8.0 ± 10.3 , respectively) (mean \pm standard deviation) and parents (-6.7 ± 10.3 and -5.3 ± 14.1). Energy intake for parents and children combined significantly decreased from baseline ($1,881 \pm 462$) to 6 months ($1,412 \pm 284$), and 1 year ($1,338 \pm 444$). Servings from low-nutrient-dense foods significantly decreased from baseline (34.7 ± 16.2) to 6 months (16.0 ± 8.6) and 1 year (18.6 ± 9.2), causing a significant increase in diet nutrient density. Dietary cost did not change at 6 months, but significantly decreased from baseline to 1 year ($\$6.77 \pm 2.41$ to $\$5.04 \pm 1.80$). Cost per 1,000 kcal did not significantly change.

Applications/Conclusions Adopting a lower-energy

Research has found that a healthful balanced diet is associated with reduced risk of morbidity and mortality, particularly from coronary heart disease and cancer (1-3). However, despite current government recommendations to reduce the amount of fat and to increase servings of fruits and vegetables in the diet (4,5), most Americans continue to consume a diet high in fat (6,7) and to eat fewer than 5 servings a day of fruits and vegetables (8-10).

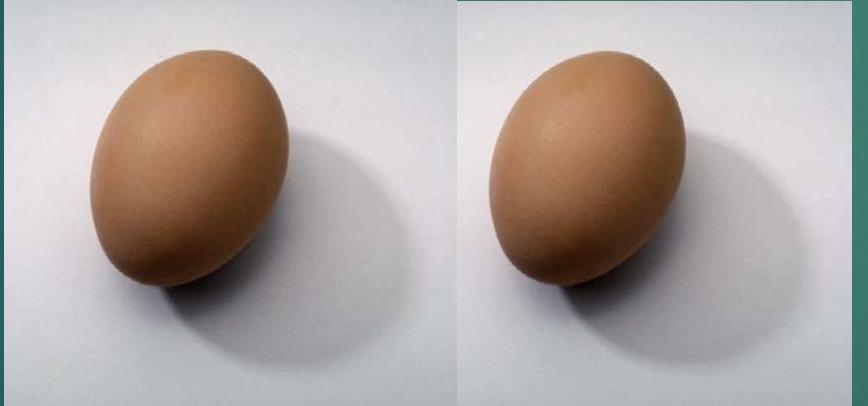
Factors influencing food choices include nutrition knowledge, sensory preferences, cost, availability of foods, and cultural practices (11-19). Sensory characteristics (eg, taste, quality, and freshness) and cost of food seem to be the most influential factors on food choice (14,17,20). These factors may become barriers to adopting healthful diets because consumers believe that a healthful diet is more expensive and has poorer taste than their usual diet (12,14,21).

Minimal research has been conducted to determine if the cost of a healthful diet significantly differs from that of the standard American diet. Two European studies (11,22) have found that a more healthful diet is more expensive than a more traditional diet. Cade and colleagues (11) found the dietary costs were more for women from the UK Women's Cohort Study who most closely followed the WHO dietary recommendations than for women who rarely followed the dietary recommendations. The main factor causing the increase in dietary cost was fruit and vegetable expenditure.

H. A. Raynor is a doctoral student in clinical psychology at the University at Buffalo, New York. C. K. Kilanowski is a project coordinator, and I. Esterlis, during the study, was a research support specialist with the Division of Behavioral Medicine in the Department of Pediatrics at the University at Buffalo, New York. I. Esterlis is currently a doctoral student in psychology at the University of Connecticut at Storrs. L. H. Epstein is a professor in the Departments of Pediatrics, Social and Preventive Medicine, and Pathology at the



Proteins



Eggs
\$0.06/ounce



Dried Beans
\$0.06/ounce



Boneless skinless chicken breast
\$0.17/ounce
Sirloin steak \$0.35/ounce
Deli meat \$0.57/ounce





The Beautiful Bean

	Cost/ serving	Calorie s	Fat	Protein	Fiber
Black Beans	\$0.16	140	0g	18g	30g
Extra lean ground beef	\$0.62	256	19g	21 g	0g



Even better -

- ▶ Have them figure it out themselves

Produce:

List:

3 dark-green leafy vegetables			
3 deep-yellow or orange fruits or veggies (incl. deep yellow under a peel or skin)			
3 fruits/vegetables your family usually eat			
3 fruits/vegetables you have never seen before today			
3 produce items that are "packaged" in a way that makes them ready to eat now			
3 good deals in fruits/vegetables your family would eat/ you would like to try soon			
Carrots	Cost/lb carrots	Cost/lb baby carrots	
Spinach	Cost/oz fresh/washed	Cost/oz frozen	Cost/oz canned

Protein:

	Protein	Fat	Calories	Fiber	Cost per (container/amt)	Cost per serving
2 eggs	12g	9g	140 kcal		_____ /dozen	
Ground beef (27% fat) 3 ounces	13.2g	21g	246 kcal			
X-Lean Grd. beef (15% fat) 3 ounces	15.6g	12.6g	181 kcal			
Dried kidney beans 1 C cooked	13.8g	0.6g	210 cal	9.3g	_____ /lb	(0.13 x cost per pound)
Canned kidney beans 1C	13g	1.5g	210	11g	_____ /____ oz	
Lentils 1C cooked	16.4 g	13.25g	323	14.5g		(0.2 x cost per pound)

Supporting Diet change

- ▶ Mindful eating exercise
- ▶ Recipe books – we hand one out to our pain patients
- ▶ Lending library materials
 - ▶ Novick's Fast Food
 - ▶ The Sneaky Chef
 - ▶ Smoothie recipes
 - ▶ Good and Cheap
 - ▶ EWG
- ▶ Groups –
 - ▶ Consider bringing some unfamiliar foods to share
 - ▶ Food preparation as a group
 - ▶ Invite patients to share their favorite new healthy recipes
 - ▶ We actually have check-in questions about what is your favorite purple food, what new recipe have you tried since last group
 - ▶ Develop a repertoire for patients with limited cooking facilities

Recipes from our Pain Program

at has been shown to be helpful in fibromyalgia, rheumatoid arthriti conditions is a vegetarian diet eliminating processed grains, processed dairy and meat), and rich in fruits, vegetables, nuts and seeds.

Low Glycemic Breakfast Ideas

Fruit and a hard-boiled egg

Non-sweetened yogurt and fruit

Beans, salsa and a corn tortilla

Oatmeal (regular, not instant)

Leftover veggies and protein(meat, tofu) from dinner

Smoothie made with fruit, soy or cow milk, with flaxseeds or other fiber source
Westsoy organic unsweetened soymilk is probably best

Healthy Smoothie* Serves 1

Into blender place:
1 cup liquid

water; almond, rice, soy, coconut or
or diluted 100% juice (1/4 cup juice +
Herbal teas may also be used: nettle,
green tea and others as indicated

1-2 scoop protein powder
(aim for 15-25 gm protein)

whey, rice, pea, egg white, organic
hemp (please use a vegetable source if
living with cancer.) You may also use
food from our office for specific health
PureClear, MediClear, UltraInflamm

1/2 -1 cup no-sugar-added
fresh or frozen fruit

If using fresh fruit, add ice cubes to
slushy. Berries are best for the anti-
benefit and small amounts of peach
mango mixed in can add flavor and

Greens – 1/4 cup frozen or a
Generous handful if fresh

Frozen spinach will blend in with no
change, but kale would be even healthier

1 Tbs. ground or milled
flax seed or flax oil

Ideally, grind a small amount of flax
a time in a coffee or spice grinder, and
frozen until use.

N

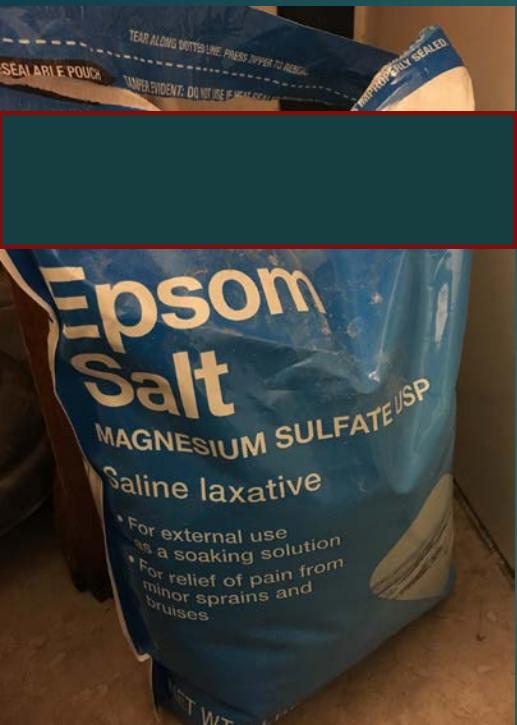
Nutrition and Pain

- ▶ Remove Dietary Tacks
- ▶ Improve Dietary Quality
- ▶ Supply nutrients for healing:
 - ▶ Protein
 - ▶ Zinc
 - ▶ Vitamin C and bioflavonoids
 - ▶ Specific nutritional supplements – more later if time allows
- ▶ Address gut issues



Supplements for the Underserved

- ▶ Alternatives to/low cost versions of supplements:
 - ▶ Fermented foods (yogurt and kefir recipes, Cultures for Health)
 - ▶ Red Star baking yeast as a source of *Saccharomyces Cerevisiae* $\frac{1}{4}$ tsp bid
 - ▶ *Saccharomyces boulardii* is a subspecies of *boulardii*
 - ▶ *Cerevesiae* is GRAS (Generally Regarded as safe)
 - ▶ My clinical experience with it has been great
 - ▶ Epsom salts for magnesium (starting dose $\frac{1}{4}$ tsp)
 - ▶ Bone broth for hydrolyzed collagen, bone and joint health as well as the gut
 - ▶ Turmeric "tea" with ginger and black pepper
 - ▶ Sardines
 - ▶ Wildcrafted herbs – plantain, nettles, cleavers
 - ▶ Apple cider vinegar



Supplements for the Underserved

RX

- ▶ Some things can be prescribed (sometimes covered)
 - ▶ Leucovorin
 - ▶ Carnitine
 - ▶ Pancreatic enzymes
 - ▶ Cholecalciferol (or ergo)
 - ▶ Lovaza/Max EPA
 - ▶ ?CoQ10
 - ▶ VSL#3



Supplements for the Underserved

- ▶ Low cost sources of supplements
 - ▶ Vitacost.com, Swanson
 - ▶ Specific products as reviewed by consumerlab.com

CONSUMERLAB.COM RESULTS FOR CoQ10 AND UBIQUINOL SUPPLEMENTS					
Click on \$ Price Check beneath a product name to find a vendor that sells it. To find retailers that sell some of the listed products click here.					
Amount of CoQ10 or Ubiquinol Per Unit, Suggested Daily Serving on Label Click on "Ingredients" for Full Listing	Labeled Amount of CoQ10 or Ubiquinol Per Daily Serving	--TEST RESULTS-- (See How Products Were Evaluated)			Cost for Daily Suggested Serving on Label [Cost per 100 mg CoQ10 or Ubiquinol] Other Notable Ingredients/Features ¹ Price Paid
		OVERALL RESULTS: APPROVED or NOT APPROVED	Contained Claimed Amount of CoQ10 or Ubiquinol	Did Not Exceed Contamination Limits for Idebenone	
softgel, once daily)					[\$0.55] In Oil Vitamins A & E \$16.59/30 softgels
	50 mg to 100 mg	APPROVED	✓	✓	\$0.07-\$0.13 [\$0.13] Lowest cost for CoQ10 from low/variable-

Supplements for the Underserved

- ▶ Carry and dispense supplements in the office
 - ▶ Many manufacturers will sell to practitioners at 50% off suggested price
 - ▶ We can pass those savings to patients (add nominal markup to cover staff time)
 - ▶ We can split bottles for short-term needs or samples
 - ▶ Betaine HCl samples to see if patients can tolerate
 - ▶ Mediclear samples to see if brain fog clears
 - ▶ Bromelain in small quantities for sprains or sinusitis
 - ▶ Essential oil thyme/eucalyptus in tiny dropper bottles
 - ▶ “Cold care kit” – shorter supplies of multiple items



DIY compounding

- ▶ Topical turmeric with occlusion
- ▶ Capsaicin recipes
- ▶ Lidocaine with voltaren, gabapentin capsules for topical pain treatment
- ▶ LDN (low dose naltrexone) from crushing naltrexone tabs
- ▶ Vit C in lecithin – liposomal, jewelry polisher



E Why Exercise?

- ▶ Decrease pain
 - ▶ Transient elevation in pain thresholds.

● Not directly rel. to plasma endorphin levels.

Med Sci Sports Exerc. 1991 Mar;23(3):334-42

- ▶ Increase ability to participate in life
 - ▶ Increase in expectancies of capability
 - ▶ Decrease in worry and concern about exercising.

Pain. 1986 Mar;24(3):365-72

- ▶ Anti-inflammatory
 - ▶ Decrease CRP with exercise *J Am Geriatr Soc.* 2004 Jul;52(7):1098-104.
Arterioscler Thromb Vasc Biol. 2003 Sep 1;23(9):1640-4.



Shrink the Pain Map by Flooding the Brain Using

Thoughts, Images, Sensations , Memories, Soothing Emotions, Movement and Beliefs

Get out of my amygdala

Movement – Imagine without pain

Prefrontal
Pain, Executive Function, Creativity, Planning, Empathy, Action, Emotional Balance, Intuition, Morality, Understanding

Shrink the map

Anterior Cingulate
Pain, Emotional Self-Control, Sympathetic Control, Problem Solving, Conflict Detection and Resolution

Supplementary Motor
Pain, Planned Movement, Mirror Neurons

Somatosensory 1 and 2
Pain, Touch, Temperature, Pressure, Position, Vibration, Proprioception

Do something pleasurable

Insula
Pain, Temperature, Itch, Empathy, Emotional Self-Awareness, Disgust, Pleasure, Quiets the Amygdala, Sensual Touch, Connects Emotion to Bodily Sensation, Mirror Neurons

Smell peppermint oil

Massage

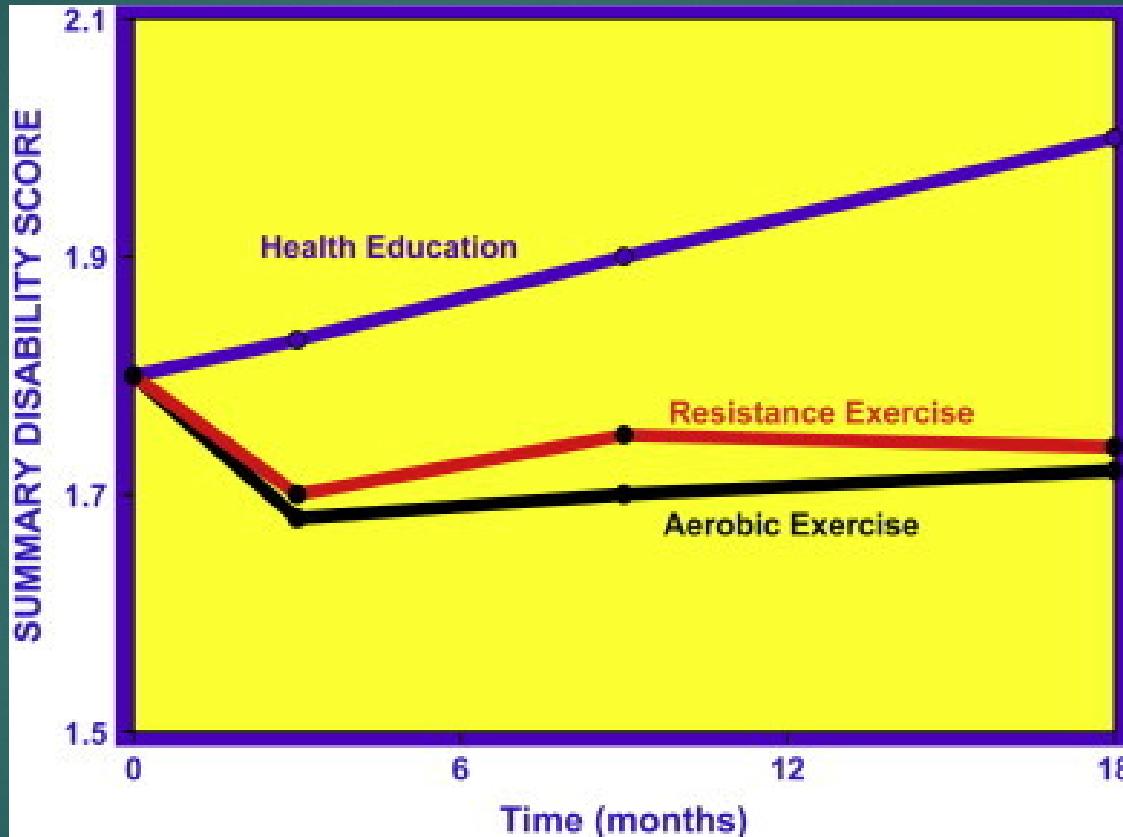
Imagery

Posterior Cingulate
Pain, Visual Spatial Cognition, Autobiographical Memory Retrieval

Remember how I felt before pain

Amygdala
Pain, Fight/Flight, Emotional Extremes, Pleasure, Sight, Scent, Emotional Response, Post Traumatic Stress

Arthritis in Seniors



The Fitness Arthritis and Seniors
Trial (FAST). JAMA
1997;277(1):29



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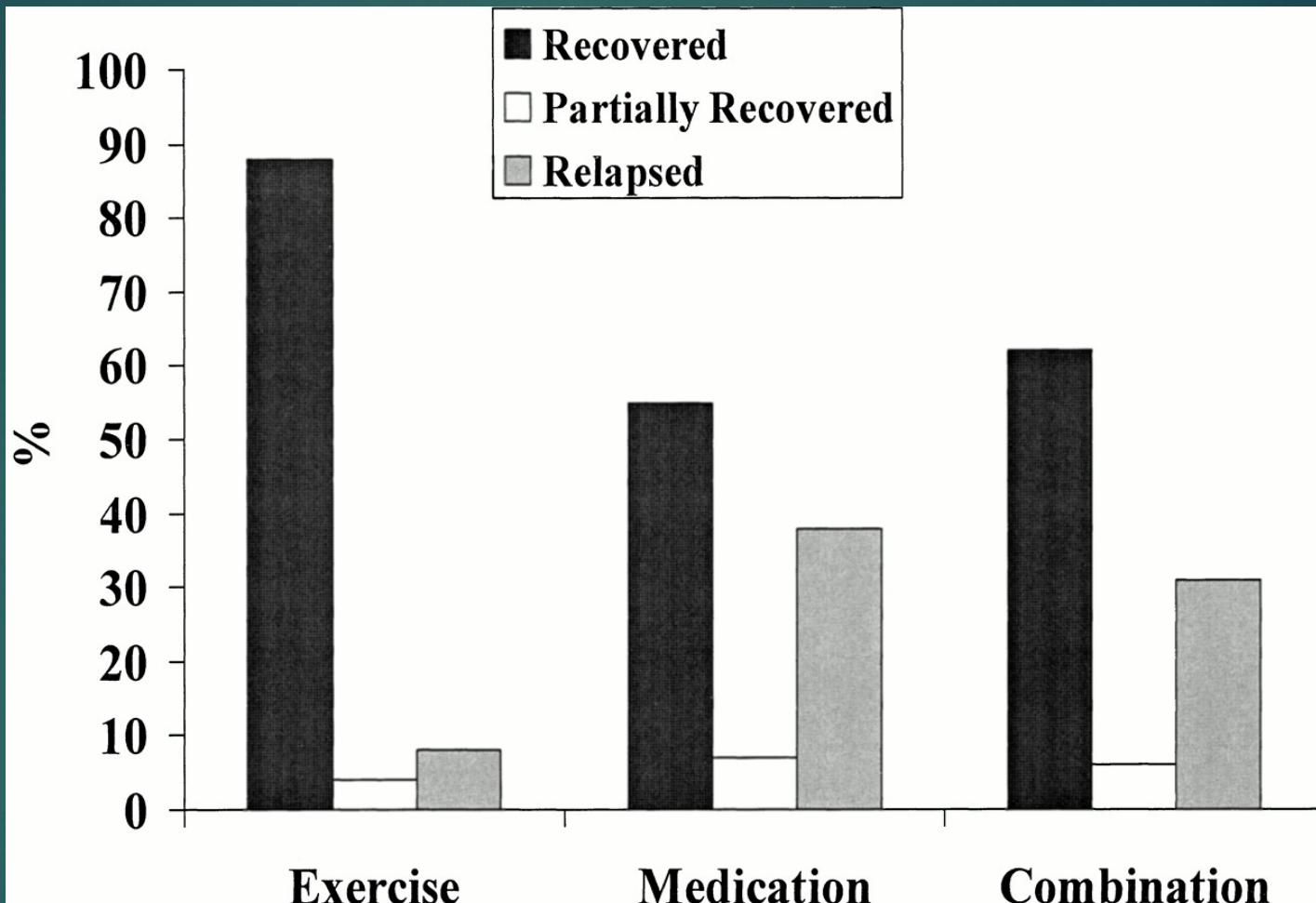
Which Conditions Benefit?

- ▶ Osteoarthritis JAMA. 1997 Jan 1;277(1):25-31, BMJ. 2002 October 5; 325(7367): 752
- ▶ Low Back Pain
 - ▶ 52% decrease in pain scores N Engl J Med. 1990 322(23):1627-34
 - ▶ 76% of pts benefit; >90% maintain benefit at 1 yr Orthopedics. 1995 Oct;18(10):971-81 Spine. 1997 Dec 15;22(24):2959-67 ; Spine. 1999 Dec 1;24(23):2435-48
- ▶ Rheumatoid Arthritis J Rheumatol. 1994 Apr;21(4):627-34.
- ▶ Fibromyalgia J Rheumatol. 1996 Jun;23(6):1050-3, Scand J Rheumatol. 1996;25(2):77-86

(Note benefits for depression, cognition as well)



Exercise and Depression

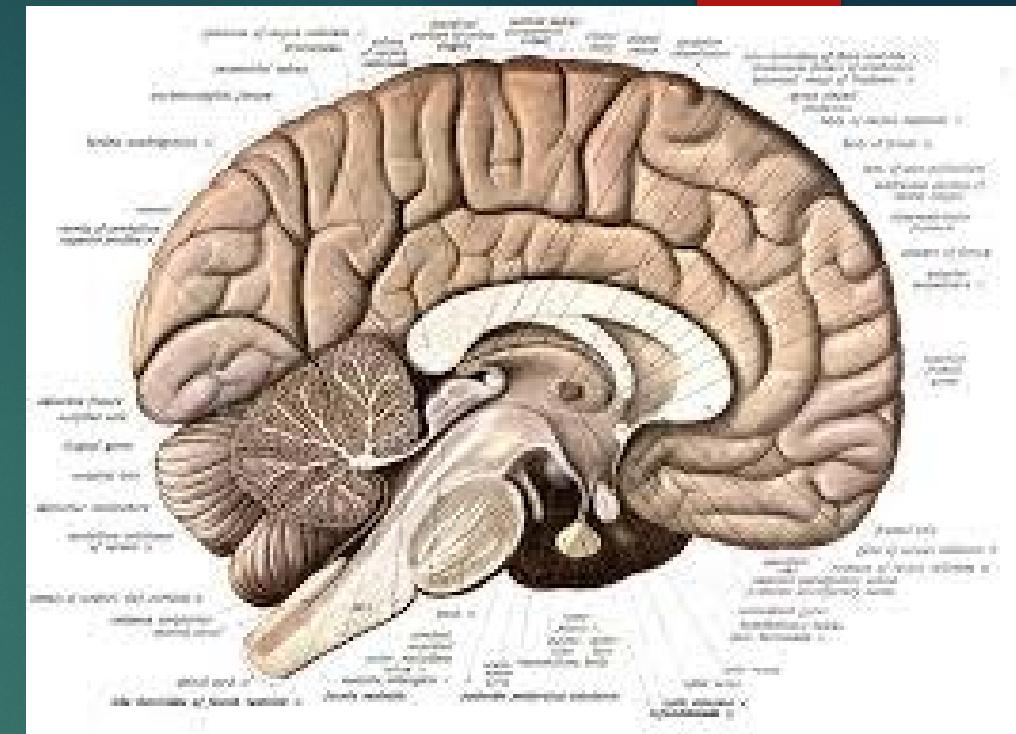


10 months after 4-month exercise intervention

Psychosomatic Medicine 62:633-638 (2000)



Exercise and Cognition



- ▶ Long-term regular physical activity, including walking, is associated with significantly better cognitive function and less cognitive decline in older women.
- ▶ JAMA. 2004;292:1454-1461



E

General Guidelines for Safe Exercise in People with Chronic Pain

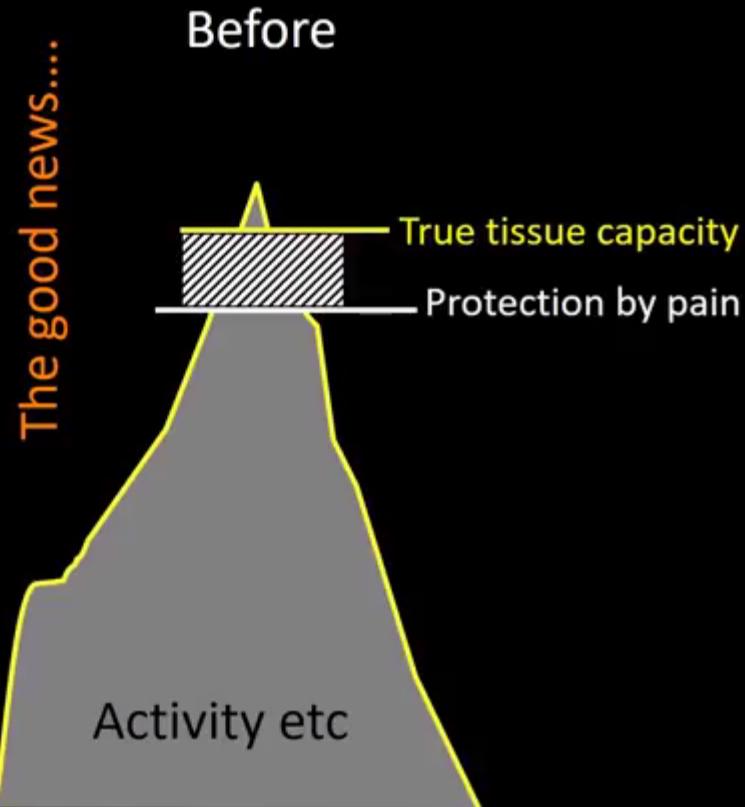
- ▶ Warm up before and stretch after exercise
 - ▶ Gentle stretches – no bouncing!
- ▶ Start Low, Go Slow
- ▶ Emphasize Concentric Exercise, avoid Eccentric Exercise



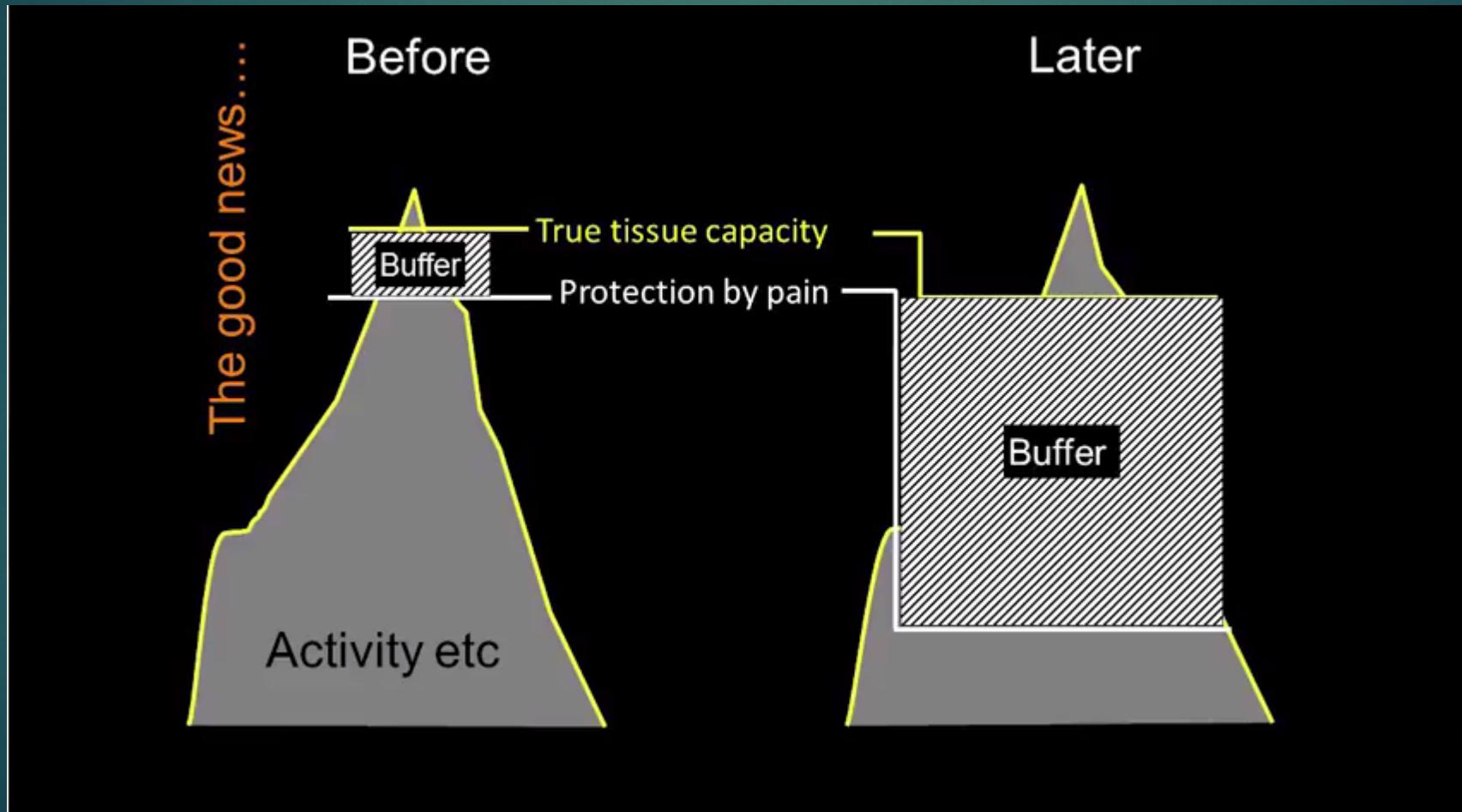
A side note on neuroplasticity and the fear of movement



Pain is protective



Chronic Pain: The system becomes way too protective



Movement

- ▶ Movement is not dangerous
- ▶ Imitate healthy pain free body if pain is asymmetrical
- ▶ Start with a movement enjoyed in the past, but only in limited way, building up repetitions over time
- ▶ Plan movement consciously to evoke Supplementary Motor Area
- ▶ Move to change the brain-body loop
- ▶ If pain prevents movement, think about and visualize moving without pain



Positive Metaphors – Antidotes!

- ▶ Motion is Lotion



Exercise Motivation and Adherence

- ▶ Solitary vs. Group vs. “Buddy”
- ▶ Keeping it interesting
 - ▶ Conversation
 - ▶ Books on tape
 - ▶ Moving meditation
 - ▶ Exercise equipment and television/VCR
- ▶ Goals and Challenges
 - ▶ Pedometers
 - ▶ FitBit



Pickleball
Zumba
Birdwatching



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Specific Forms of Exercise



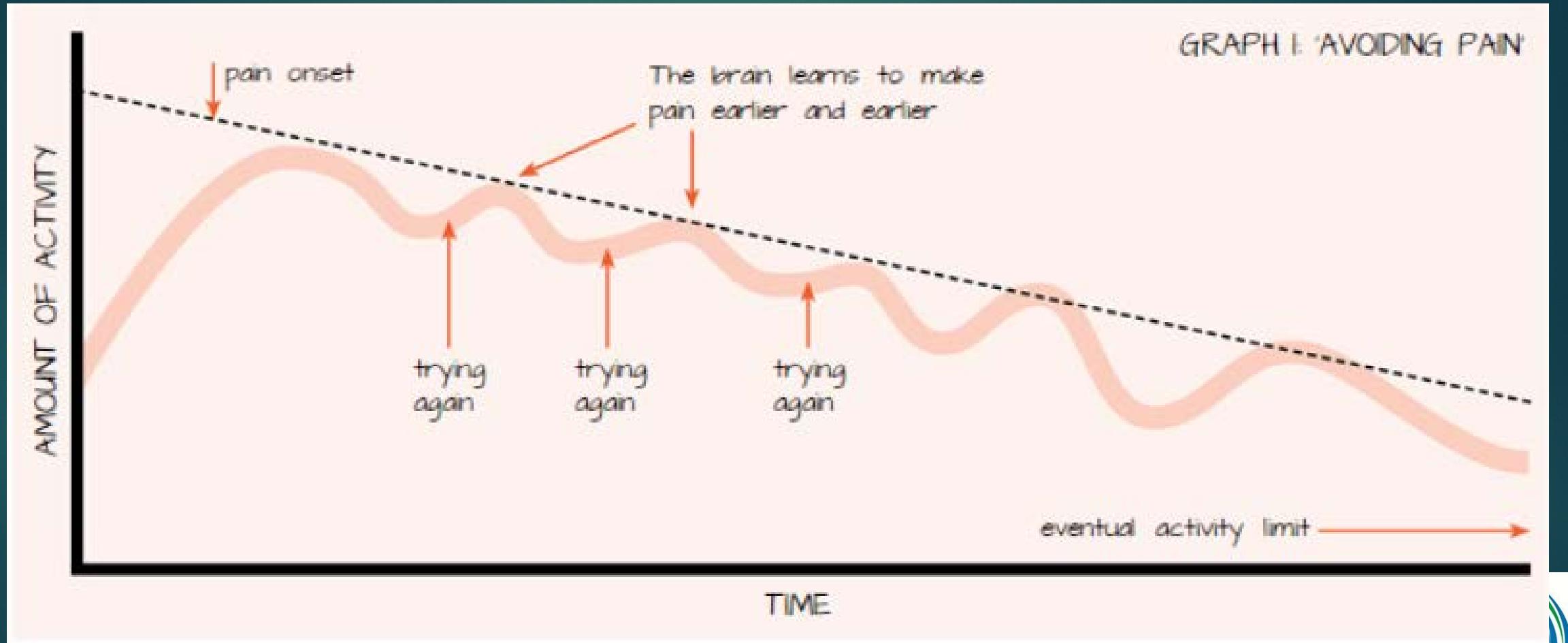
- ▶ Water Exercise
- ▶ Walking
- ▶ Low-impact
 - ▶ Elliptical Trainers
 - ▶ Nordic Track
- ▶ Particular studies in
 - ▶ Yoga Pain. 2010 Nov;151(2):530-9 and many more
 - ▶ Tai chi Arthritis Rheum., 2009. 61(1): p. 717-24
- ▶ The Healer Within by Jahnke



Talking about moderation. . .

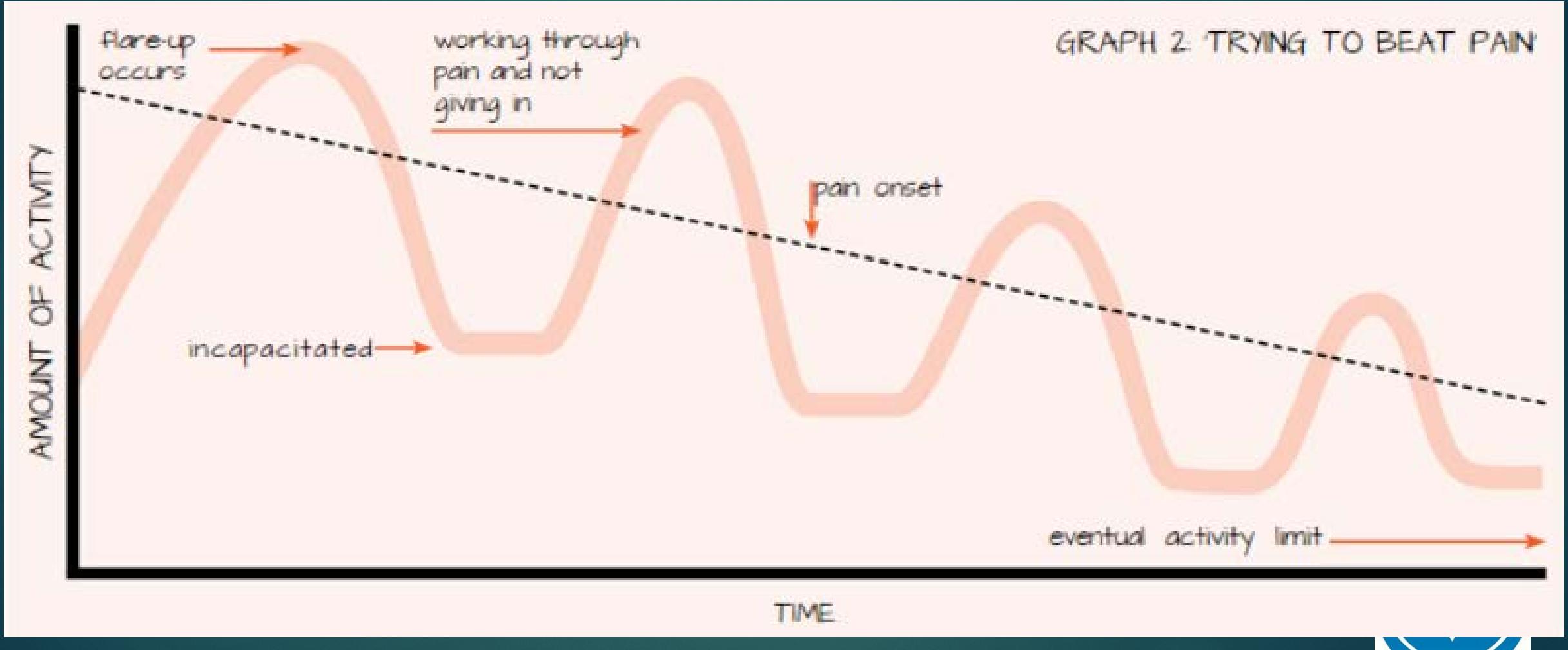


Let pain be your guide





No Pain, No Gain





The road less travelled

- ▶ Understand pain so that you don't fear it



Movement

- ▶ Movement gradually suppresses the pain system
- ▶ Movement helps you learn
- ▶ Movement protects you against other problems
- ▶ Movement is the best way to recover
- ▶ Even imagining movement is helpful.



SHINE-MT – a useful mnemonic

For T's and M's in the ATM

- ▶ Sleep
- ▶ Hormones
- ▶ Infection
- ▶ Nutrition
- ▶ Exercise

- ▶ Toxicity – See my presentations on toxins and pain

- ▶ Mindbody



Toxins

- ▶ Endotoxins
 - ▶ End products of metabolism
 - ▶ Bacterial endotoxins
- ▶ Exotoxins
 - ▶ Drugs (prescription, OTC, recreational)
 - ▶ Agricultural chemicals
 - ▶ Food additives
 - ▶ Household
 - ▶ Pollutants/contaminants
 - ▶ Microbial



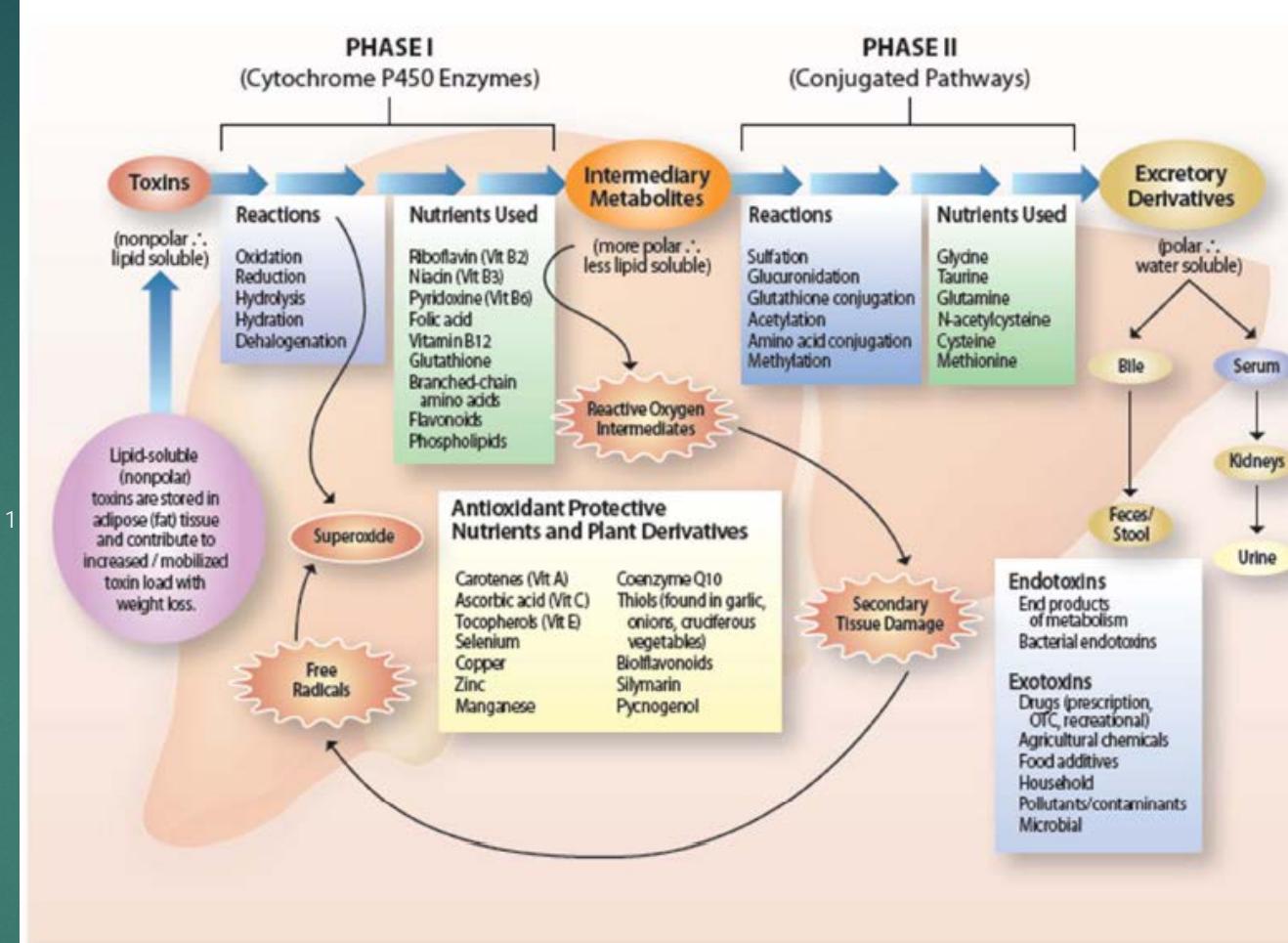
And in relation to pain:

- ▶ CFS/Fibromyalgia:
 - ▶ Arsenic, Benzene, Cd, EMR, FA, Pb, Hg, Mold
 - ▶ Ni, PCE, POPs, PCBs, Solvents, PVC, Dioxin
- ▶ Peripheral Neuropathy
 - ▶ As, Pb, Hg, PCBs
- ▶ Tobacco
 - ▶ Associated with chronic back pain
- ▶ Environmental obesogens



Treatment

- ▶ Avoidance!
 - ▶ Patient Education
- ▶ Detox support - Human and Experimental Toxicology 30(1) 3–18, 2011
 - ▶ Dietary
 - ▶ Fiber
 - ▶ Sulfur, crucifers, protein, antioxidants
 - ▶ Nutritional support
 - ▶ NAC
 - ▶ Combination detox products
 - ▶ Sauna/sweating
 - ▶ *Toxicology & Industrial Health.* Sep2012, Vol. 28 Issue 8, p758-768. – Meth exposure and chronic illness in police officers improved with sauna



SHINE-MT – a useful mnemonic

For T's and M's in the ATM

- ▶ Sleep
- ▶ Hormones
- ▶ Infection
- ▶ Nutrition
- ▶ Exercise

- ▶ Toxicity
- ▶ Mindbody – this will be explored on multiple levels



Stretch Break



Pain **may** be mandatory, but suffering is optional

- ▶ Functional Approach to Chronic Pain
 - ▶ Addressing the sources of pain
 - ▶ Addressing the perception of pain
 - ▶ Addressing the suffering associated with pain

The definition of Healing may be different for different people, but there are opportunities for intervention at each of these levels



How Powerful is the Mind?

- ▶ Warning: this is a trigger for many patients
 - ▶ “It’s all in your head”
- ▶ Examples I use with patients:
 - ▶ Paralysis
 - ▶ Cardiogenic Shock
 - ▶ Death
 - ▶ Contagious
 - ▶ Hallucinations



Moseley video - check out his TED talk

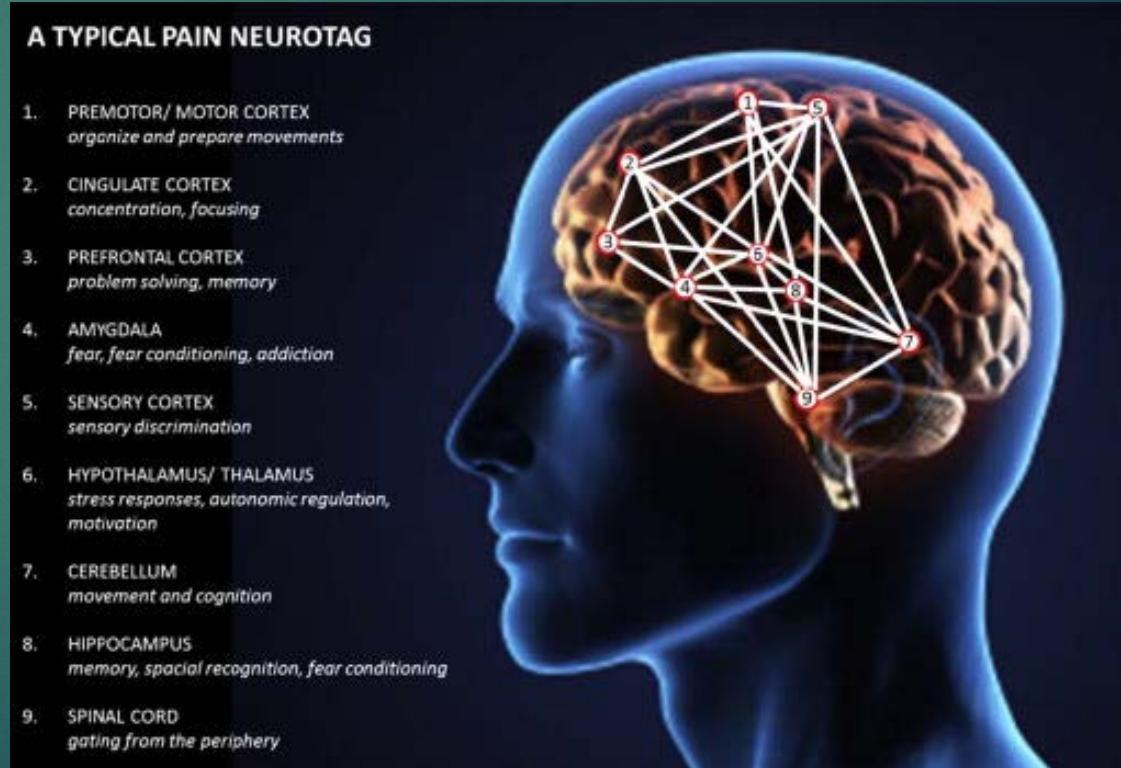


Pain = physical sensation + CONTEXT

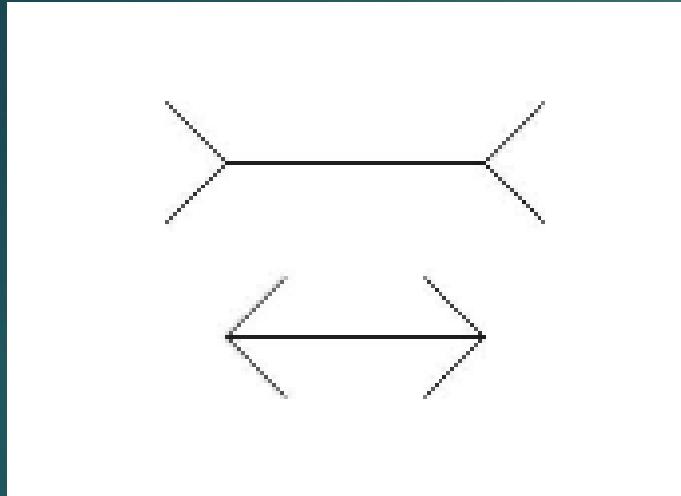
► The old idea



► The Neurotag idea



Visual Illusion as a way to explain this without the stigma



- ▶ Lines of the same length look different

- ▶ I use the videos from
<http://www.michaelbach.de/ot/>
- ▶ There is no stigma associated with visual illusion, we are just fascinated – “Why does this happen?”
 - ▶ Answer: Context – the brain is interpreting every sensation to make sense of it, to tell us what we need to DO



Modulating Pain Perception



Imagine. . .



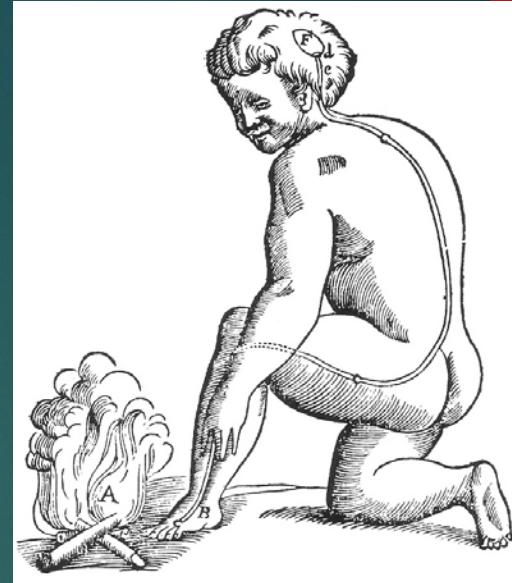
- ▶ The brain has messages coming in and has caller ID.
 - ▶ It can screen calls
 - ▶ Some callers are filtered out altogether
 - ▶ Some callers are amplified

The messages reaching the brain depend not just on what is happening in the outside world, but also on how the messages are transmitted.

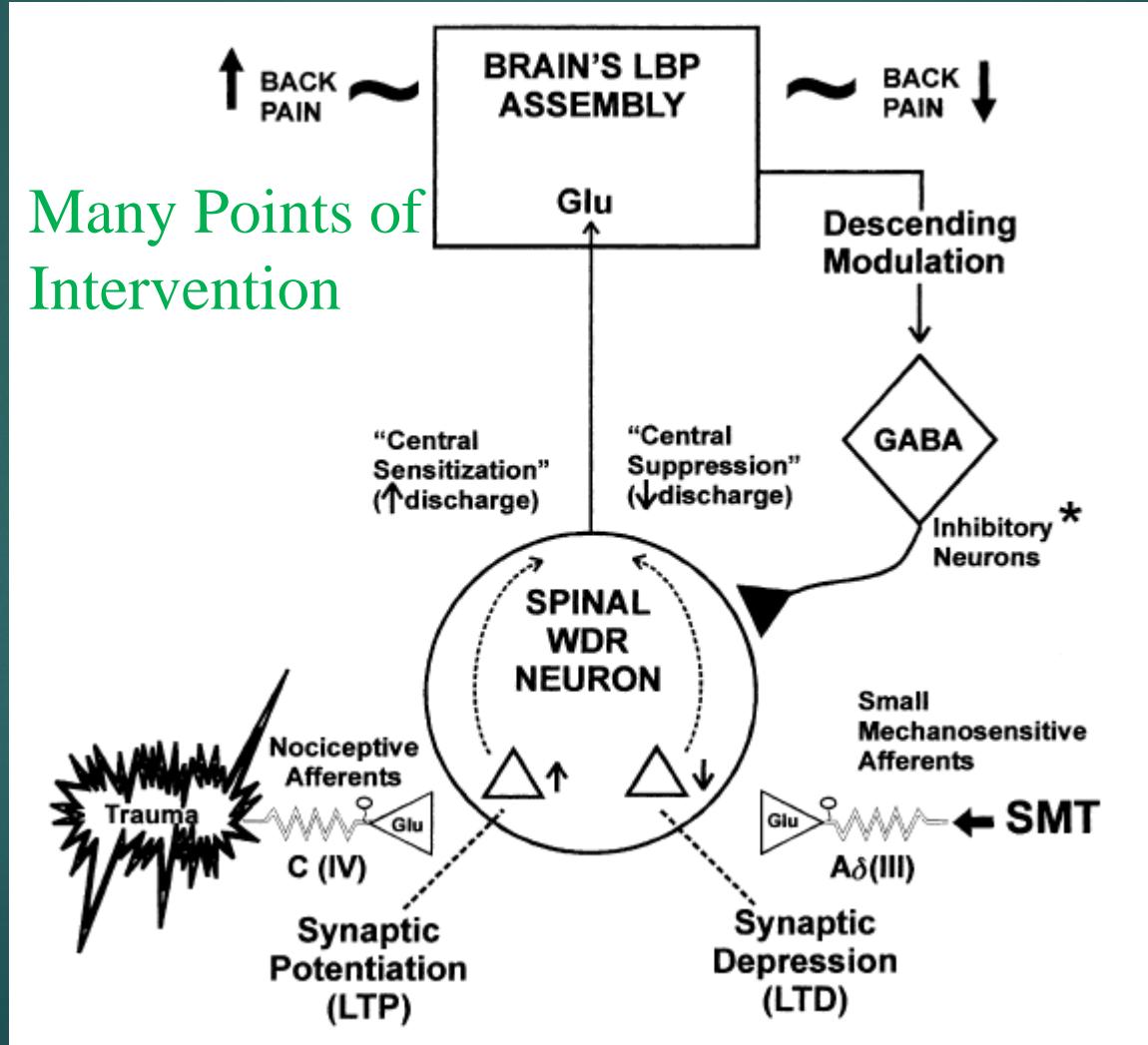


Pain Perception: Peripheral fibers

- ▶ Sensory Nerves
 - ▶ A-delta Fibers –
 - ▶ Myelinated, 40 mph,
 - ▶ Well-localized
 - ▶ Fatigue with repeated stimulation.
 - ▶ C Fibers –
 - ▶ Nonmyelinated,
 - ▶ Poorly localized.
 - ▶ Does not fatigue or extinguish with repeated stimulation.
 - ▶ Sensitization – chemical mediators from inflammation or injured tissue can sensitize small fibers, so that non-painful stimuli will be perceived as painful.

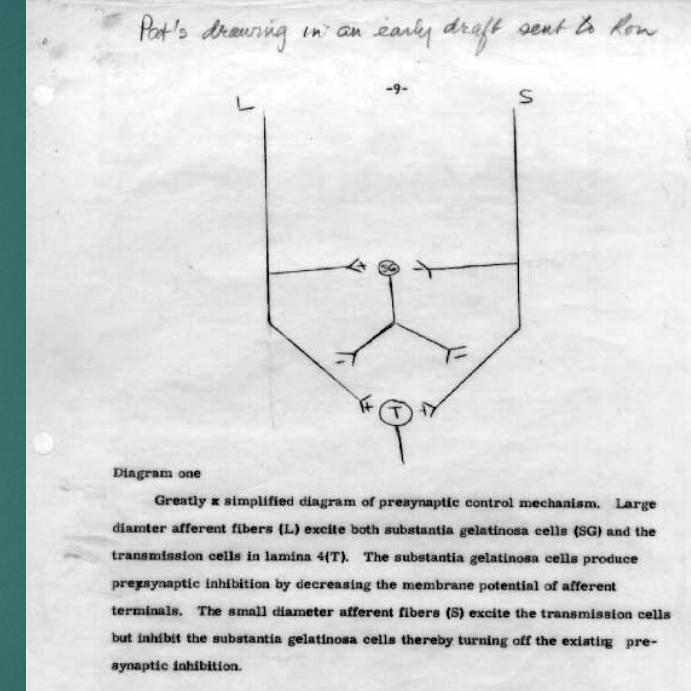
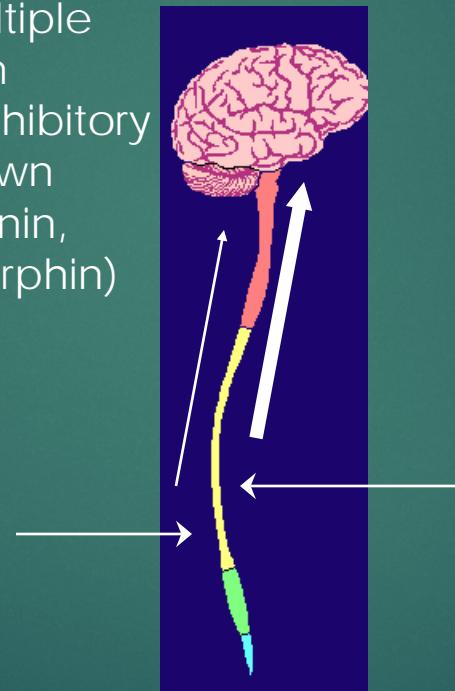


Pain Transmission Mechanism/Theory

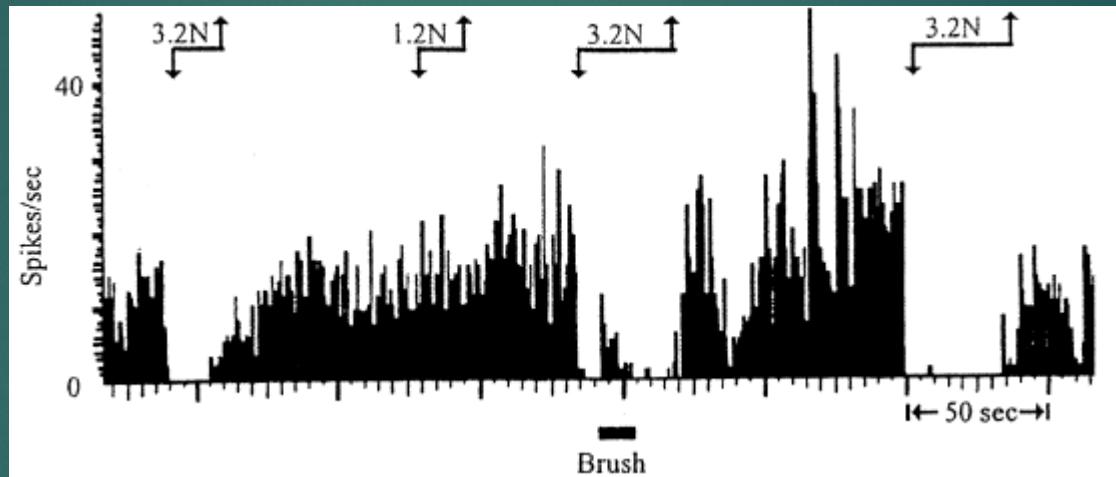


Pain Perception: Spinal Cord Modulation

- ▶ Spinal Cord
 - ▶ Modulation: Transmitting cells are influenced by multiple signals coming in from periphery as well as inhibitory messages coming down from the brain (serotonin, norepinephrine, endorphin)



Gate Control Implications: Mechanical Stimuli Can Decrease Pain Sensation



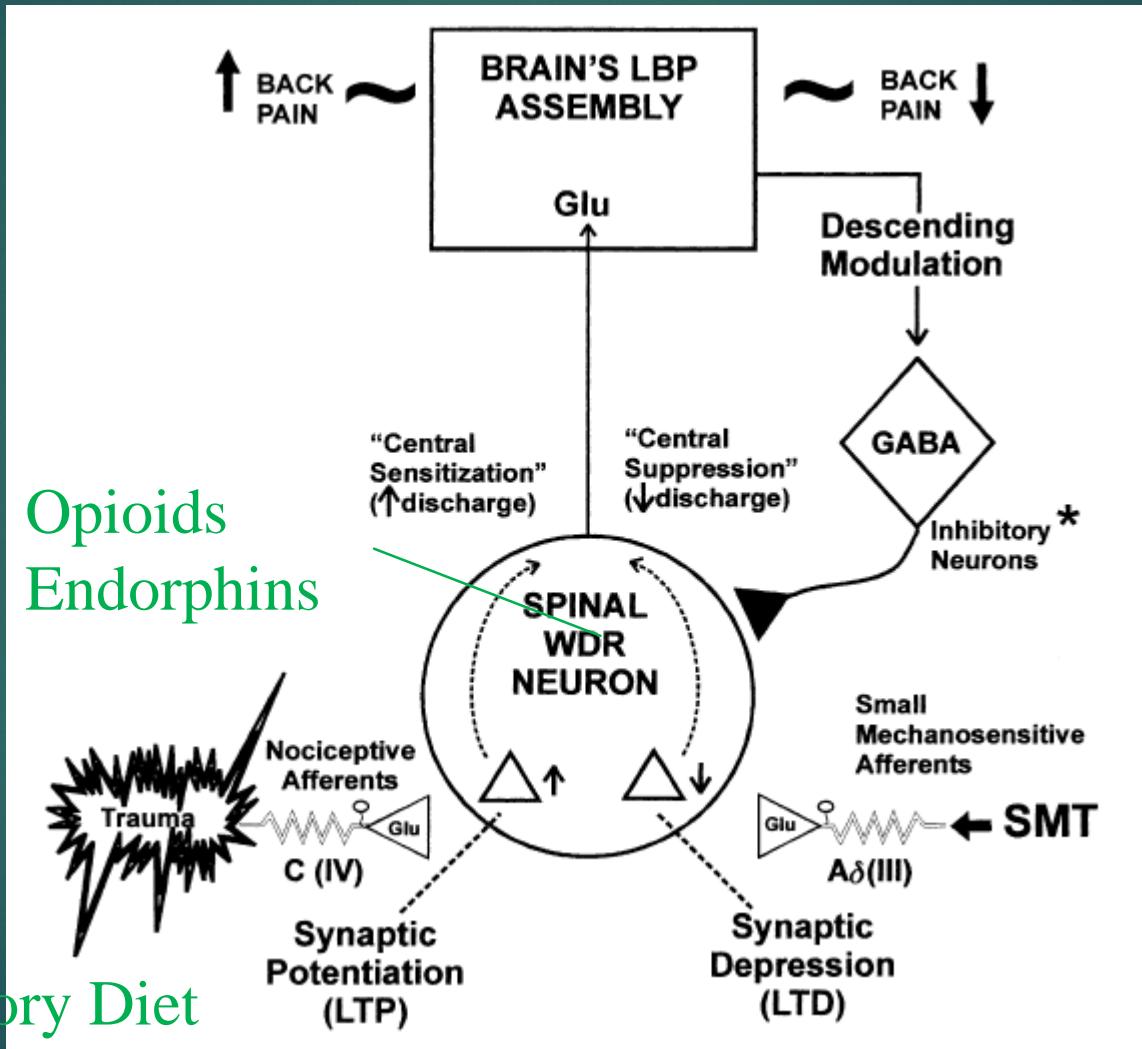
Chronically firing pain neurons can be “silenced”
by intense mechanical stimuli.

Boal RW, Gillette RG. Central neuronal plasticity, low back pain and spinal manipulative therapy.

J Manipulative Physiol Ther. 2004 Jun;27(5):314-26

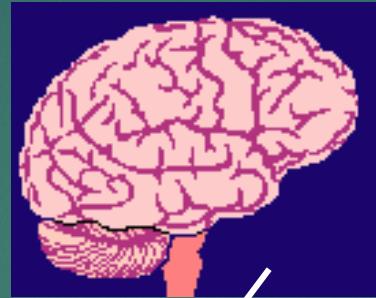


Pain Transmission Mechanism/Theory



Pain Perception: Central Modulation – The Brain

► Brain



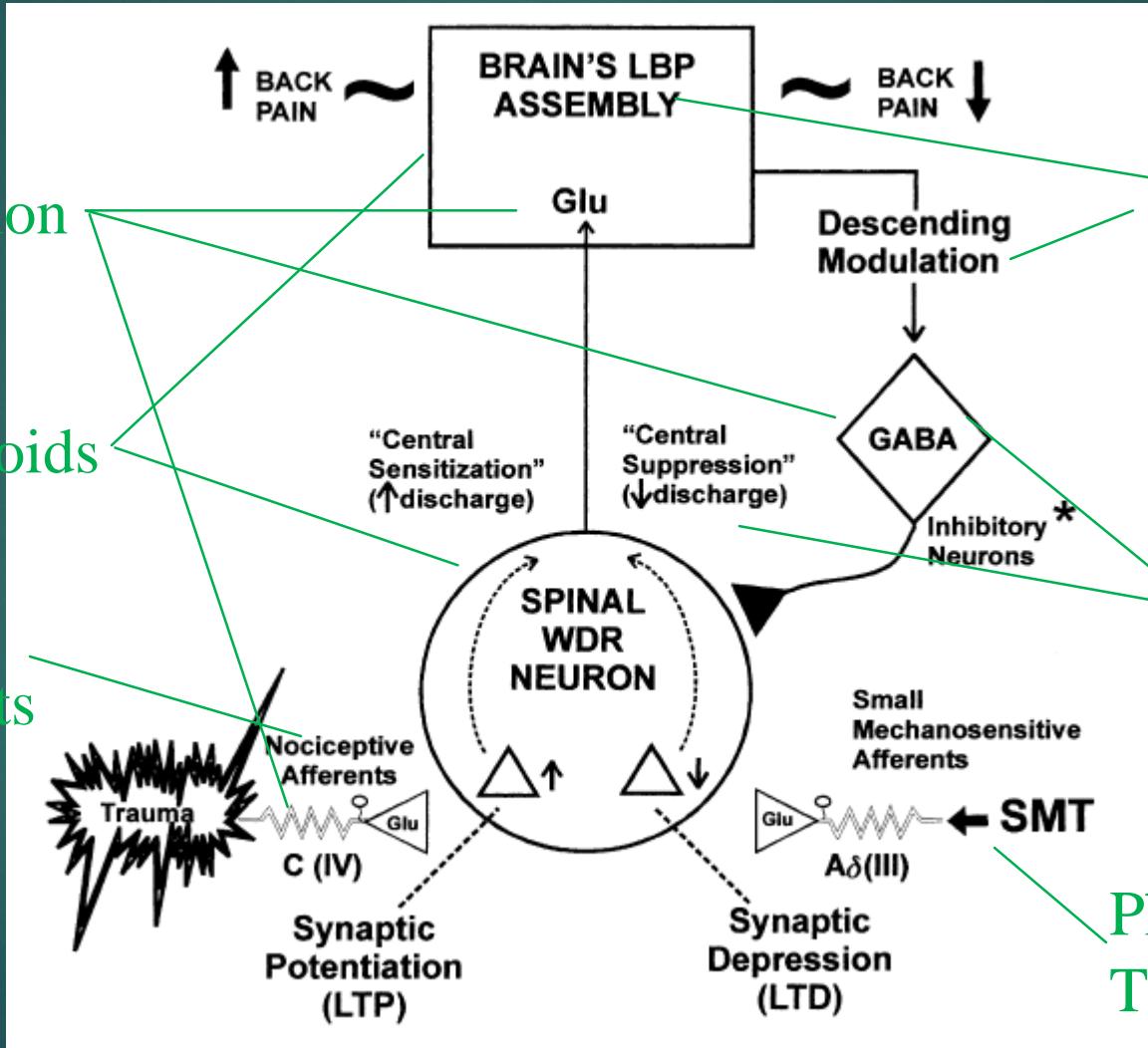
- Can tonically amplify or suppress the messages coming in from the periphery
- Gives **meaning** to the pain experience

- Differences in pain levels of victims of automobile accidents vs. those responsible for the accident
 - Perceived **Injustice** in Fibromyalgia Journal of Psychosomatic Research, 2012-08-01, Volume 73, Issue 2, Pages 86-91
 - Recalled Injustice amplifies even acute pain Eur J Pain 20 (2016) 1392--1401
 - Carolyn Myss insights, etc.
 - John Sarno and repressed anger (**put a pin in this**)



Pain Perception

Nutrition
Opioids
Topical treatments



Mind-Body Therapies

Adjunctive Medications

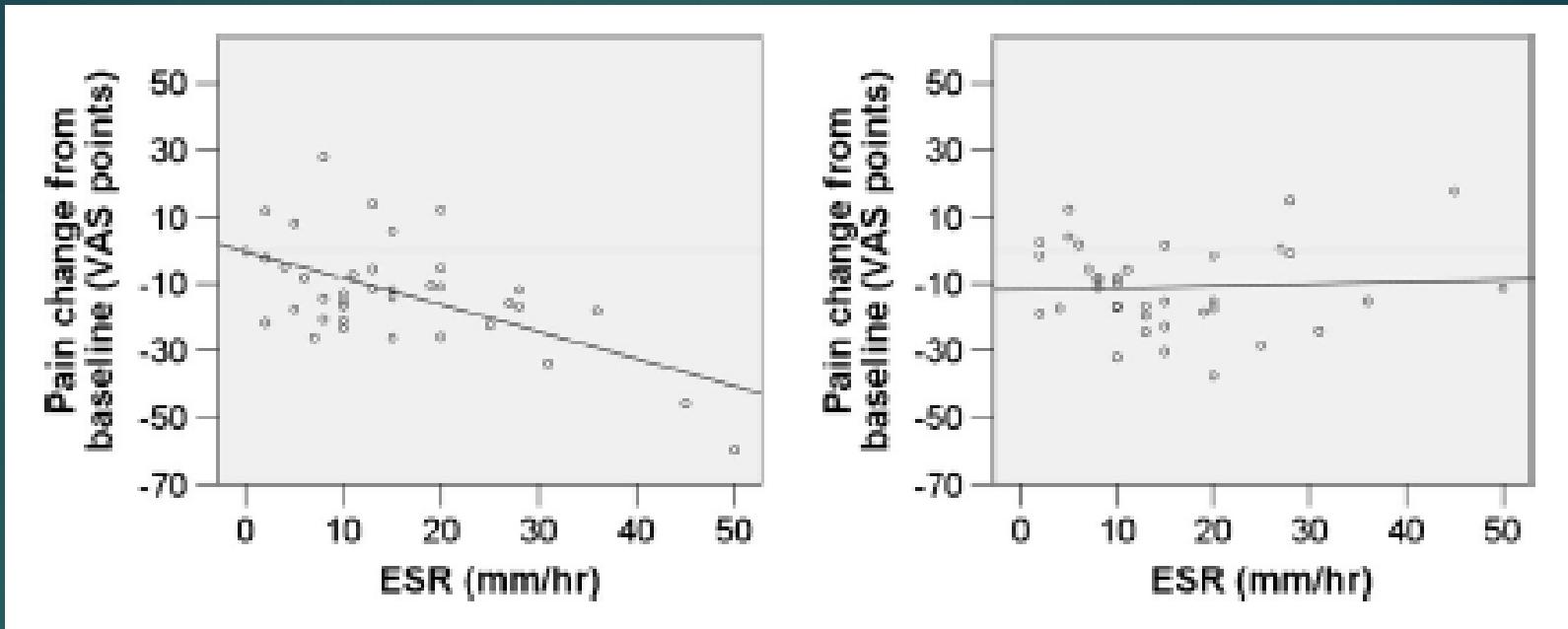
Physical Therapies



LDN – Low Dose Naltrexone

- ▶ Studied in Crohn's, Fibromyalgia
 - ▶ Claims made for MS and numerous other conditions
- ▶ Small transient opioid blockade
 - ▶ Rebound upregulation of endogenous opioids and opioid receptors
 - ▶ Decrease inflammation

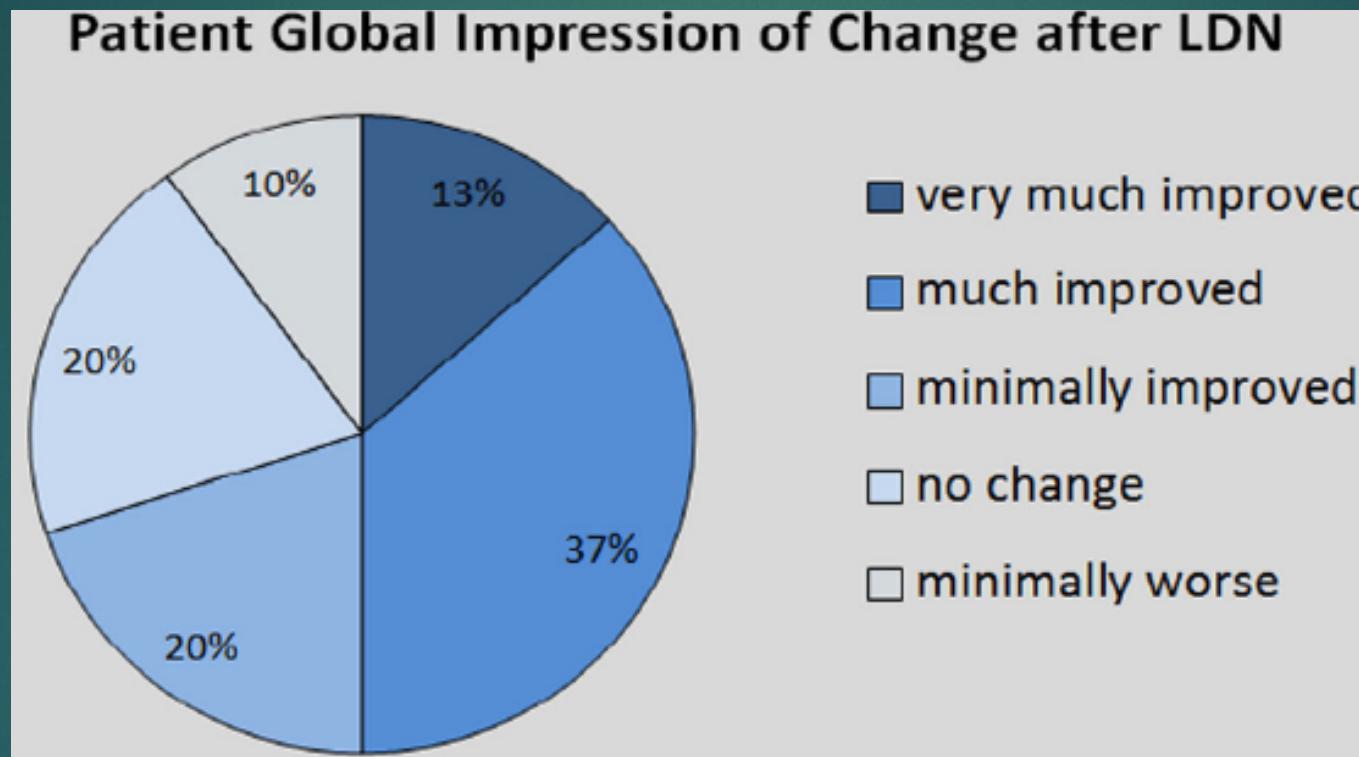




- Relationship between baseline ESR and change in pain on LDN
Clin Rheum 2014 33:451-459



LDN in Fibromyalgia



Adjunctive Medications

- ▶ Antidepressants
- ▶ Anticonvulsants
- ▶ Antiarrhythmic drugs
- ▶ Ultram



Antidepressants for Pain

- ▶ Work by affecting neurotransmitters
- ▶ Do not only work for treating pain by improving depression.
 - ▶ Work as well in non-depressed people as in people with depression
 - ▶ Effectiveness for pain does not correlate with effectiveness for depression
- ▶ Do not work for all types of pain.



Topical Adjunctive Medications

- unfortunately, \$\$\$

Lidocaine, capsaicin, anti-inflammatories, others can be compounded to affect multiple mechanisms of pain e.g.

ketamine 3%,
NMDA Antagonist

gabapentin 3%,
AMPA-Na channel
antagonist

clonidine 0.2%,
a2-antagonist
+/- ketoprofen 7% compounded in PLO gel
NSAID

lidocaine 2.5%,
topical anesthetic

loperamide 1%,
Mu agonist-substance P antagonist





UCSF Study with Cannabis and Opioids

- ▶ Patients on chronic morphine or oxycodone
- ▶ Vaporized cannabis
- ▶ Morphine levels lower, oxycodone unchanged
- ▶ In 5 days of cannabis use they saw a 20-33 percent reduction in average pain score

- ▶ They suggest cannabis may allow people to use lower doses of opioids



Cannabis

- ▶ Medical cannabis laws and dispensaries decrease opioid scripts for Medicare Part D
 - ▶ prescriptions filled for all opioids decreased by 2.11 million daily doses per year from an average of 23.08 million daily doses per year when a state instituted any medical cannabis law. Prescriptions for all opioids decreased by 3.742 million daily doses per year when medical cannabis dispensaries opened.
 - ▶ *JAMA Intern Med.* 2018;178(5):667-672
- ▶ More about this this afternoon



TENS

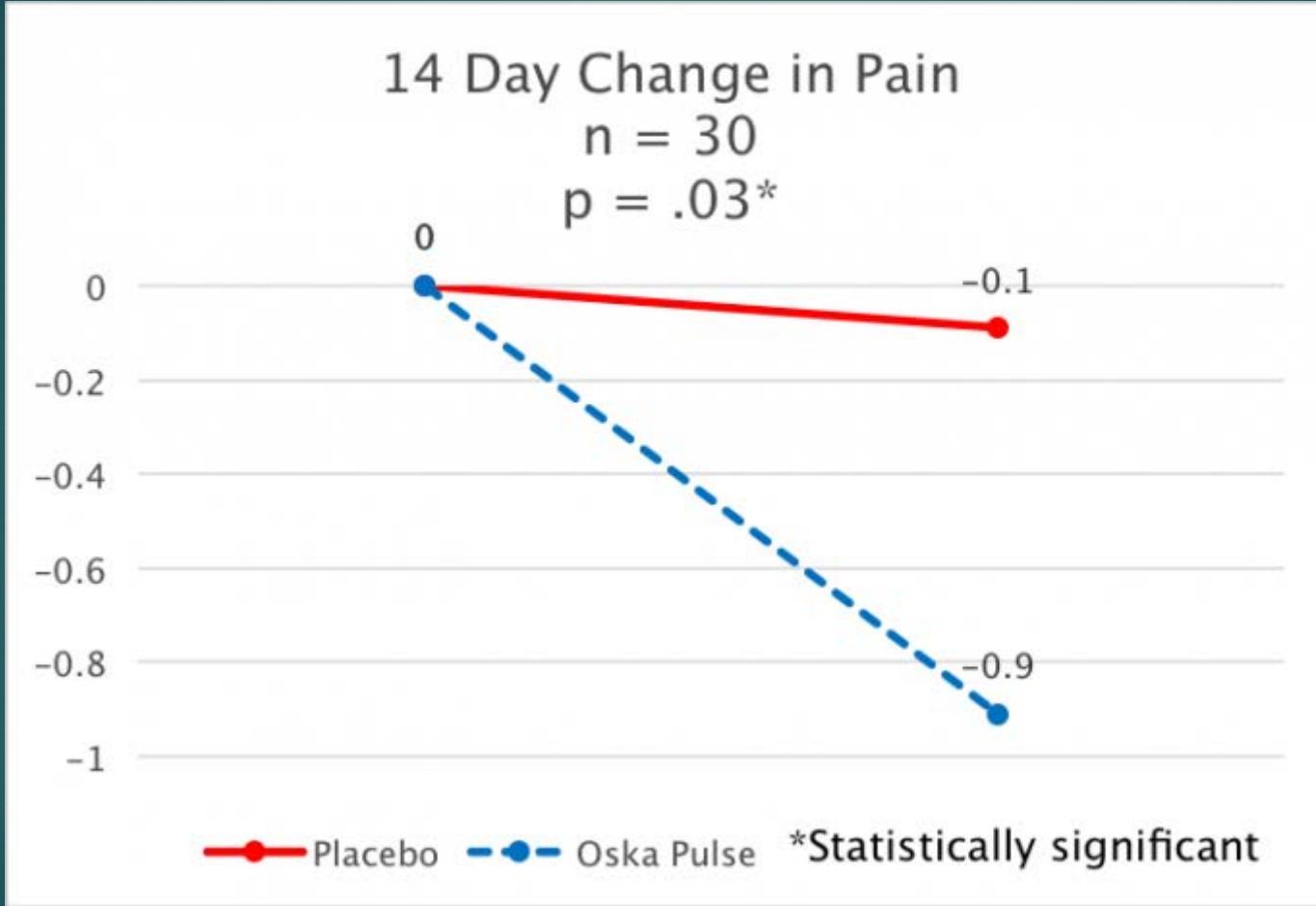
- ▶ Conflicting evidence from systematic reviews, but problems with study design, dosing
- ▶ Patient satisfaction ratings consistently high

PAIN, Volume 152, Issue 6, June 2011, Pages 1226-1232

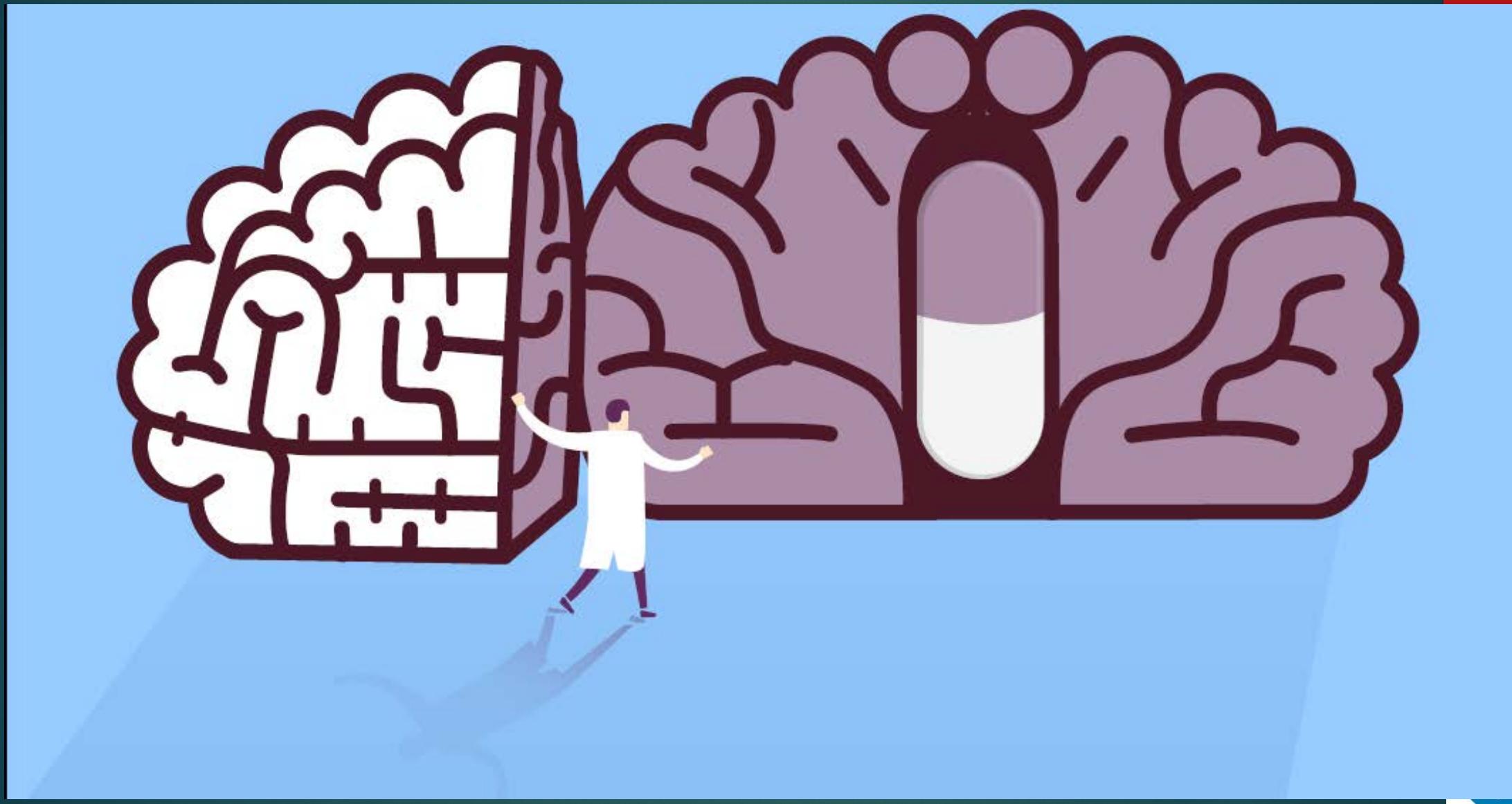
- ▶ Consider a device “lending library” in your office to see if there is significant relief from this



PEMF/Portable device



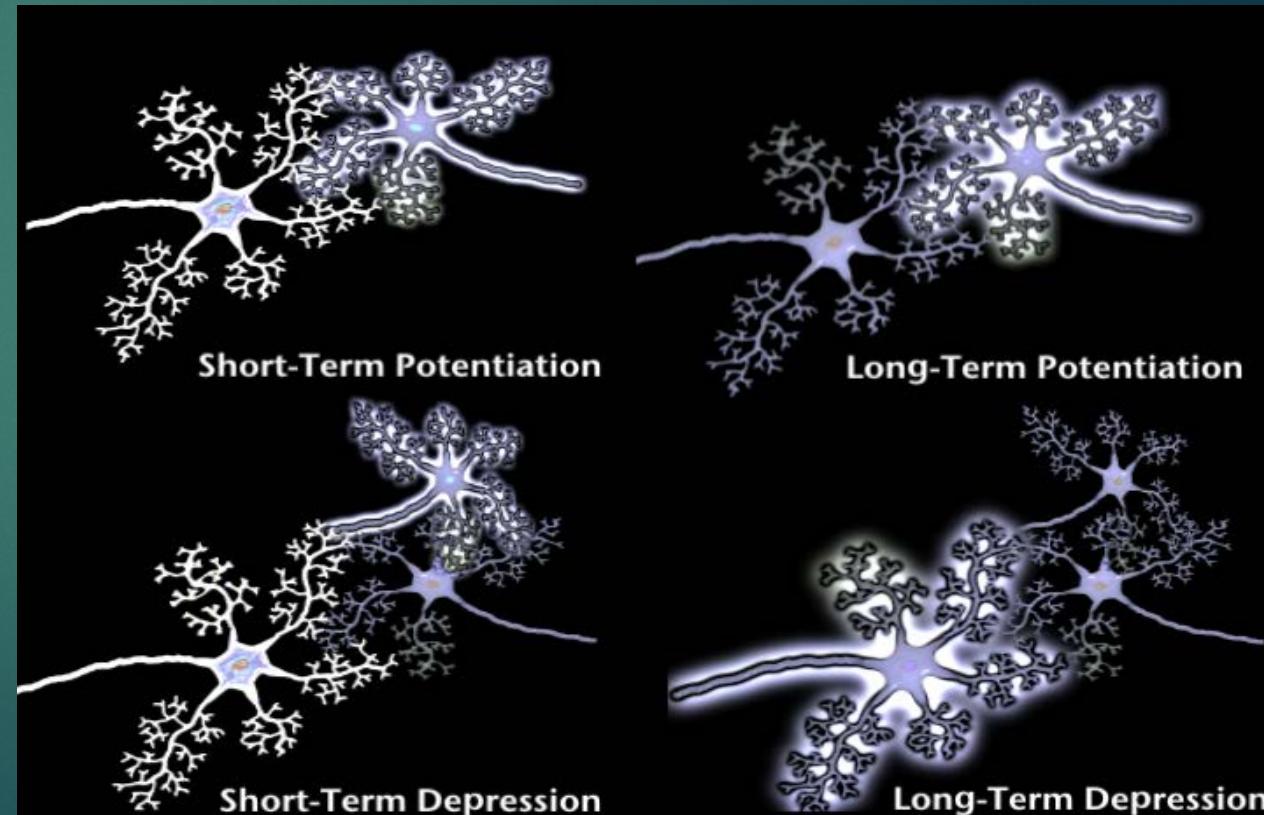
Neuroplasticity and Pain



► The MIND CAN CHANGE THE BRAIN

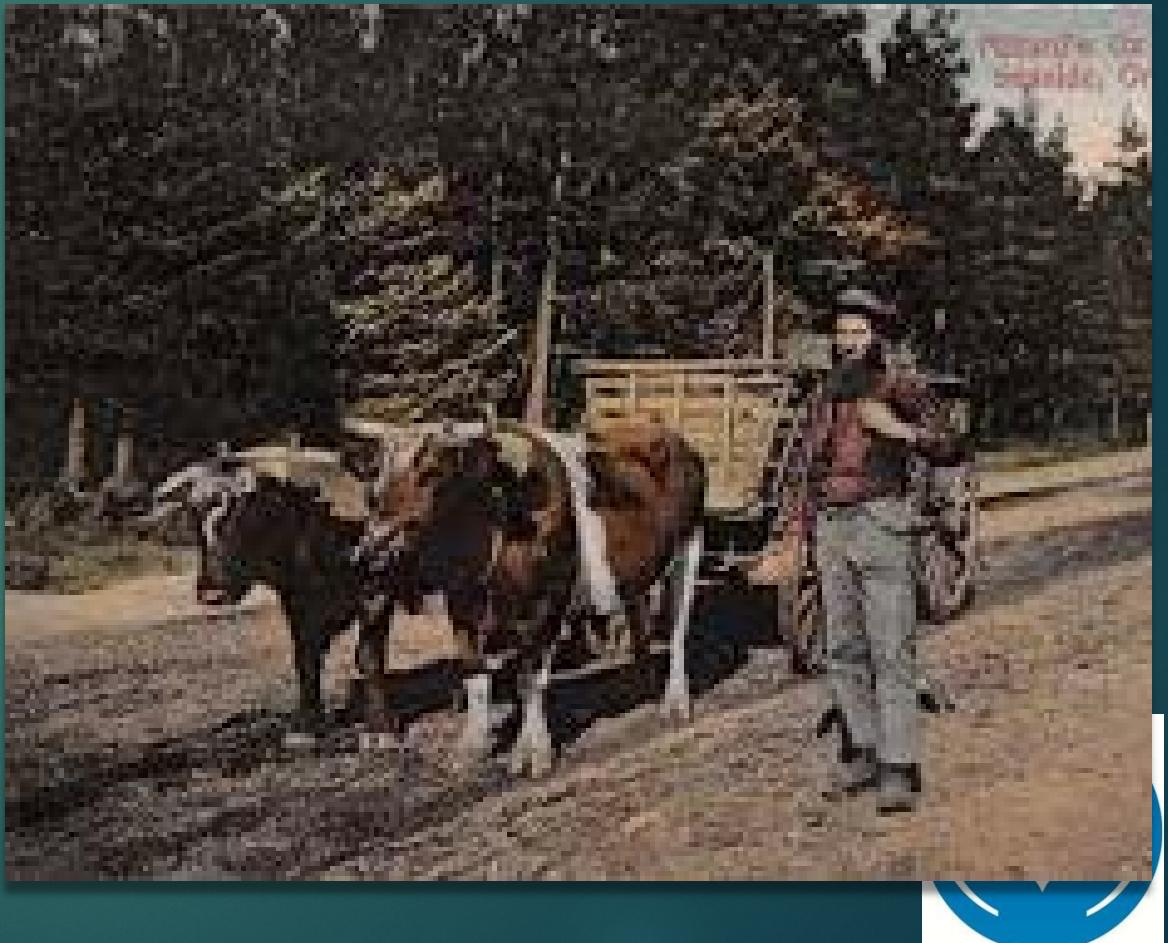
Basic Rules of Neuroplasticity

- ▶ What fires together Wires together
- ▶ What you don't use you lose
- ▶ When you make them you break them; when you break them you make them

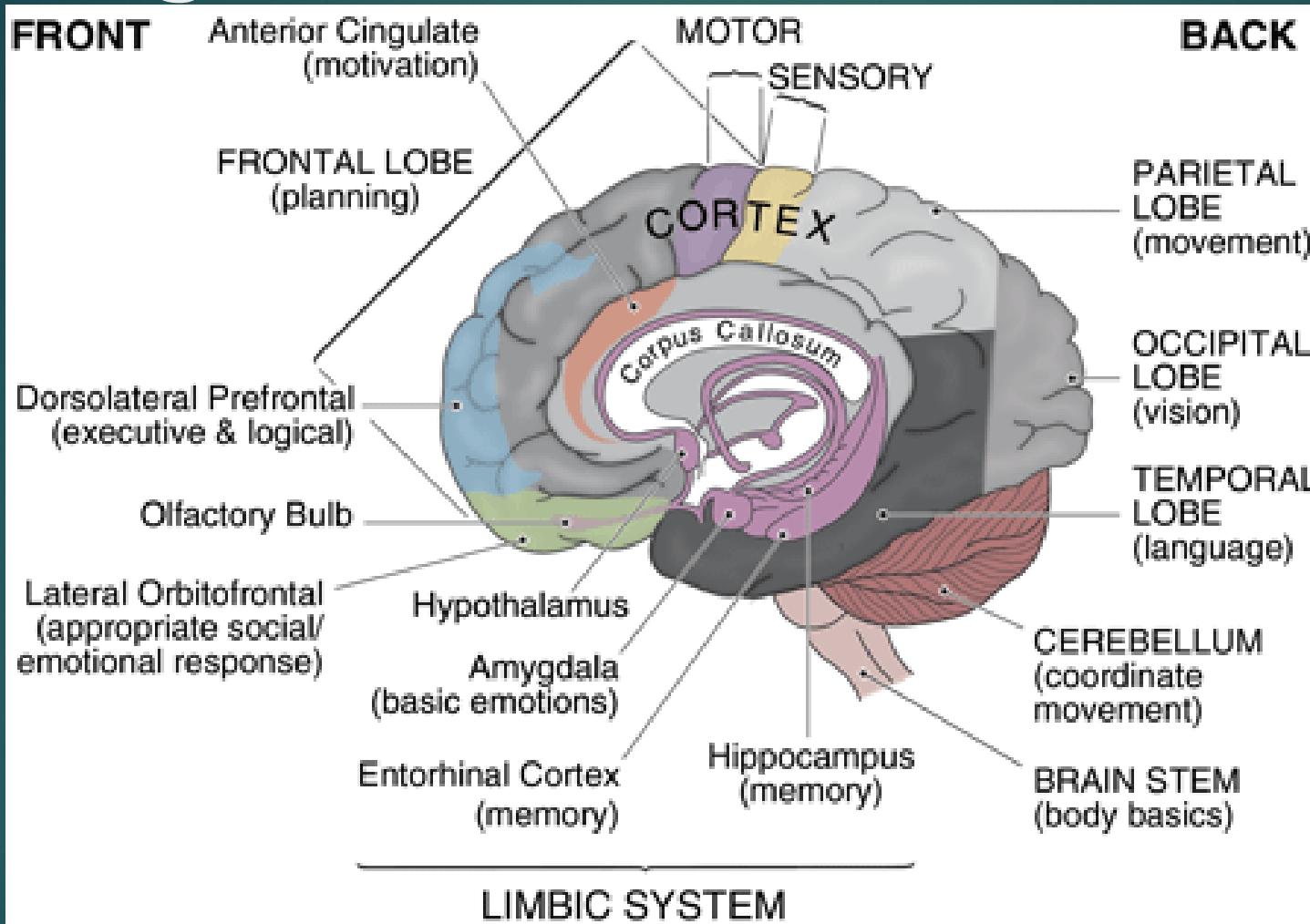


What fires together Wires together What you don't use you lose

- ▶ The more we repeat something the stronger and more numerous the connections (the deeper the ruts in the road)
- ▶ More connections means that we have become more skilled in the learned activity
- ▶ Every thing we do well has been improved by repetition and practice



The Regional Functional Brain



- ▶ The different parts of the brain have multiple functions
- ▶ Each part is different than another





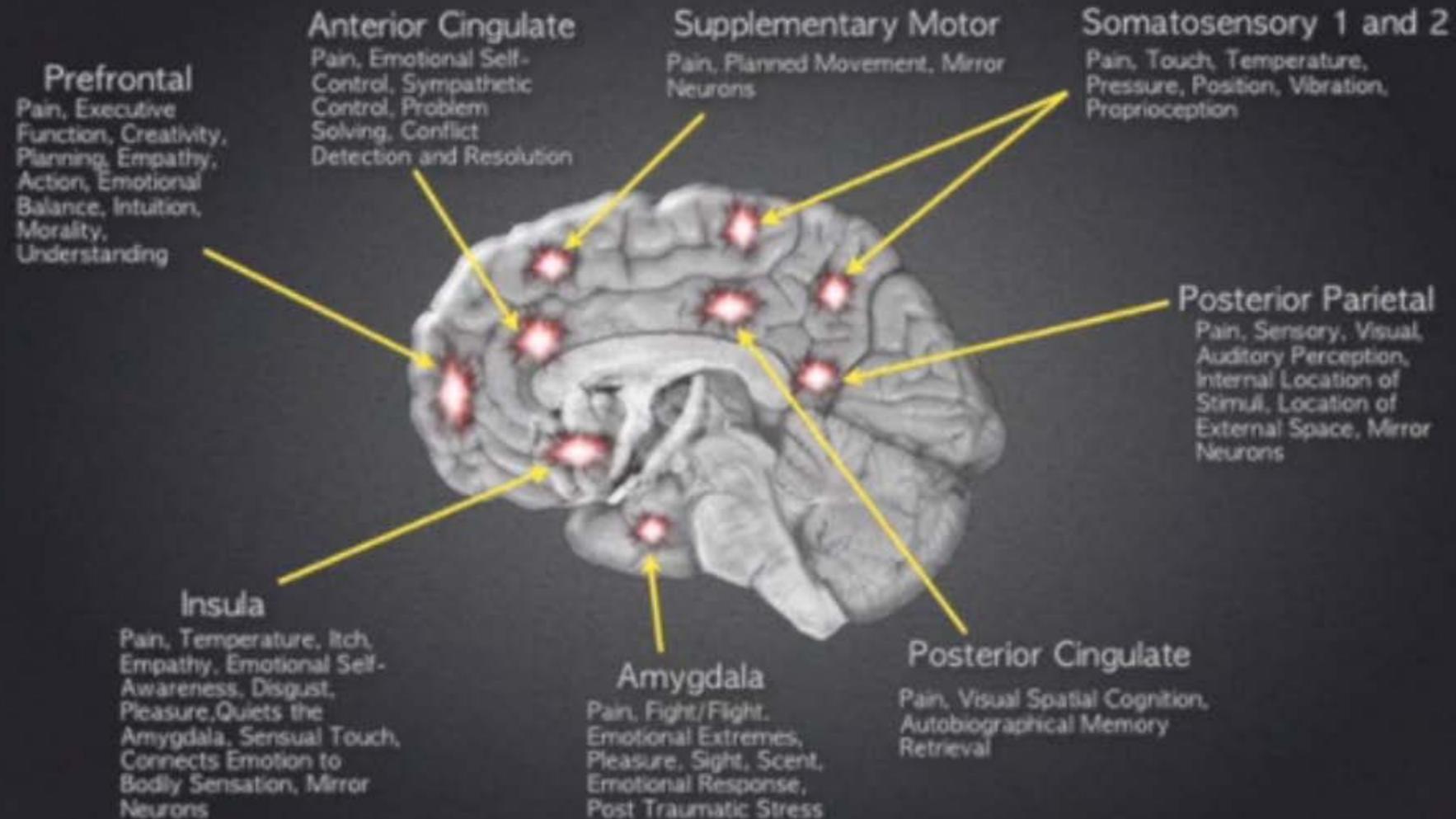
Connections in the Brain

► When we stop doing something, the connections melt away



Shrink the Pain Map by Flooding the Brain Using

Thoughts, Images, Sensations , Memories, Soothing Emotions, Movement and Beliefs



Stopping Persistent Pain

- ▶ To decrease pain we must increase other regional functions
- ▶ During pain spikes pain nerve cells fire and wire
- ▶ If this is countered by the firing of other regional nerve cells during pain spikes, then the population of firing pain nerves is decreased
- ▶ Eventually the brain rewires away from pain



Shrink the Pain Map by Flooding the Brain Using

Thoughts, Images, Sensations , Memories, Soothing Emotions, Movement and Beliefs

Get out of my amygdala

Movement – Imagine without pain

Prefrontal
Pain, Executive Function, Creativity, Planning, Empathy, Action, Emotional Balance, Intuition, Morality, Understanding

Shrink the map

Anterior Cingulate
Pain, Emotional Self-Control, Sympathetic Control, Problem Solving, Conflict Detection and Resolution

Supplementary Motor
Pain, Planned Movement, Mirror Neurons

Somatosensory 1 and 2
Pain, Touch, Temperature, Pressure, Position, Vibration, Proprioception

Massage

Do something pleasurable

Insula
Pain, Temperature, Itch, Empathy, Emotional Self-Awareness, Disgust, Pleasure, Quiets the Amygdala, Sensual Touch, Connects Emotion to Bodily Sensation, Mirror Neurons

Smell peppermint oil

Amygdala
Pain, Fight/Flight, Emotional Extremes, Pleasure, Sight, Scent, Emotional Response, Post Traumatic Stress

Posterior Parietal
Pain, Sensory, Visual, Auditory Perception, Internal Location of Stimuli, Location of External Space, Mirror Neurons

Imagery

Posterior Cingulate
Pain, Visual Spatial Cognition, Autobiographical Memory Retrieval

Remember how I felt before pain

Scent Circuit

- ▶ Nasal mucosa to nerves that penetrate skull bone and synapse with olfactory track
- ▶ The next synapse is amygdala
 - ▶ Amygdala is the first place we perceive pain
- ▶ Insula responds to Circuit by setting off pleasure circuits or disgust
- ▶ Sensory areas of the brain are stimulated
- ▶ The brain identifies the strongest sensation, and pushes others into the background



- ▶ Peppermint blocks Substance P and calcium channels



Positive Metaphors – Antidotes!



Shrink The Pain Map By Flooding The Brain

- ▶ Steal back those brain areas with:
 - ▶ Thoughts
 - ▶ Images
 - ▶ Sensations
 - ▶ Memories
 - ▶ Soothing Emotions
 - ▶ Movement
 - ▶ Beliefs



Mind-body



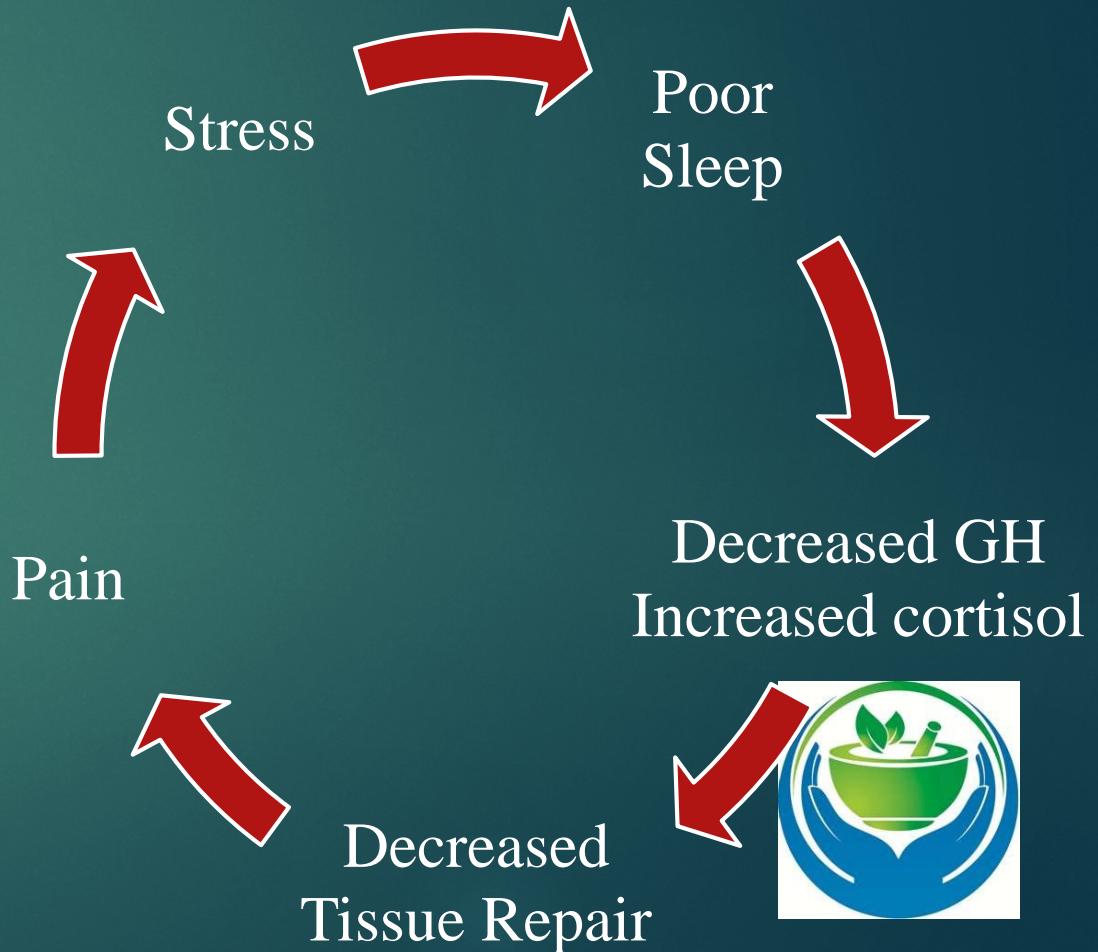
How Emotions and Stress Affect Chronic Pain

- ▶ Chronic muscle tension can cause pain in a non-injured body part
- ▶ Neurogenic inflammatory response
- ▶ Altered sleep, depression can cause chronic pain



How Chronic Pain Affects Emotions and Stress

- ▶ Body tension is perceived as emotional by the brain
- ▶ Secondary effects on:
 - ▶ Sleep
 - ▶ Disability
 - ▶ Financial fall-out
- ▶ Side effects of tx



Preparation for Surgery

- ▶ Guided imagery tape 3 days preop and 6 days postop
- ▶ Median increase in worst pain score was 72.5 controls, 42.5 imagery group ($P < 0.001$)
- ▶ Total opioid requirements – 326 mg in the control group vs. 185 mg imagery group ($P < 0.001$).

Diseases of the Colon and Rectum. 1997;40(2):172-178.

http://www.cpmc.org/services/ambulatory_surgery/prepare/imagery.html

http://www.valleyhealth.com/Programs_Services.aspx?id=5502



CBT and Multidisciplinary Interventions in Chronic Pain

- Physical symptoms:
 - CBT superior to control in 71% of studies
 - Possibly superior (i.e., a trend) in 11%

Psychother Psychosom 2000;69:205–215

- Combined CBT and PT:
 - significantly greater improvement
 - Differences were maintained at 6 month follow-up. Pain. 1992 Mar;48(3):339-47.



Mindfulness-based stress reduction for failed back surgery syndrome

- Statistically significant and clinically significant:
 - Increase in pain acceptance and quality of life
 - Decrease in functional limitation
 - Decrease in pain level
 - Decrease in frequency, potency of analgesics
 - Increase in sleep quality

• J Am Osteopath Assoc. 2010 Nov;110(11):646-52



Effects on Utilization

- ▶ After a behavioral medicine intervention:
 - ▶ 36% reduction in clinic visits in the first year postintervention
 - ▶ Projected to an estimated net savings of \$12,000 for the first year of the study posttreatment and \$23,000 for the second year

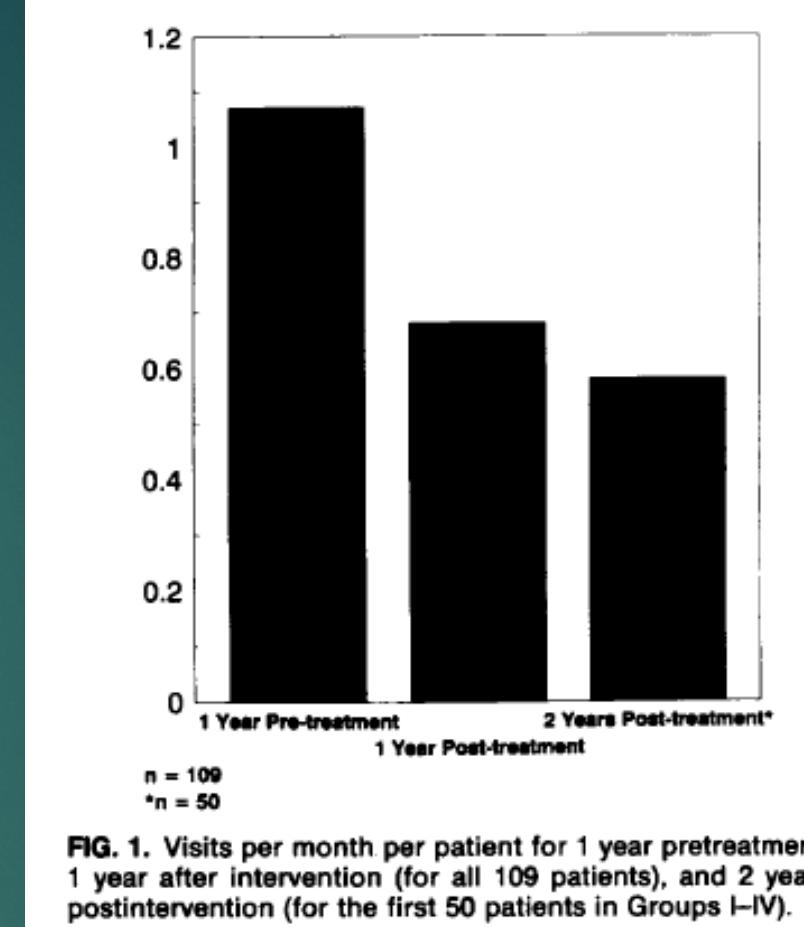
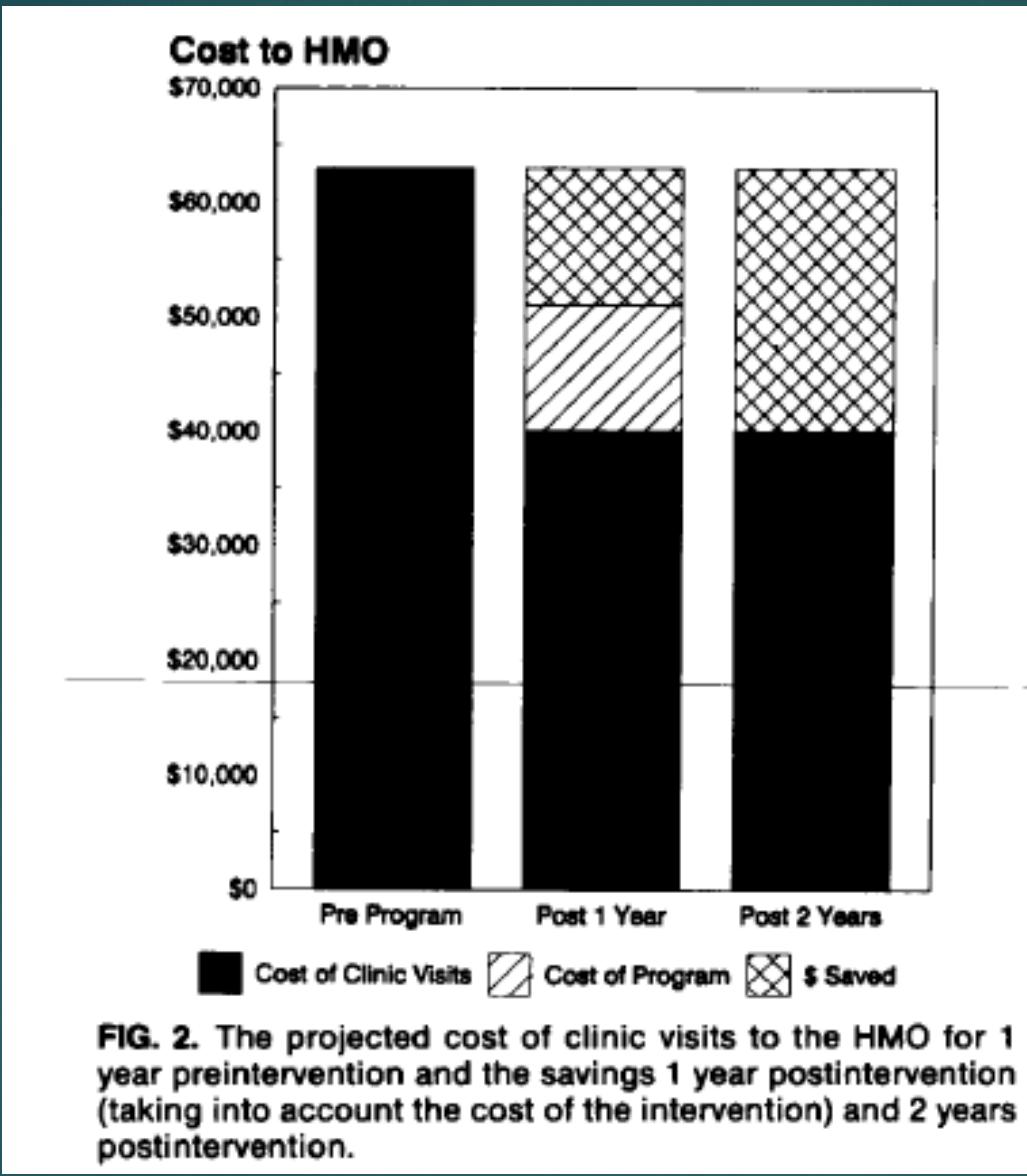


FIG. 1. Visits per month per patient for 1 year pretreatment, 1 year after intervention (for all 109 patients), and 2 years postintervention (for the first 50 patients in Groups I-IV).

Caudill et al Pain 45(1991) 334-5





Psychogenic Origins of Pain

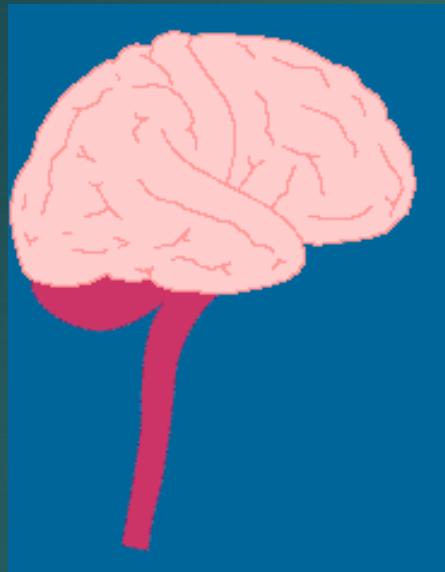
- ▶ Sometimes, the pain is not just exacerbated by stress, but is actually created by psychological factors
- ▶ Remember the low back pain story. . .
- ▶ And perceived injustice. . . .



Why Would the Brain Cause Pain?

- ▶ Freud's theory: punishment for unacceptable feelings (usually sexual)
- ▶ Sarno's theory: Defense
 - ▶ Parts of your mind may think they need to protect you from dangerous or threatening feelings





TMS

Repression

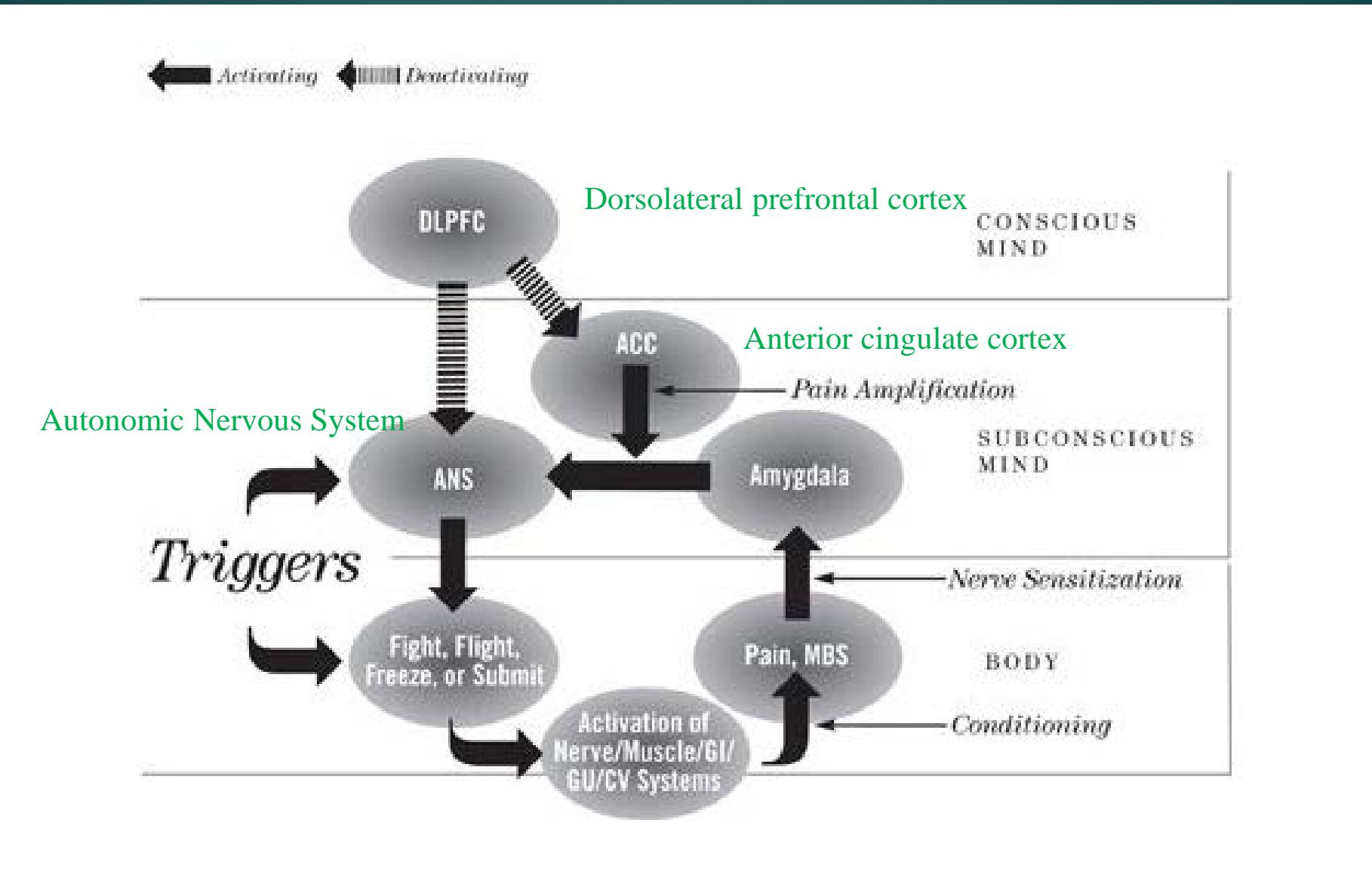


Conscious

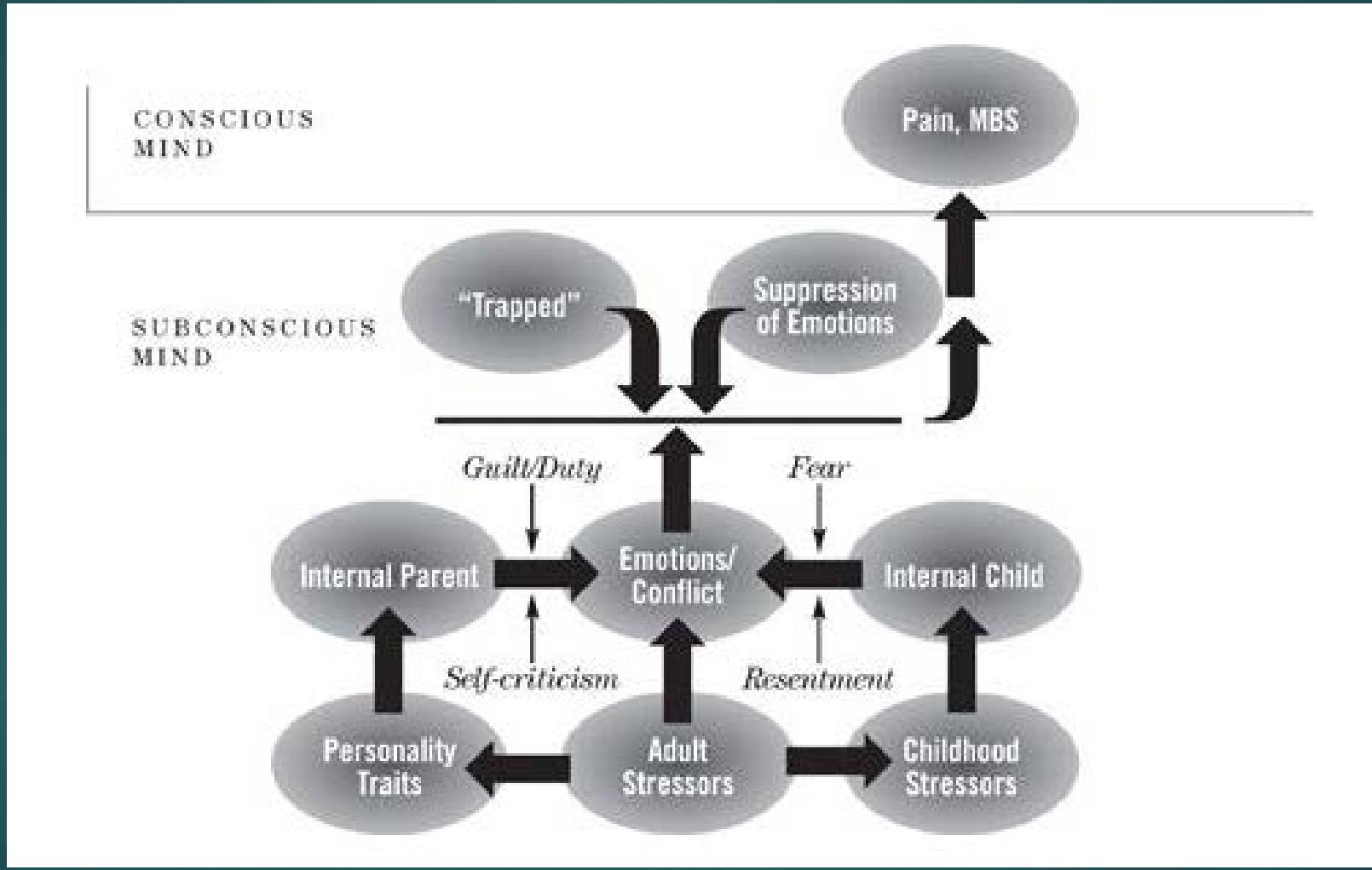
Unconscious -
unaware



Neurologic Mechanism for MBS



The Psychology of MBS



Who Gets Chronic Pain, and When?

ACES

- ▶ Historical Features
 - ▶ Trauma in early life
 - ▶ Trauma/victimization at time of onset
- ▶ Personality traits
 - ▶ Perfectionism
 - ▶ “Good-ism”
 - ▶ Driven people
- ▶ Current stresses
 - ▶ Not uncommonly, onset is related to a stressful event/relationship/job/etc.





Adverse Childhood Experience* Categories	Impact of Trauma and Health Risk Behaviors to Ease the Pain	Long-Term Consequences of Unaddressed Trauma (ACEs)
<p><i>Abuse of Child</i></p> <ul style="list-style-type: none"> ■ Recurrent Severe Emotional abuse ■ Recurrent Physical abuse ■ Contact Sexual abuse 	<p><i>Neurobiologic Effects of Trauma</i></p> <ul style="list-style-type: none"> ■ Disrupted neuro-development ■ Difficulty controlling anger-rage ■ Hallucinations ■ Depression ■ Panic reactions ■ Anxiety ■ Multiple (6+) somatic problems ■ Sleep problems ■ Impaired memory ■ Flashbacks ■ Dissociation 	<p><i>Disease and Disability</i></p> <ul style="list-style-type: none"> ■ Ischemic heart disease ■ Cancer ■ Chronic lung disease ■ Chronic emphysema ■ Asthma ■ Liver disease ■ Skeletal fractures ■ Poor self rated health ■ Sexually transmitted disease ■ HIV/AIDS
<p><i>Trauma in Child's Household Environment</i></p> <ul style="list-style-type: none"> ■ Substance abuse ■ Parental separation or divorce - ■ Chronically depressed, emotionally disturbed or suicidal household member ■ Mother treated violently ■ Imprisoned household member ■ Loss of parent – (by death, by suicide, - or by abandonment) 	<p><i>Health Risk Behaviors</i></p> <ul style="list-style-type: none"> ■ Smoking ■ Severe obesity ■ Physical inactivity ■ Suicide attempts ■ Alcoholism ■ Drug abuse ■ 50+ sex partners ■ Repetition of original trauma ■ Self Injury ■ Eating disorders ■ Perpetrate interpersonal violence 	<p><i>Serious Social Problems</i></p> <ul style="list-style-type: none"> ■ Homelessness ■ Prostitution ■ Delinquency, violence, criminal behavior ■ Inability to sustain employment ■ Re-victimization: rape, DV ■ compromised ability to parent ■ Intergenerational transmission of abuse ■ Long-term use of health, behavioral health, correctional, and social services
<p><i>Neglect of Child</i></p> <ul style="list-style-type: none"> ■ Abandonment ■ Child's basic physical and/or emotional needs unmet <p>* Above types of ACEs are the “heavy end” of abuse.</p>		

The higher the ACE Score, the greater the likelihood of

- Severe and persistent emotional problems
- Health risk behaviors
- Serious social problems
- Adult disease and disability
- High health and mental health care costs
- Poor life expectancy

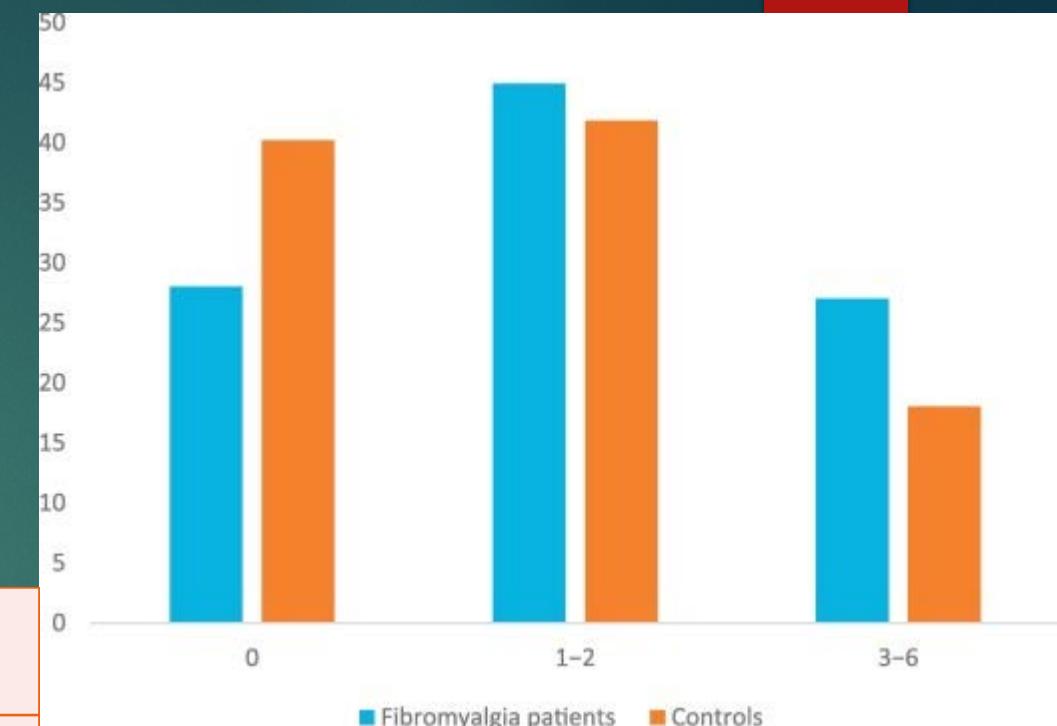


Who gets pain?

- ▶ People with ACEs

Pain That Interferes With Activities

	Odds Ratio	Confidence Interval
Childhood Physical Abuse	1.67 *	1.29–2.16
Childhood Sexual Abuse	1.31	0.88–1.94
Parental Marital Conflict	1.44 *	1.09–1.90
Parental Psychopathology	1.58 *	1.23–2.04
Poor Parent-Child Relationship	1.21	0.89–1.65



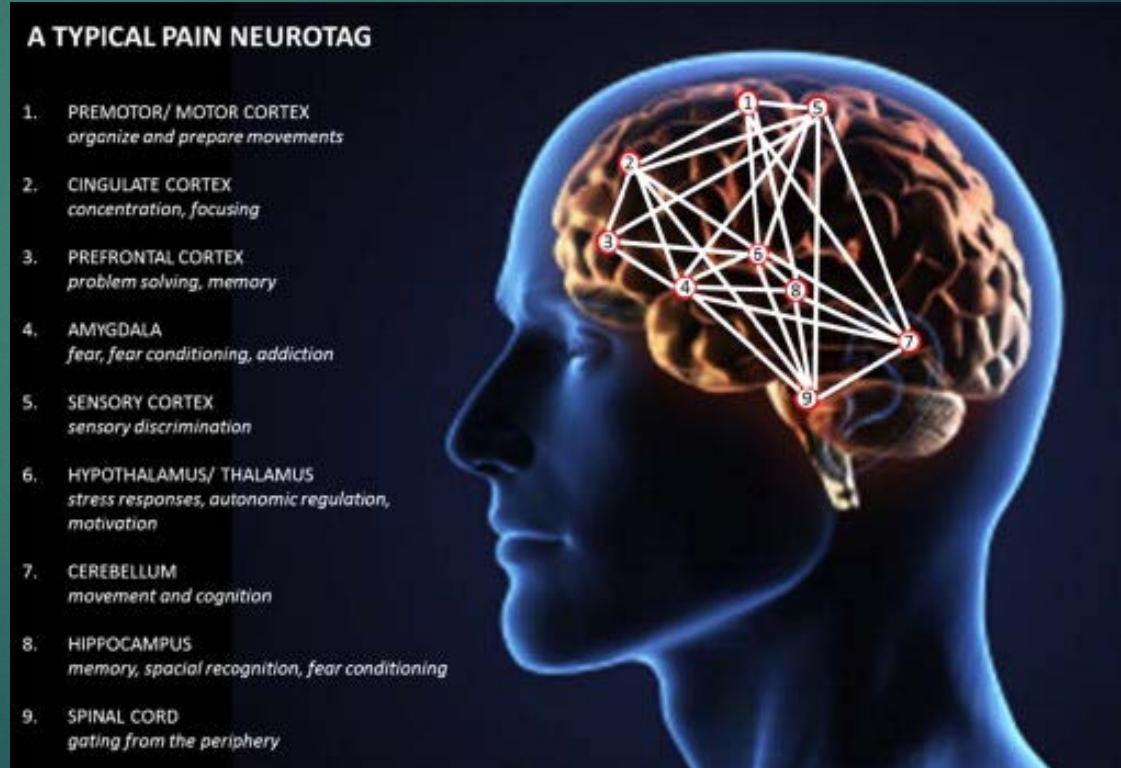
	Healthy (%)	IBS(%)	P-value
Household mental illness	18.18	41.22	<0.001
Emotional Abuse	13.64	27.03	0.004
Sexual Abuse	9.74	19.59	0.022

Pain = physical sensation + CONTEXT

► The old idea



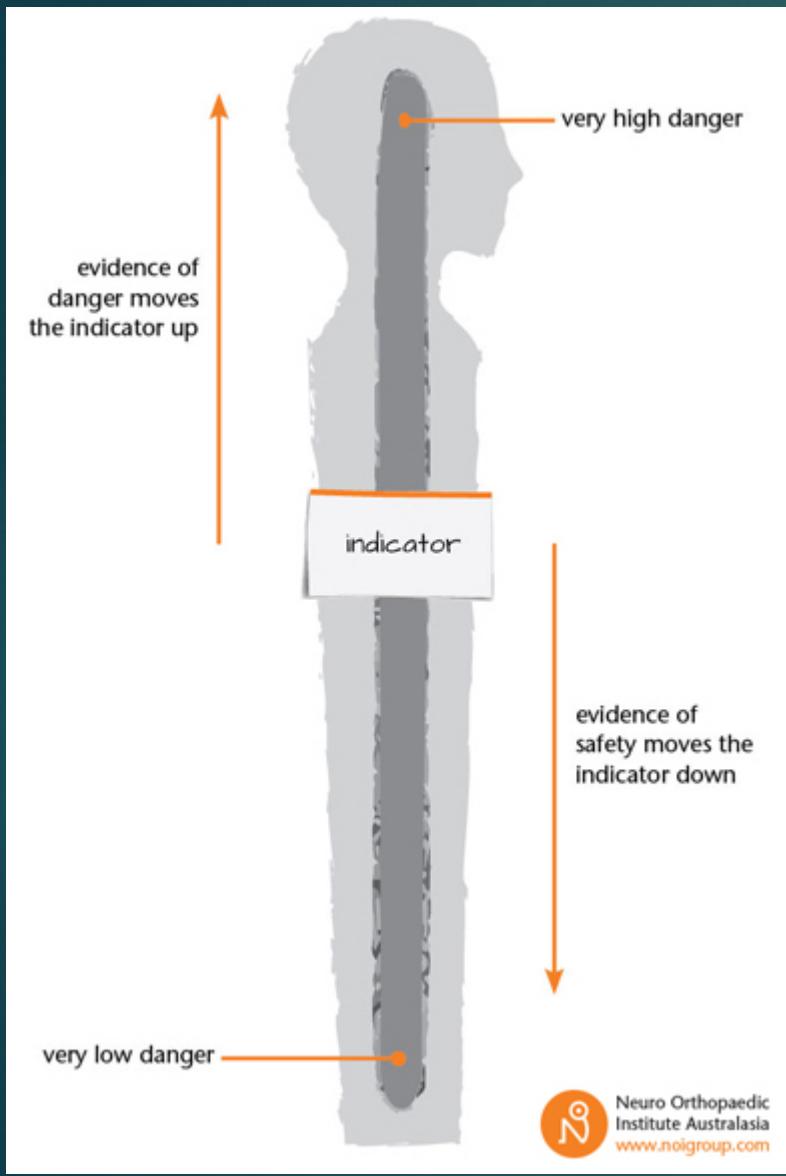
► The Neurotag idea



Who gets pain?

- ▶ People who do not feel safe

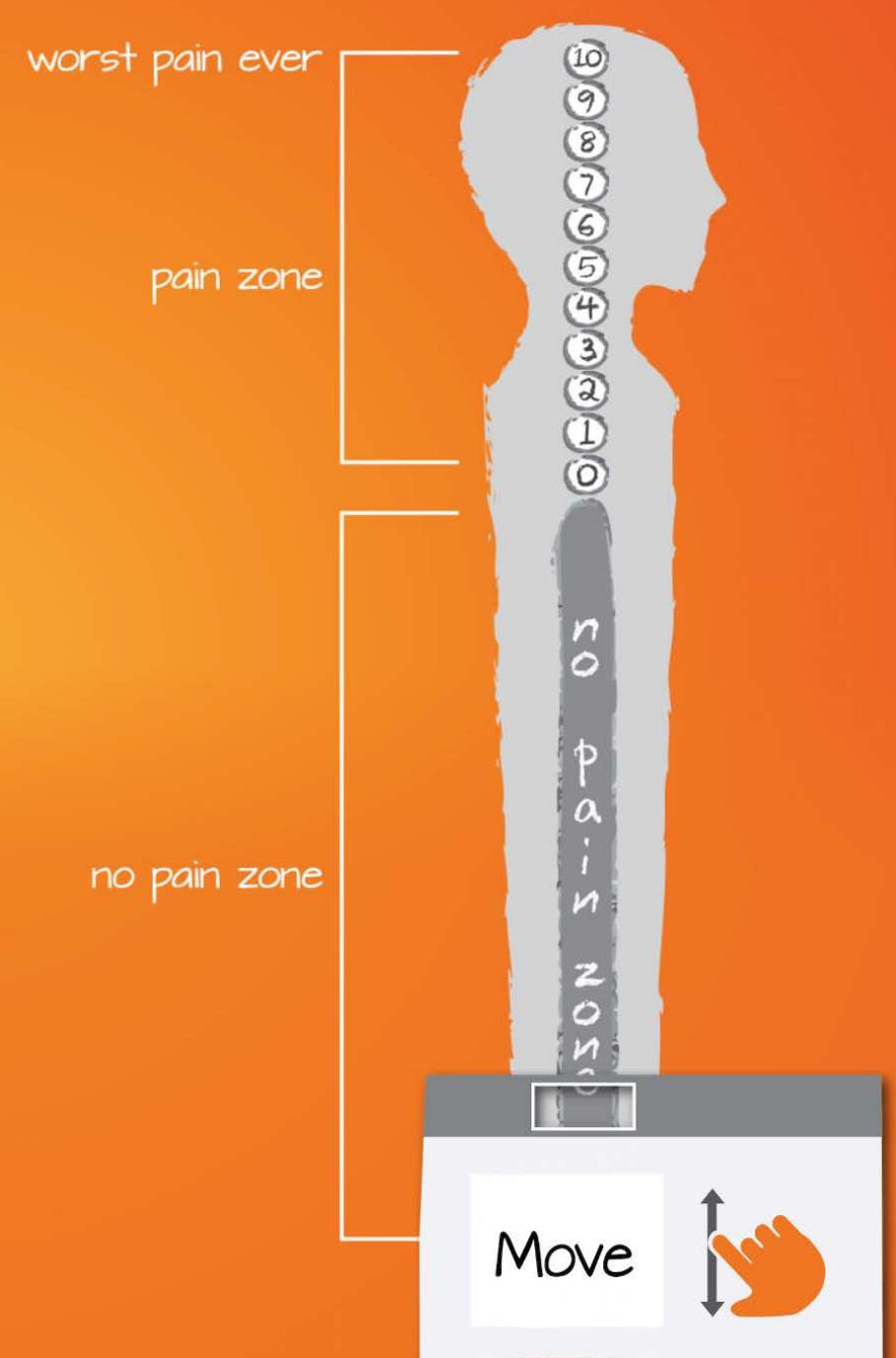




► DANGER

► Protectometer is always weighing these two things

► SAFETY



Who gets pain?

- ▶ People who do not feel safe
- ▶ ACEs
- ▶ Trauma survivors



Who gets pain?

► People who do not feel safe

► ACEs

► Trauma survivors

- o 35-50% of patients w PTSD have chronic pain
 - o 39% of MVA survivors
 - o 39% of assault victims
 - o Injured workers sent for rehab 35%
 - o Fibromyalgia 20% curr., 42% life

	% PTSD
Chronic pain	20.5
General population	5.1



Who gets pain?

- ▶ People who do not feel safe
- ▶ ACEs
- ▶ Trauma survivors
- ▶ People who are stressed

	High-impact Chronic Pain
Adults over age 50	8.2%
People over age 50 in lowest wealth quartile (Poor people)	17.1%



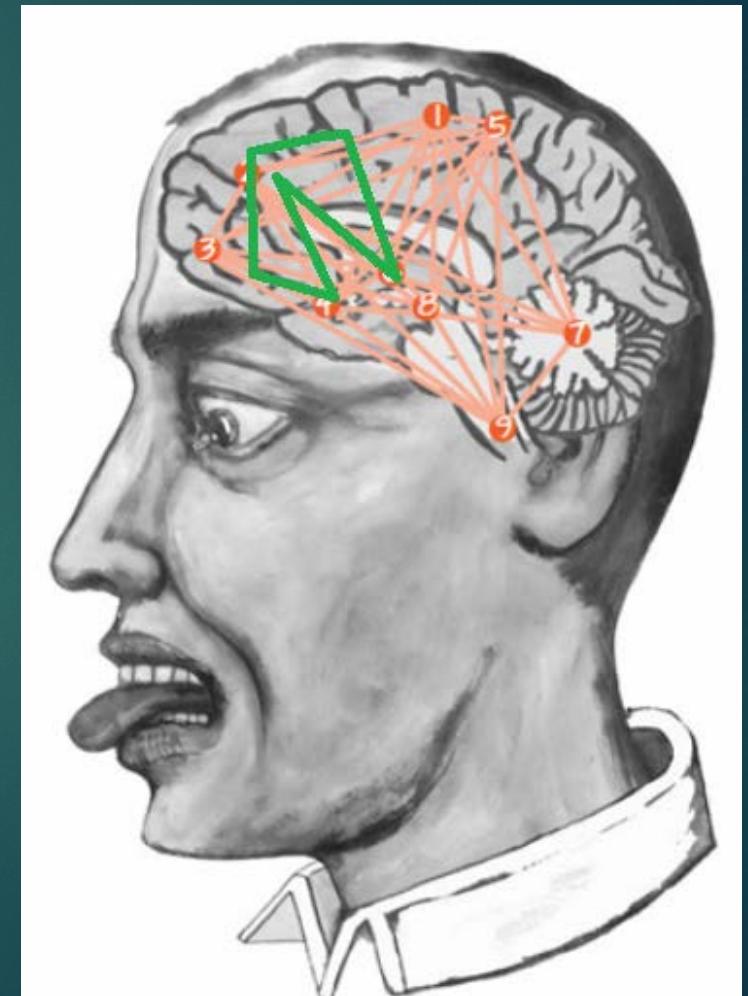
Who gets pain?

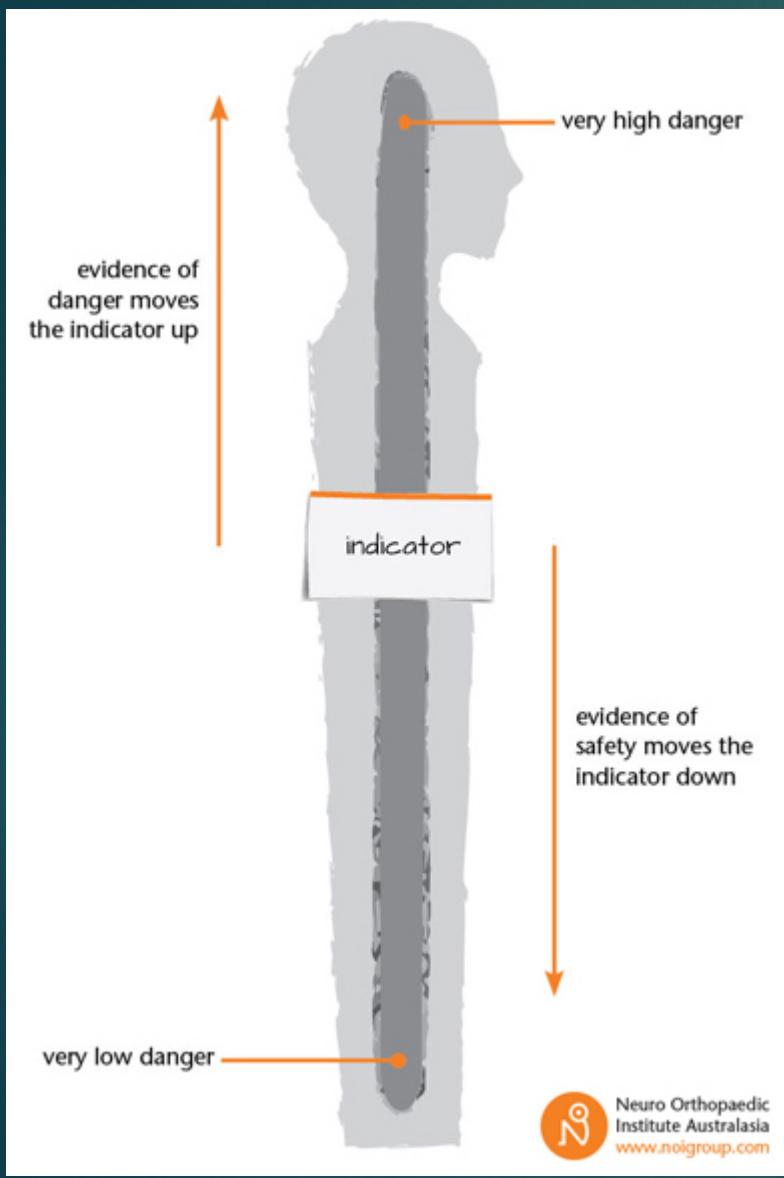
- ▶ People who do not feel safe
- ▶ ACEs
- ▶ Trauma survivors
- ▶ People who are stressed
- ▶ People with trouble identifying feelings

	Patients	Controls	P value
Difficulty Identifying feelings	21.1	12.3	<0.001
Difficulty describing feelings	15.6	12.1	0.001



Reminder:
Thoughts and beliefs are nerve
impulses too

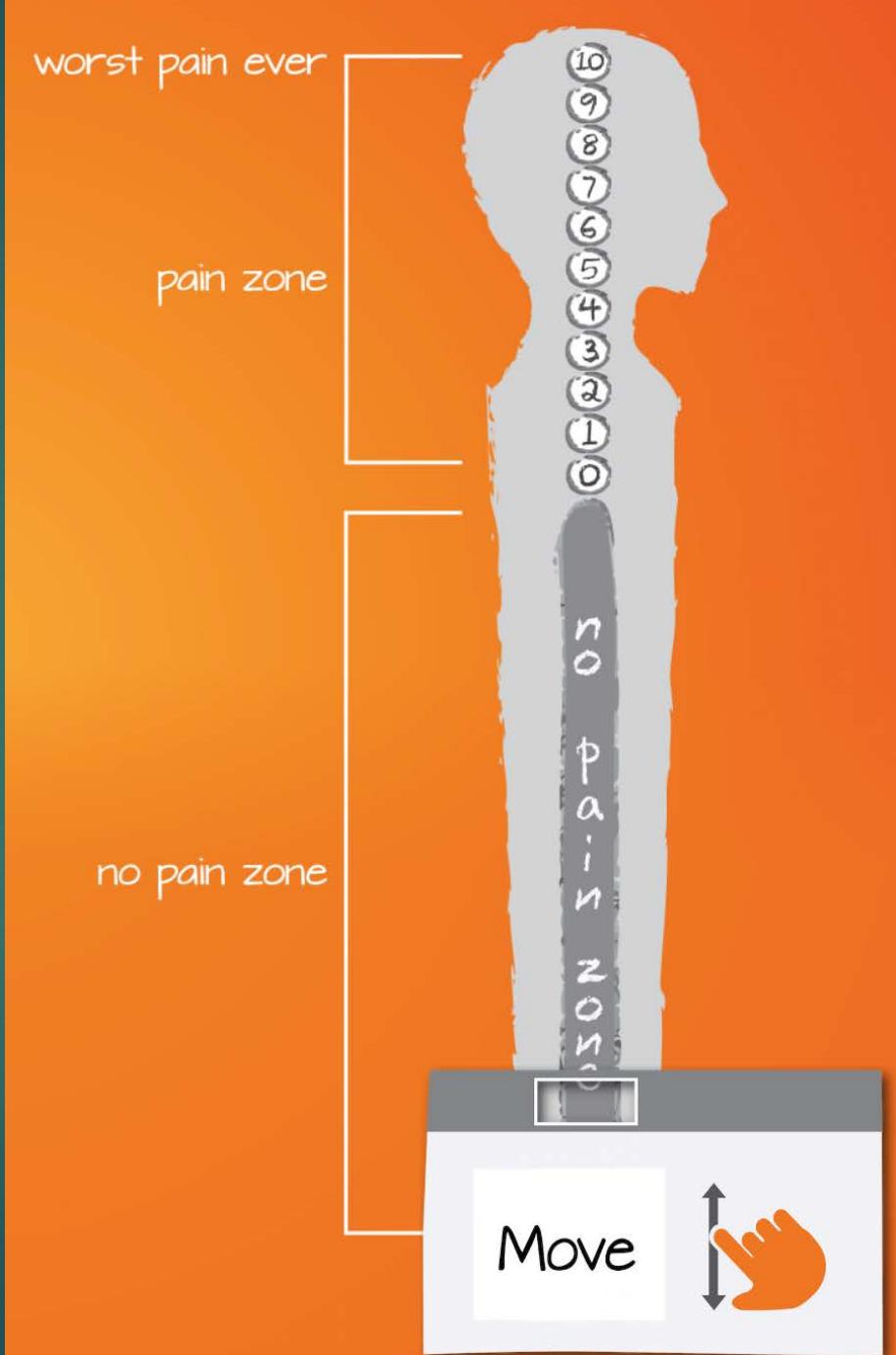




► DANGER

- Protectometer is always weighing these two things

► SAFETY



DIMs and SIMs

- ▶ We have pain when our brains “weigh the world” and “decide” that there is more Danger to the body than Safety
- ▶ Example: You sprain your ankle and it is starting to swell
- ▶ You think: “Oh no, I hurt myself terribly, I won’t be able to walk for a week. . . ”
- ▶ OR
- ▶ You think: “Look at me, what a self-healer am I!”





DIMs



SIMs



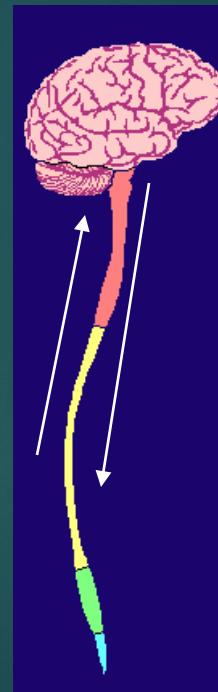
Back to TMS: The Symptom Imperative

- ▶ When there is an underlying need for the mind to distract the patient, a new symptom will have to arise to replace any symptom that has been treated/eradicated
- ▶ Thus:
 - ▶ Back pain improves and reflux becomes severe
 - ▶ Neuropathy improves but depression gets severe
 - ▶ Etc.



How Might the Brain Cause Pain?

- ▶ Spinal cord modulation – central control of pain messaging
- ▶ Autonomic Function
 - ▶ Circulation of blood and oxygen to tissues
 - ▶ Control of gut motility and tone
- ▶ Neurogenic inflammation



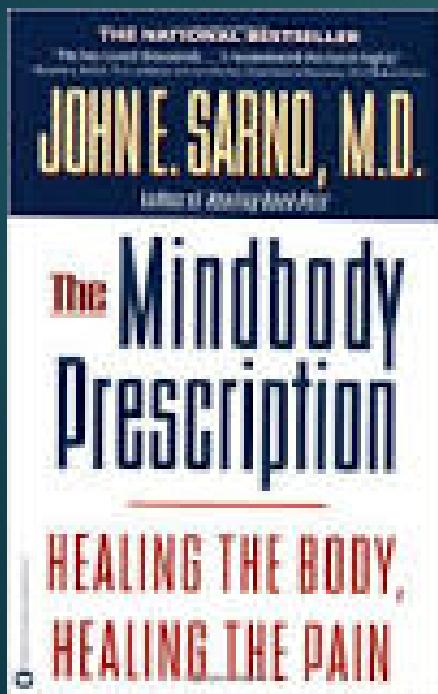
Talking to Patients about Pain of Psychogenic Origin

- ▶ Emphasize the pain is real -
 - ▶ Tissue ischemia
 - ▶ Spinal Cord Amplification
- ▶ Flattery
 - ▶ This happens to nice and good people
- ▶ As an advocate
 - ▶ I am trying to protect you from a surgery that may be unnecessary and may not be helpful



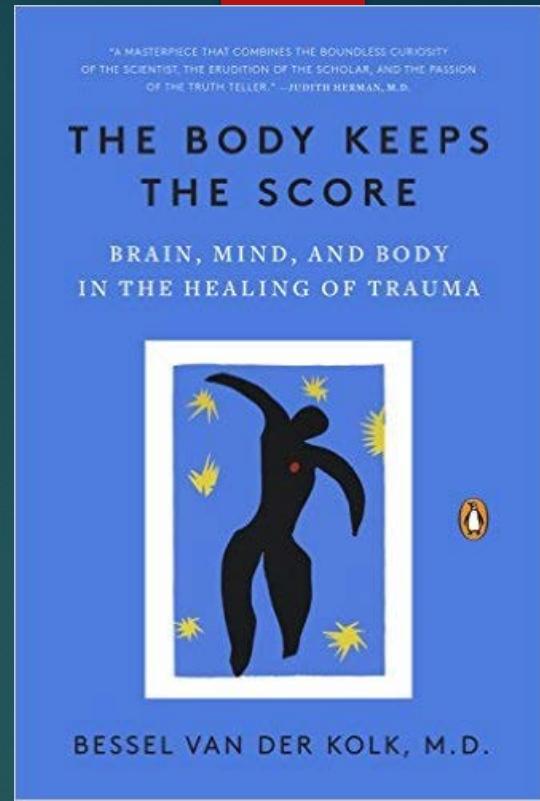
So What Can We Do About This?

1. Understand the true cause of the pain is this process, not the structural abnormalities
2. Reflect on this every day. Read a portion of one of Sarno's books, read the handout, etc. Spend 30-60 minutes on this daily.
3. Think psychological, not physical
4. Talk to your brain.



Treating PTSD

- ▶ PTSD and chronic pain tend to improve together
- ▶ Effect sizes larger for psycho-therapies than pharmacotherapies
- ▶ Effect sizes larger for psycho-therapies than pharmacotherapies



Evidence-based treatments for PTSD

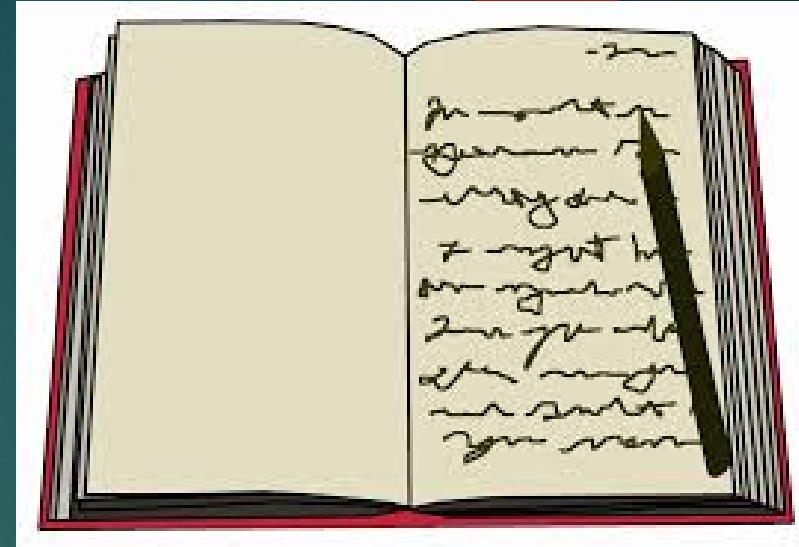
- ▶ Psychotherapies
 - ▶ Prolonged Exposure (PE) therapy (high)
 - ▶ Cognitive restructuring (CR, CPT) (mod)
 - ▶ Cognitive behavioral therapy (CBT)-mixed therapies (mod)
 - ▶ Eye movement desensitization and reprocessing (EMDR) (mod-low)****
 - ▶ Emotional freedom technique (EFT) (mod)****
 - ▶ Narrative exposure therapy (mod-low)
 - ▶ Acupuncture (low)****
 - ▶ Neurofeedback (low)****

**** Treatments that are accessible in my community and in our groups



And back to Sarno and Schubiner. . . .

Write!



- ▶ Remember the purpose of the pain is to distract you from feelings that are considered dangerous, like rage, hurt, sadness, sorrow, guilt, or fear.

These are feelings we are not aware of.

- ▶ Make a list of all the important factors in your life that might be contributing to your pain. Write an essay about each one.
Also, divorce, loss of a parent, etc.



Treatment Program

- ▶ Schedule daily time for study and reflection – Repetition is important!
- ▶ Review your pressure list daily
- ▶ Don't give up – it takes time to change the unconscious mind
- ▶ Start resuming physical activities when the pain is almost gone – start gradually





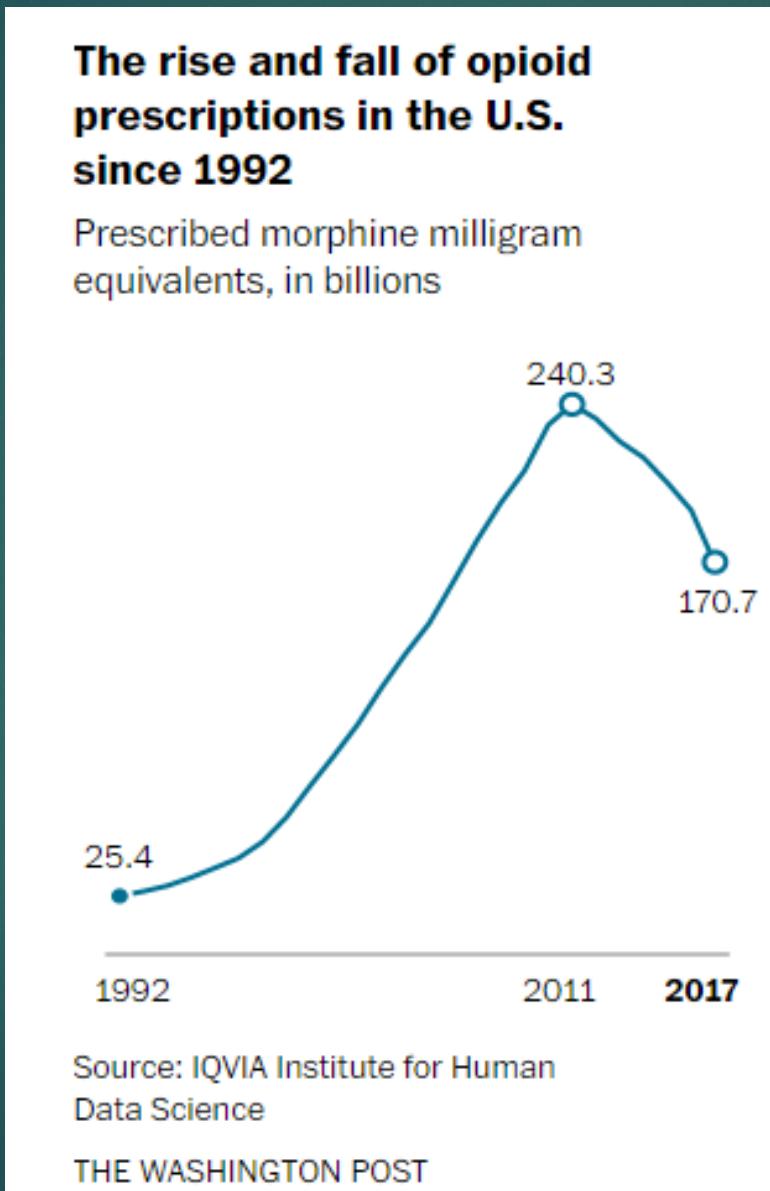
Treating the Emotional Pieces: Effectiveness

- ▶ Emotional awareness and Expression Therapy – Schubiner, Lumley et al
 - ▶ Rate of 50% reduction in pain was 2-3x that of usual care
 - ▶ *Journal of Pain* Volume: 17 Issue SUPP (2016) ISSN: 1526-5900
- ▶ Sarno's case series – Follow-up 6 months after consultation for TMS
 - ▶ 70% 80-100% pain free
 - ▶ 75% 80-100% unrestricted physical activity





Tapering Opioids





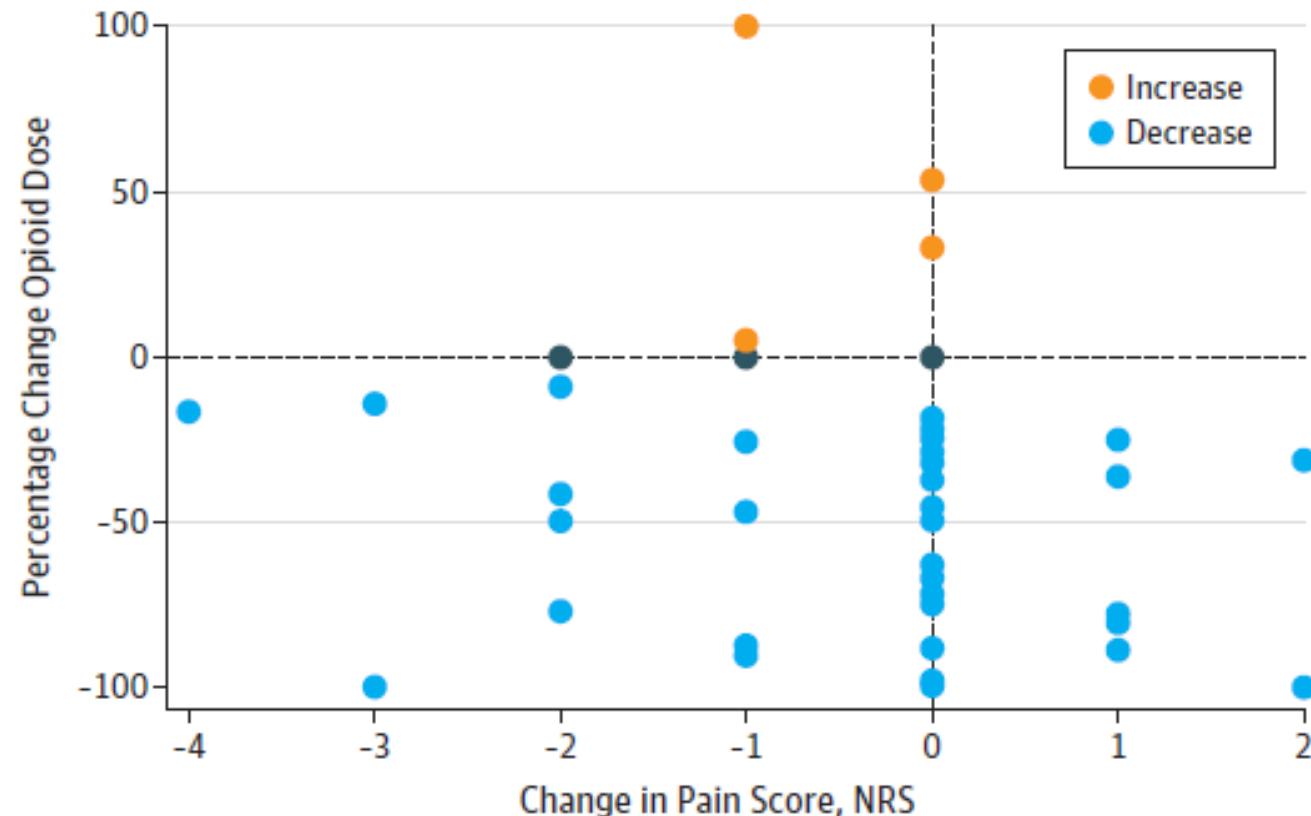
Tapering and Stopping Opioids

- ▶ Five hundred-nine Veterans Health Administration (VHA) patients whose clinicians discontinued them from LTOT (long-term opioid therapy)
- ▶ Forty-seven patients (9.2%) had SI only, while 12 patients (2.4%) had SSV suicidal self-directed violence
- ▶ Nearly three times the rate of veterans at large per WP
- ▶ [Gen Hosp Psychiatry](#). 2017 Jul;47:29-35. doi: 10.1016/j.genhosppsych.2017.04.011. Epub 2017 Apr 27.



Patient-centered Opioid Tapering in Chronic Pain

Figure. Change in Opioid Morphine Equivalent Daily Dose
and Absolute Change in Pain Intensity Score
From Baseline to Month 4 for Study Completers



JAMA Internal Medicine May 2018
Volume 178, Number 5 707



Break



But how can patients afford this?

- ▶ Diagnostics
- ▶ Therapeutics



Intake - Understanding the timeline and populating the matrix takes **TIME!**



- ▶ Negotiate a longer intake visit with administration at your clinic
- ▶ If that first visit is long enough, follow-ups can be shorter
- ▶ We recommend 1 hour
- ▶ Schedule new patients at the end of a half day





An Aside: Financial Options/Practice Management

- ▶ Coding for counseling
 - ▶ 99214 – 25 minutes if >50% of time spent in counseling and coordination of care
 - ▶ 99215 – 40 minutes
 - ▶ 99354 – an additional hour beyond the usual
- ▶ The Holistic Surcharge
 - ▶ ABN – Advanced beneficiary notice for services NOT covered by Medicare/Medicaid
 - ▶ Acupuncture – I often add ear needles during a regular medical visit
 - ▶ Herbal consultation
 - ▶ Nutritional consultation other than for diabetics
 - ▶ This can be waived at the practitioner's discretion



Leverage the time

- ▶ Intake Questionnaires – or not

Female Intake Questionnaire

General Information

Name _____ Age _____ Today's Date _____
Date of Birth _____ Email _____
Address _____ City _____ State _____ Zip _____

Comprehensive New Patient Health History – Adult

Current Date ____/____/____

Name _____ Preferred first name/nickname (if different): _____

Date of Birth ____/____/____ Birth Gender: male female Current Gender: male female

Welcome to the Full Circle Center for Integrative Medicine. This questionnaire has been designed so that we can both review your past medical history and other factors in your life that affect your health. The questionnaire makes it possible for us to be more thorough within the constraints of a brief clinic visit.

It is long and detailed! Some of this information may already be in your medical records, but we are going to ask you to repeat it here to be sure we are getting your complete history. Some questions are very personal – if you do not wish to



Leverage the time

- Follow-up questionnaires for problem areas identified
- Follow-up/take-home timeline



HPA Axis Questionnaire

Patient Name _____

The hypothalamus, pituitary, adrenal (HPA) axis is the body's central stress response system.

Chronic Fatigue/Fibromyalgia SYMPTOM CHECKLIST

Circle One I. CFIDS Criteria

1. A. Yes No Has your fatigue not been lifelong (i.e., you weren't result of ongoing exertion; and not substantially alleviated by a substantial reduction in previous levels of occupational or personal activities?)

B. Yes No Do you have four or more of the following eight symptoms (check all that apply)? All of which must have persisted for at least 6 months?

Child Attention Learning and Behavior Disorder Parent Intake Questionnaire

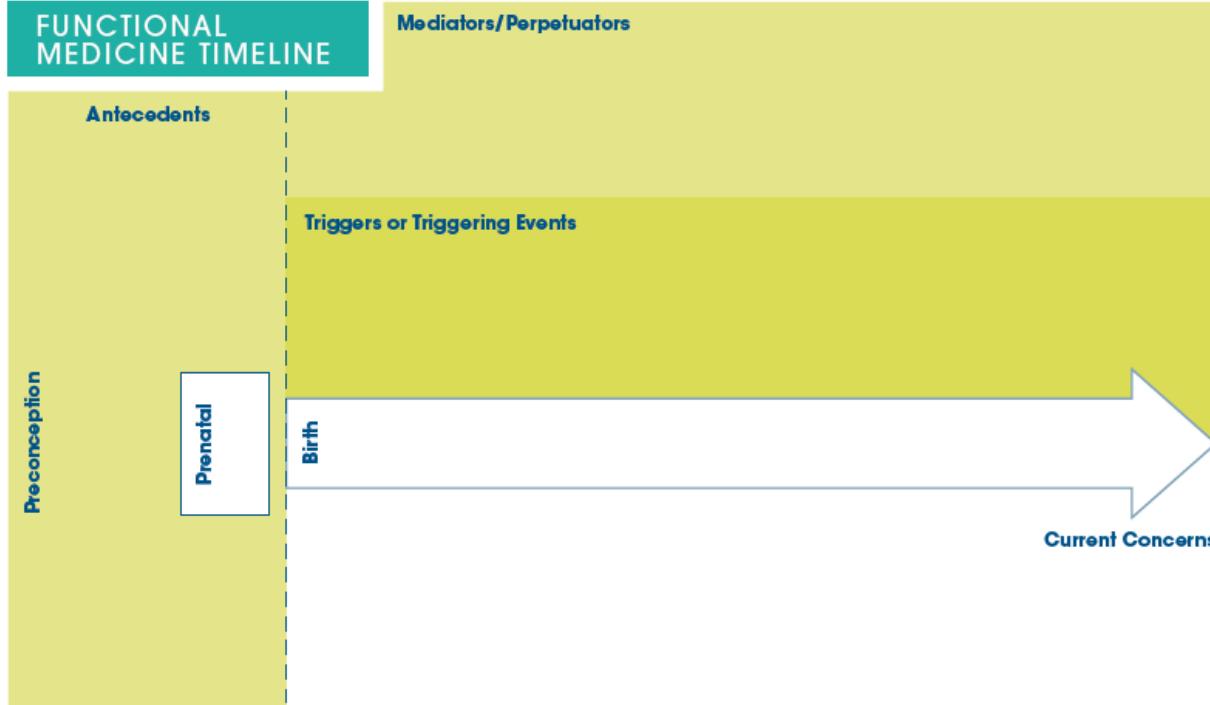
Child's Name: _____

Date: ____/____/____

Age: _____

Sex: Female Male

on Completing Form: _____



Leverage the time

- ▶ Use the team!
 - ▶ My staff help those with lower literacy to complete this information
 - ▶ Data entry in your chart
 - ▶ My intake questionnaire is arranged in the order of the fields in my EHR



Leveraging Follow-up Appointment Time

- Follow-up Intake Questionnaire: review prior to the visit
 - Lifestyle timelines
 - Symptom diaries – Patient empowerment and engagement
 - Sleep
 - Headache
 - Elimination diet/food reintroduction
 - Etc.

Complete In Morning								Complete at the End of Day							
Start date: <u> / / </u>	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day of week:	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Day of week:	_____	_____	_____	_____	_____	_____	_____	Day of week:	_____	_____	_____	_____	_____	_____	_____
I went to bed last night at _____	11:00 PM	I consumed caffeinated drinks in the: Morning, Afternoon, Evening,													



But how can patients afford this?

- ▶ Diagnostics
- ▶ Therapeutics
 - ▶ Use extra tools
 - ▶ Using support staff
 - ▶ Groups



Treatment

- ▶ Facilitating Complex Interventions with limited time:
 - ▶ Use your EHR: macros/"dot-phrases" - (toolkit resource)
 - ▶ Instructions for common supplements
 - ▶ Mnemonics for your notes/specific conditions – see my xSIBO
 - ▶ Warning s/sx for treatments (see my thyroid trial of therapy)
 - ▶ Handouts



Using Handouts in the Clinical Visit

- ▶ Limit the number to 2 per visit
- ▶ Literacy level appropriate – *a plea for your help*
- ▶ Personalize!

after adding back a food that causes symptoms.

If you have symptoms, cut out the last two foods you added until the symptoms decrease again.
Later, try these foods again, one at a time, to be sure which food you react to.

Removing Phase

The different strategies that can be used to design an elimination diet cut out increasing numbers of foods – the stricter the diet, the more likely it will identify the foods that are the problem, but the more difficult it will be to follow.

1. **Single Food Elimination.** The simplest elimination diet removes a single food that seems to have caused symptoms in the past, for instance dairy or wheat.
2. **Probability Multiple Elimination Diet.** When no single food can be identified as a suspect, a **probability multiple-elimination diet** may be designed to eliminate common offenders, i.e. foods that are known by previous experience with other patients to have a high probability of causing problems. For example, eliminate all the foods on the “Common Food Allergens” list on the other side.
3. **Oligoantigenic Diet** This diet limits the foods eaten to a very narrow list of foods that are not likely to cause reactions. For instance, pick one grain like rice, one or two meats, like lamb or turkey, one or two vegetables like zucchini or broccoli, and pears and eat nothing but these and salt and water.
4. **Modified Fast** Eat no food and drink only a hypoallergenic shake for the 10 day – 2 week period, or until symptoms improve.

Talk to your provider to decide which of these approaches is the right one for you.



Multimedia

- ▶ Cultivate online resources for patient education
 - ▶ Some links on im4us.org for back exercises, etc.
 - ▶ Advanced directive videos
 - ▶ Youtube videos on Feldenkrais, belly breathing, etc.
 - ▶ EFT training
 - ▶ Others: DrAxe.com, Chris Kresser's website, Mark Hyman, Joel Fuhrman
- ▶ Apps
 - ▶ Craving to Quit
 - ▶ Belly Bio
 - ▶ MyFitnessPal



Lending Library

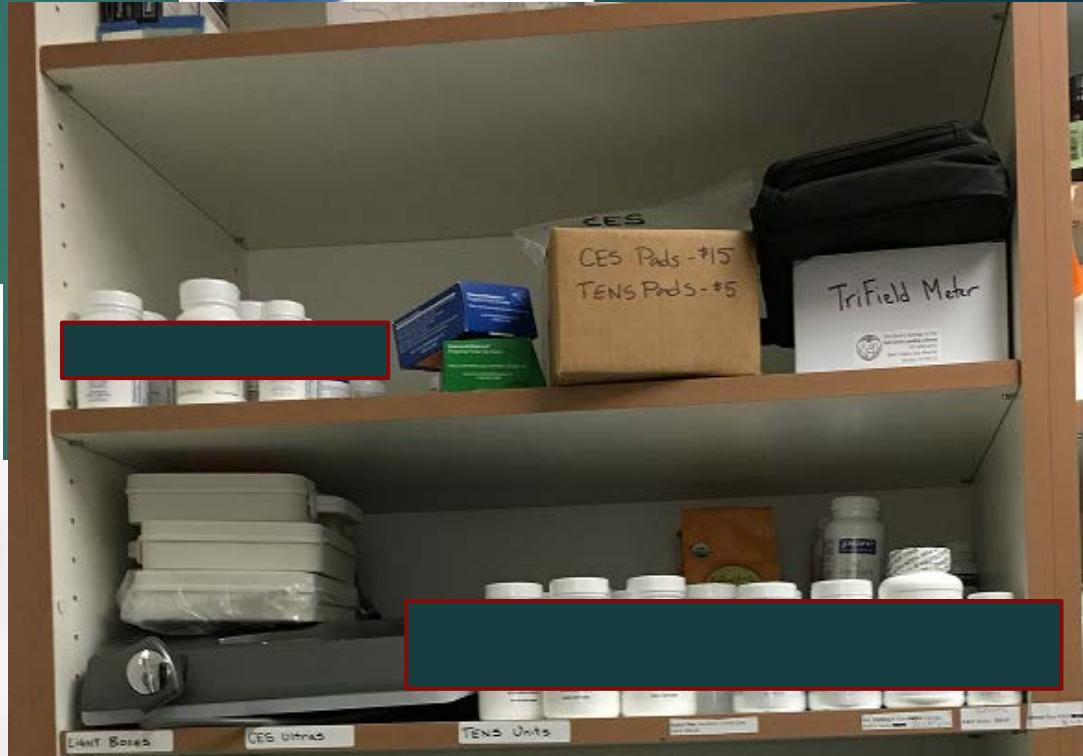
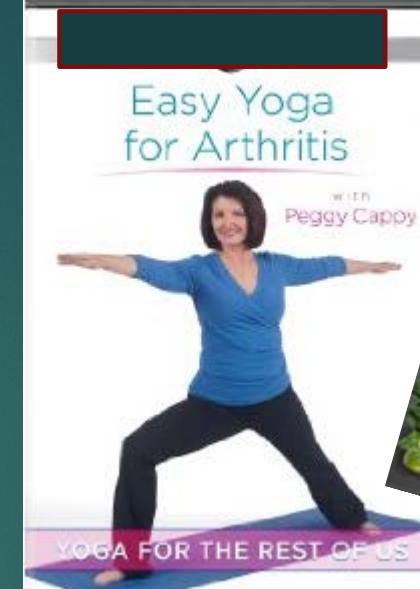


- ▶ Books
 - ▶ Your favorites to Recommend
 - ▶ In our office:
 - ▶ Feeling Good, When Panic Attacks, by David Burns
 - ▶ Forgive for good by Fred Luskin
 - ▶ The Mindbody Prescription by John Sarno
 - ▶ Eat to Live by Joel Fuhrman
 - ▶ The Healer Within by Roger Jahnke
 - ▶ Etc.
 - ▶ Cookbooks!
 - ▶ Audio
 - ▶ Relaxation, guided imagery
 - ▶ Recorded books



Lending Library

- ▶ Videos
 - ▶ Forks over Knives
 - ▶ Fat, Sick and Nearly Dead
 - ▶ Some cooking videos
 - ▶ (Novick's fast food), others
 - ▶ Yoga and other exercise videos
- ▶ Devices
 - ▶ Light boxes
 - ▶ CES units
 - ▶ TENs units
 - ▶ Bone stimulator
 - ▶ EMF monitor
 - ▶ Pulse oximeters



Making a Lending Library Work

- ▶ Stock the library with second-hand materials
- ▶ Accept donation from patients (with review by provider before incorporating materials)
- ▶ Volunteer to manage materials and make reminder calls
- ▶ TIMELY reminder calls much more effective
- ▶ Make copies of the more expensive CD's, DVD's



TOGETHER
EVERYDNE
AACHIEVES
MMORE

Team

- ▶ Invite the MA in as you are instructing someone for a test kit, counseling on the elimination diet, reviewing a handout, etc. and then they can do the next!
- ▶ Collaborate with others in the area
 - ▶ Neurofeedback therapist joined our office
 - ▶ Dieticians
 - ▶ Health Coaches
 - ▶ RN
 - ▶ Etc.



Pain **may** be mandatory, but suffering is optional

- ▶ Functional Approach to Chronic Pain
 - ▶ Addressing the sources of pain
 - ▶ Addressing the perception of pain
 - ▶ **Addressing the suffering associated with pain**

The definition of Healing may be different for different people, but there are opportunities for intervention at each of these levels



And my affordable pearl for relieving suffering. . .

► Healing Groups for People Living with Chronic Pain



From Dean Ornish. . .

- ▶ The Difference between Illness and Wellness
 - ▶ Illness
 - ▶ Wellness



From Dean Ornish. . .

- The Difference between Illness and Wellness
- I
- We



Group medical visits as a vehicle to deliver this care

- ▶ 8-10 Patients
- ▶ 2 hours
- ▶ Psychotherapist and physician
 - ▶ +/- guest speakers



Multidisciplinary Groups Incorporating CBT, Relaxation

- ▶ Pain. 1992 Mar;48(3):339-47. Comparison of cognitive-behavioral group treatment and an alternative non-psychological treatment for **chronic low back pain**. Nicholas MK, Wilson PH, Goyen J. The combined psychological treatment and physiotherapy condition displayed significantly greater improvement than the attention-control and physiotherapy condition at post-treatment on measures of other-rated functional impairment, use of active coping strategies, self-efficacy beliefs, and medication use. These differences were maintained at 6 month follow-up.
- ▶ **Cognitive-Behavioral Therapy for Somatization and Symptom Syndromes: A Critical Review of Controlled Clinical Trials**
K Kroenkea, R Swindlea, *Psychotherapy and Psychosomatics* 2000;69:205-215 (DOI: 10.1159/000012395)
- ▶ Pain. 1995 Nov;63(2):189-98. Relaxation and imagery and cognitive-behavioral training reduce pain during **cancer** treatment: a controlled clinical trial. Syrjala KL, Donaldson GW, Davis MW, Kippes ME, Carr JE.
- ▶ Arthritis Care Res. 1993 Dec;6(4):213-22. Cognitive-behavioral treatment of **rheumatoid arthritis** pain: maintaining treatment gains. Keefe FJ, Van Horn Y.
- ▶ Altern Ther Health Med. 1998 Mar;4(2):67-70. A pilot study of cognitive behavioral therapy in **fibromyalgia**. Singh BB, Berman BM, Hadhazy VA, Creamer P.
- ▶ J Pediatr. 2002 Jul;141(1):135-40. Physical therapy and cognitive-behavioral treatment for **complex regional pain syndromes**. Lee BH, Scharff L, Sethna NF, McCarthy CF, Scott-Sutherland J, Shea AM, Sullivan P, Meier P, Zurakowski D, Masek BJ, Berde CB.
and many others. . . .



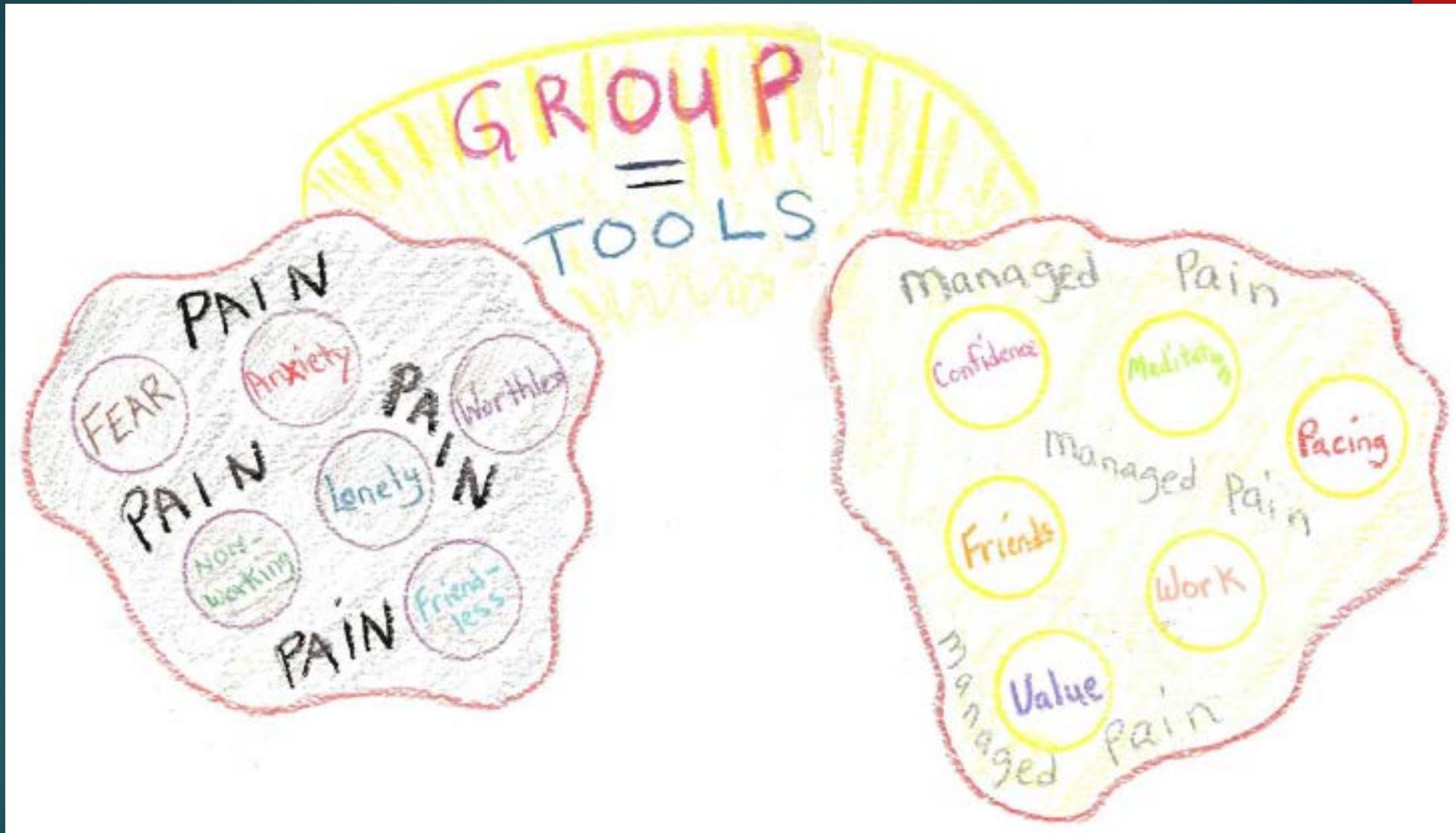
Improved outcomes

- ▶ Process outcomes
 - ▶ Adherence to guidelines for care (check microalbumin, foot exams, etc. – multiple studies)
- ▶ Patient Behaviors
 - ▶ Improved self-efficacy, quality of life Explore (NY). 2011;7(2):94-9
 - ▶ Improved medication compliance Jaber, J A Bd F Med 2006; 276-90
- ▶ Disease-related outcomes
 - ▶ Weight loss Trento *Diabetologia* 45:1231–1239, 2002
 - ▶ A1C Pi-Sunyer et al. *Diabetes Care* 30:1374–1383, 2007
 - ▶ Decreased low birth weight *Obstet Gynecol* 2003;102:1051
 - ▶ Improved blood pressure, cholesterol Jaber, J Am Board Fam Med 2006 ; 276-90



- Mindfulness-based stress reduction for failed back surgery syndrome
 - Statistically significant and clinically significant:
 - Increase in pain acceptance and quality of life
 - Decrease in functional limitation
 - Decrease in pain level
 - Decrease in frequency, potency of analgesics
 - Increase in sleep quality
 - J Am Osteopath Assoc. 2010 Nov;110(11):646-52





Other benefits of groups. . .

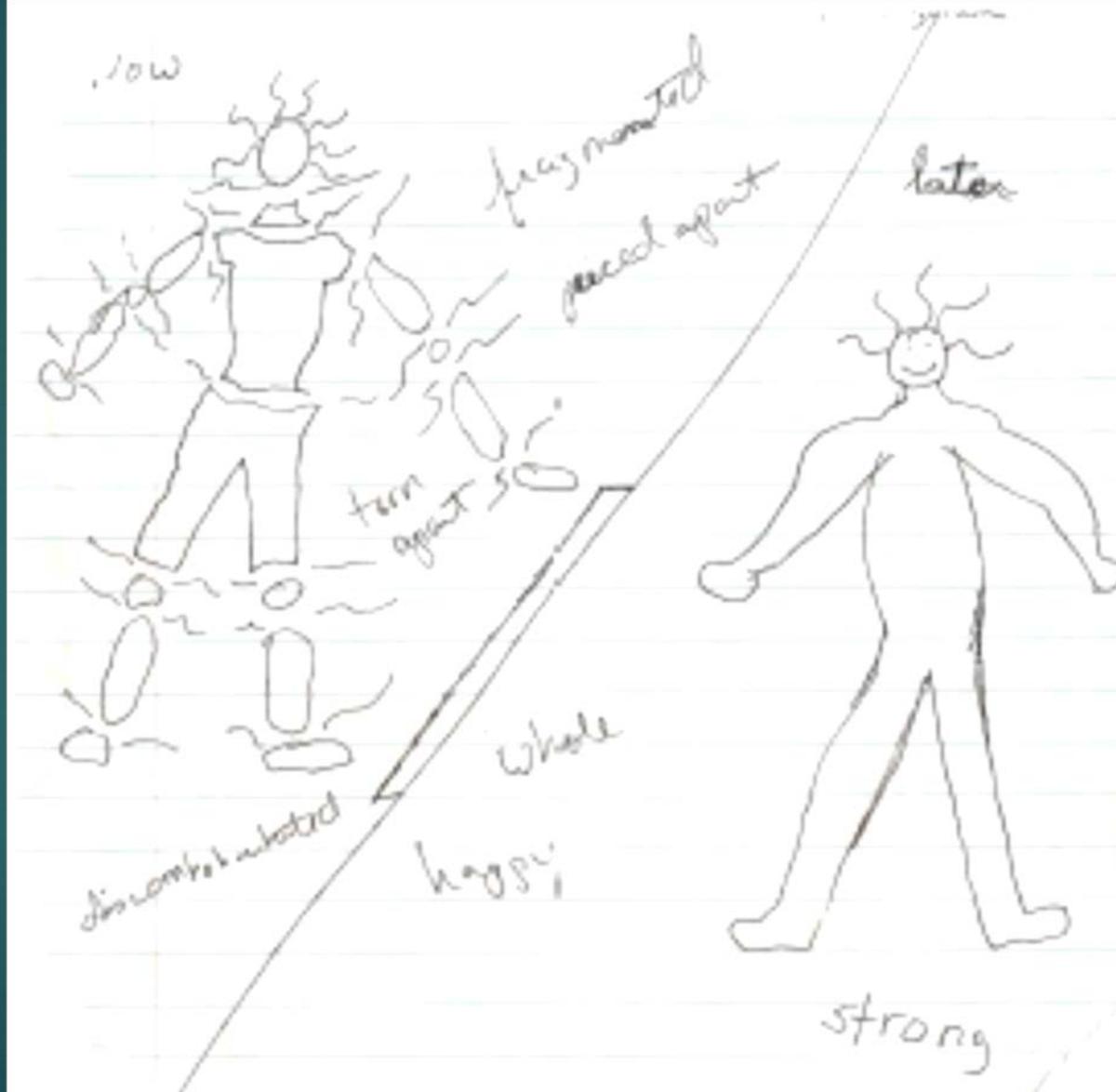
- ▶ Impact on Isolation
 - ▶ Joy Shared is Twice Joy
Sorrow Shared is Half Sorrow

“Being with other people who understand what it is to live with constant pain that has no end in sight and sharing our experiences in a safe environment has ended my feeling of isolation”

- ▶ The Buddy System – homework may include checking in with buddy daily about relaxation exercises
- ▶ The provider is no longer the sole source of emotional support!



Provider Burnout



Seeing people get
better is the best
antidote to burnout. . .



Logistics

- ▶ Who is already doing group visits?
- ▶ Any particular challenges?



Recruitment

- ▶ Advertising/Outreach

- ▶ To whom:

- ▶ Existing Patients
 - ▶ Patients from outside your clinic

- ▶ Mechanism

- ▶ Outreach Workers
 - ▶ Posters/Flyers
 - ▶ Letters to colleagues
 - ▶ Word-of-mouth



Retention

- ▶ Engaging Curriculum
- ▶ Incentives
 - ▶ e.g. Lottery tickets each session with drawings every 3rd – 4th session
- ▶ Influence of interval
 - ▶ Better retention with weekly groups
 - ▶ Falls off as interval increases
 - ▶ Calls between sessions may help
- ▶ Interval also impacts on billing however: medical necessity of visits must be met



Staffing

- ▶ Medical Providers
 - ▶ Continuity
 - ▶ Redundancy to allow for vacations/illness, etc.
- ▶ Adjunctive Professionals
 - ▶ Behavioral Health
 - ▶ Dietician
 - ▶ Yoga/tai chi/PT
 - ▶ Health Coach/Patient Educator
- ▶ Support staff/MA's
 - ▶ Initial attendance for vital signs/check-in
 - ▶ Participation throughout the group



Financial Aspects

- ▶ Potential to generate increased revenue
 - ▶ Ann Fam Med 2004; 2 Suppl 3:S1-S21
- ▶ Grant support
- ▶ E/M services billing
 - ▶ One author: Break-even point 10-12 patients
 - ▶ Other recommendations state 3x #patients you could see in individual visits in same time frame



E/M Services

- ▶ Document and code using E/M codes
 - ▶ Do NOT do time-based billing
- ▶ Alternate billing models
 - ▶ Bill every participant every time
 - ▶ Selective billing: Bill selected participants
 - ▶ One member of a family
 - ▶ Subset of participants depending on patient request, rotation
- ▶ Individualized notes are needed – usu 99213, 99214
 - ▶ See patients separately in separate space or Provide individual services in group
 - ▶ Value of feedback sheets to generate the note



Have patients complete documentation for you:

Feedback Sheet for Physician

Name: _____ Date: _____



1. Over the past 2 weeks has your pain level:
DECREASED _____ STAYED THE SAME _____ INCREASED _____ ALL OVER THE PLACE _____
What changes have you noticed? (Please be as specific as you can!) _____

2. Over the past 2 weeks has your emotional state:
IMPROVED _____ STAYED THE SAME _____ WORSENED _____ ALL OVER THE PLACE _____
What changes have you noticed? (Please be as specific as you can!) _____

3. Rate your average mood for the past 2 weeks:
VERY SAD 1 2 3 4 5 6 7 8 9 10 VERY HAPPY

4. Rate your average pain score for the past 2 weeks:
NO PAIN 1 2 3 4 5 6 7 8 9 10 VERY SEVERE PAIN

5. What goal did you set last time? _____

Did you accomplish it? (Y/N) _____ If you did not accomplish it, can you come up with a plan that might help you succeed by identifying the obstacle and a solution to the obstacle?

Obstacle _____

Solution _____



12. The following could be medication side effects or from your underlying condition. Are you feeling/experiencing:

Symptom(s): Indicate: yes or no	Medication(s) or other condition(s) you think caused it:	How did you deal with it:	Do you want suggestions?
Constipation:			
difficulty sleeping:			
dizzy, dopey:			
nausea/vomiting:			
difficulty waking in the morning:			
loss of libido:			
Any other symptoms or problems?			



More Logistics

- ▶ Locations
 - ▶ Conference Rooms
 - ▶ Waiting room use after-hours
 - ▶ Off-site locations
 - ▶ Possibilities and challenges
- ▶ Time of Visits
 - ▶ Morning vs afternoon – better in afternoon for most pain patients
 - ▶ Evening or Saturday for working patients
 - ▶ Daylight timing for those with driving issues
 - ▶ Beginning of half-day so provider can schedule individual visits afterwards



Clerical/Logistical Issues

- ▶ Identifying workflows for new processes
- ▶ Informing staff when groups are occurring
- ▶ Scheduling for group visits
 - ▶ Challenges with electronic scheduling systems
- ▶ HIPAA issues and forms
- ▶ Supplies
 - ▶ Nametags
 - ▶ Notebooks
 - ▶ Cooking/food prep materials
 - ▶ Physical activity supplies
 - ▶ Art supplies



Each Session

- ▶ Break up the time -
 - ▶ Lecture
 - ▶ Participation
 - ▶ Movement
- ▶ Check-in early in group
 - ▶ Avoid finding out about crises too late in the session
- ▶ Have a behavioral medicine person help lead groups
 - ▶ Physician can work on documentation, write refills, etc.
- ▶ Provide materials -
 - ▶ Notebook patients can refer back to in the future
 - ▶ Relaxation recording
- ▶ Assign buddies the first or second session
 - ▶ Reinforce doing the homework



Our groups:

- ▶ Check-in
 - ▶ Relaxation practice
 - ▶ Medical portion
 - ▶ CBT portion
 - ▶ Group medical visit – related to symptoms indicated by patients on feedback sheets
 - ▶ Closing and homework
-
- ▶ Provider feedback generally given in printed format, generated from EMR or an excel file while group underway



Planned Curriculum

- ▶ Logical series
 - ▶ Check-in relates to material from the time before
- ▶ Start by establishing understanding and trust
 - ▶ Keep it positive. Acknowledge suffering early on, but then:
 - ▶ Focus on goals
 - ▶ Gratitude Journal
- ▶ Develop self-soothing skills
- ▶ Generate a notebook that patients can refer back to later
- ▶ Ultimately introduce more challenging material like John Sarno's work



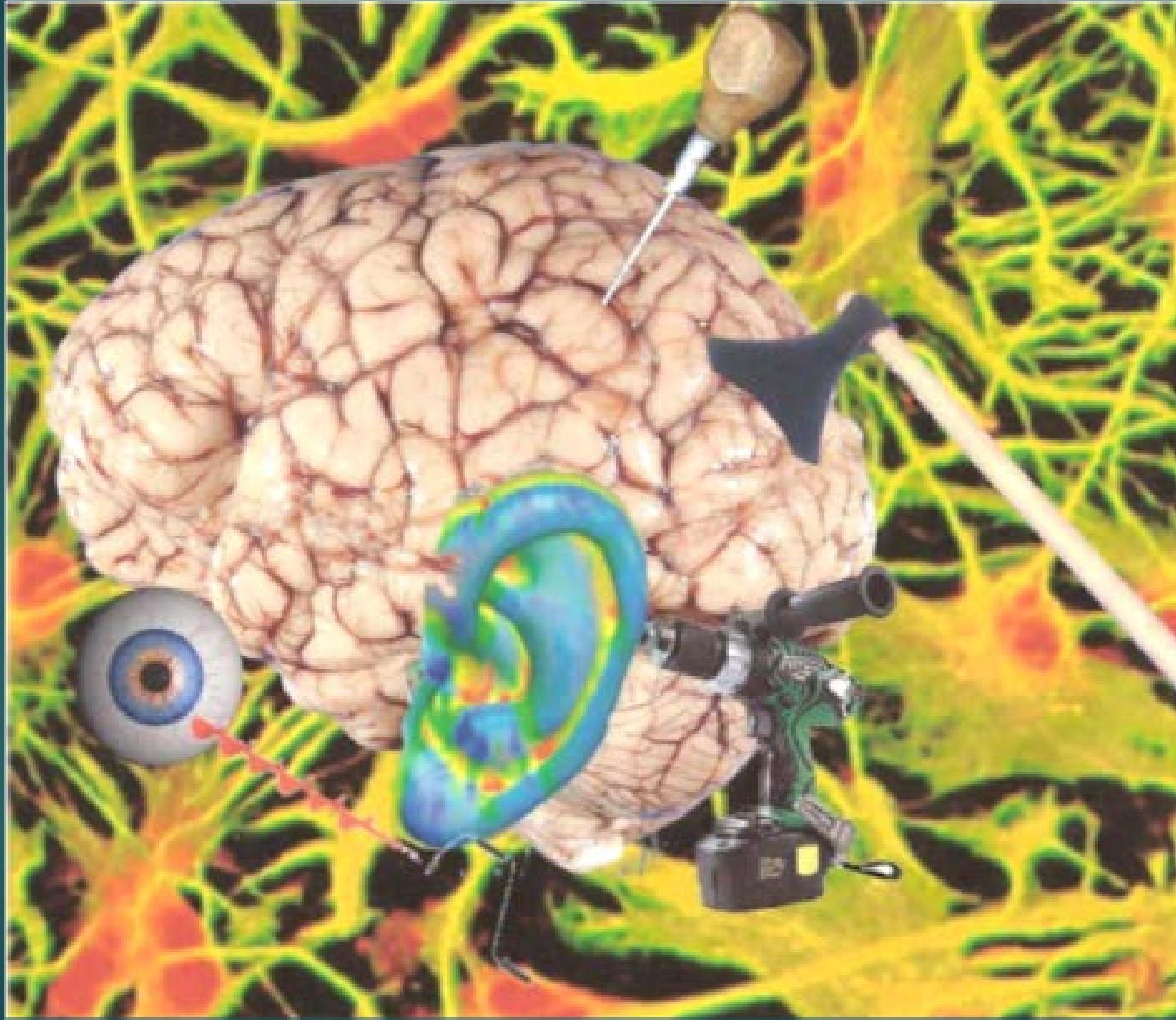


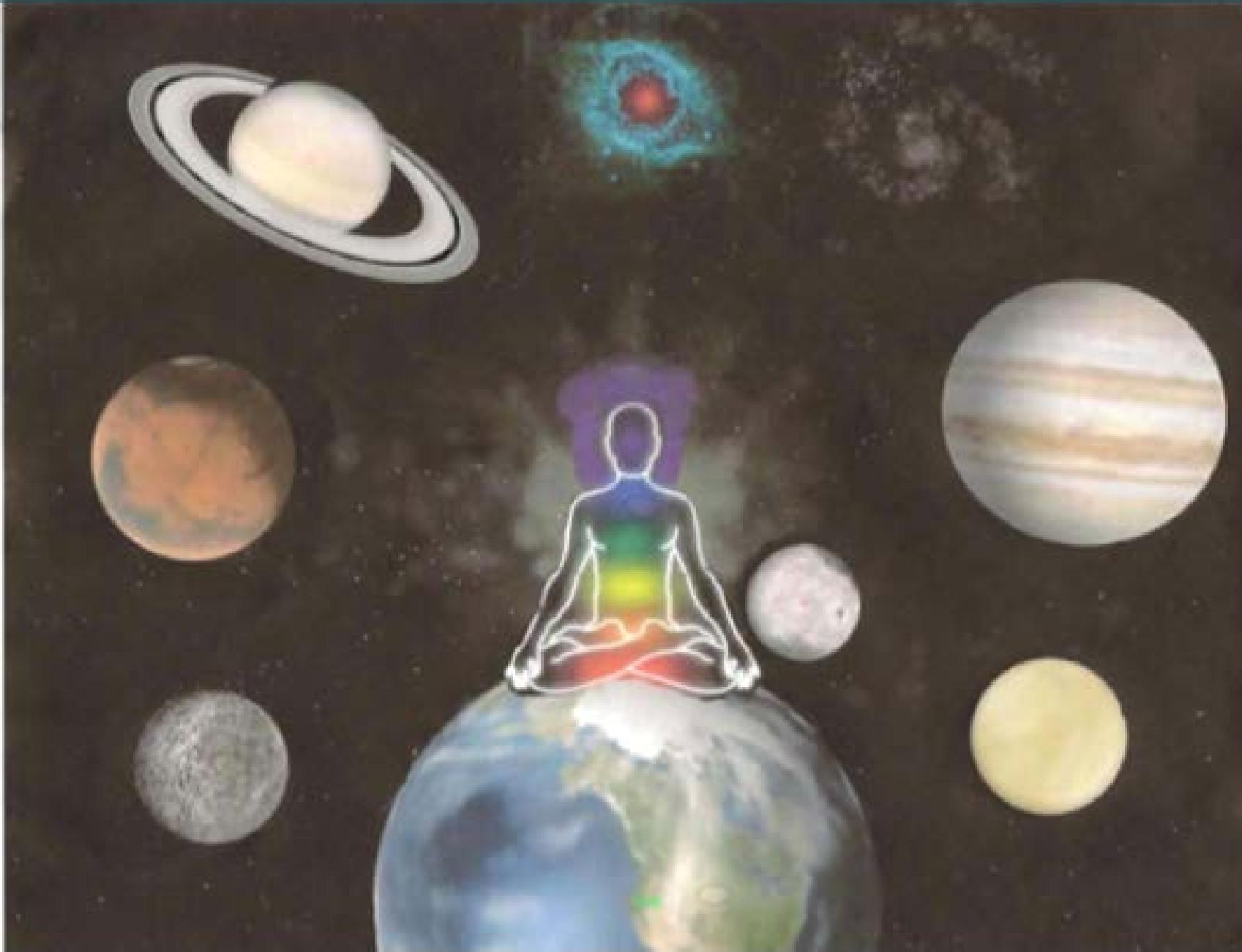
	Session 1	Session 2	Session 3	Session 4	Session 5
Relaxation Exercise	Abdominal Breathing	Mindful eating	Imagery - Safe place	Chair yoga	Body Scan
Medical Portion	Pain Physiology	Introductions Meaning of Pain exercise p.33 MPBMY		Nutrition 101 - add-ons (things to increase in the diet)	Nutrition 101 - tasks
	Stress and Relaxation				
CBT/Behavioral Portion	N/A	Intro to CBT Thoughts and feelings Prior buddies now or session 3 (review safe boundaries)	Pleasurable Activities Gratitude	Listening to Body/ Pacing p. 70 Pacing/adaptation/relaxation p.62	pacing, etc. Group share ergonomic ideas
Handouts	Medication Lists	Feelings pictures and list	Gratitude Journal		
	Outline	Feelings letters (caution with this in people who have a lot of baggage) - may want to delay until Samo or at least to cognitive restructuring;		Ergonomics handout	Mantra list
	Breathing	helpful in people who have little insight into their feelings	21 ways to reduce workplace stress 4.6-4.10		
Homework	Relaxation Response	Relaxation Response	Relaxation Response	Relaxation Response	Relaxation Response
	Pain Diary	Pain Diary, Feedback sheet	Pain Diary	Pain Diary	Pain Diary
	Self portrait exercise	Change Plan worksheet	Pleasurable activities -	Gratitude journal	Gratitude journal
			Gratitude journal		
			Nutrition log - 1 day		



- ▶ Relaxation
 - ▶ Diaphragmatic Breathing
 - ▶ Mindfulness
 - ▶ Mindful eating exercise
 - ▶ Body scan
 - ▶ Mindfulness with pain
 - ▶ Guided imagery
 - ▶ Mantra Meditation
 - ▶ Chair yoga
 - ▶ Tai chi
- ▶ Acupuncture
 - ▶ Scalp
 - ▶ Auricular
- ▶ Art
 - ▶ Self-portraits
 - ▶ Timeline/life path







Medical

Participatory lecture style

- Pain physiology
- Nutrition
- Exercise
- Sleep
- Supplements
- Hormones
- John Sarno
- Specific pain syndromes – migraine, fibromyalgia, etc

CBT

- Meaning of pain –
 - Roles, function
- Thoughts and feelings
- Gratitude, pleasurable activities
- Pacing
- Cognitive restructuring
- Forgiveness
- Communication
- Problem-solving



Healing Plan

Name:

Date:

Problems Diagnosed:

Risk Factors/Risk behaviors:

Strengths/Allies:

Goals:

Tools to use on an ongoing basis or resume in case of flare:

Diet/ Intestinal Health	
Exercise/Movement/Body Work	
Mind/Body/ Emotional Health/ Spirituality	
Vitamins/ NutritionalSupplements /Herbs	
Standard Medical Therapies (meds, hormones, etc.)	

Tools to use on an ongoing basis or resume in case of flare:

Diet/ Intestinal Health	Limiting sugar, juices, aspartame/MSG Anti-inflammatory <u>diet</u> - more vegetarian Elimination of allergens and irritants Nurture with healthy food
Exercise/Movement/Body Work	Yoga, Tai chi Walking Massage, chiropractic, osteopathy, acupuncture PT – recruiting muscles not used Feldenkrais
Mind/Body/ Emotional Health/ Spirituality	Meditation – scheduled. Variety of tools Moving as well as sitting, sensory depriv Gratitude Daily devotion/prayer Breathing Music Dog TV
Vitamins/ NutritionalSupplements /Herbs	Aromatherapy Passionflower Vitamin D, B12/B complex Magnesium Probiotics DHEA Turmeric and Boswellia , grapeseed, etc.
Standard Medical Therapies (meds, hormones, etc.)	TENS unit Thyroid Antinflammatories – w/stomach protection Opioids – with things for constipation Lidoderm Anticonvulsants – gabapentin Antidepressants Muscle relaxants

Pulling it Together

- ▶ The group fills in the blanks for the
 - ▶ Healing Plan
 - ▶ Panic Plan

Additional topics in Aftercare

- ▶ Advance Directives
 - ▶ ACEs and Resilience
 - ▶ PTSD and Pain
 - ▶ Companion and Therapy Animals
 - ▶ Toxics and Pain
 - ▶ Cannabis and Pain
 - ▶ Sugar and Pain
 - ▶ Emotional Brain Training
 - ▶ Headaches
 - ▶ More on Sleep
-
- ▶ Art Projects
 - ▶ How Full is Your Bucket
 - ▶ Letting Go and Hanging on
 - ▶ Worry dolls
 - ▶ Forgiveness revisited
 - ▶ Schubiner Workbook
 - ▶ Neuroplasticity and pain



Learn Self-efficacy

- ▶
- ▶ Pain makes us passive/the victim



Learn Self-efficacy

- ▶ Initial treatment may fail/cause flare
- ▶ Pain makes us passive/the victim



Learn Self-efficacy

- ▶ Persistence reduces pain episodes
- ▶ Initial treatment may fail/cause flare
- ▶ Pain makes us passive/the victim



Learn Self-efficacy

- ▶ Repetition changes conscious learning into unconscious learned expertise
- ▶ Persistence reduces pain episodes
- ▶ Initial treatment may fail/cause flare
- ▶ Pain makes us passive/the victim



Stretch Break



Addiction Treatment

"HELPING, FIXING, AND SERVING REPRESENT THREE DIFFERENT WAYS OF SEEING LIFE. WHEN YOU HELP, YOU SEE LIFE AS WEAK. WHEN YOU FIX, YOU SEE LIFE AS BROKEN. WHEN YOU SERVE, YOU SEE LIFE AS WHOLE. FIXING AND HELPING MAY BE THE WORK OF THE EGO, AND SERVICE THE WORK OF THE SOUL."

— **RACHEL NAOMI REMEN**



The paradox. . .

A single therapist behavior significantly predicted client drinking a year later

- ▶ The more the therapist confronted, the more the client drank $r(34)=0.65 \quad p<0.001$
- ▶ Confronting = challenging, disagreeing, head-on disputes, incredulity, sarcasm, emphasizing negative client traits

Journal of Consulting and Clinical Psychology 1993, 61(3):455-461



Motivational Interviewing

- ▶ Dancing rather than wrestling
- ▶ Outperformed traditional advice-giving in 75% of studies
- ▶ Results are even better than that when you optimize training and performance of the technique



Motivational Interviewing Philosophy In Groups

- ▶ Ask open-ended questions
- ▶ Avoid portraying judgment for what is shared
- ▶ Allow group members to generate the change talk
- ▶ Limit specific advice-giving in the group – evokes resistance
- ▶ Redirect for troubleshooting/brainstorming general or similar situations
 - ▶ Who has been through something like this?
 - ▶ What worked for you?



Support Self-efficacy

- ▶ Hold your own belief in the possibility of change, and share it
- ▶ Ask about previous areas where they have had success
 - ▶ If failure in the past, focus on the learning
- ▶ Praise any steps so far (even if it is just coming in today) as a sign of commitment
- ▶ Approach to dirty urine screens – my personal attitude



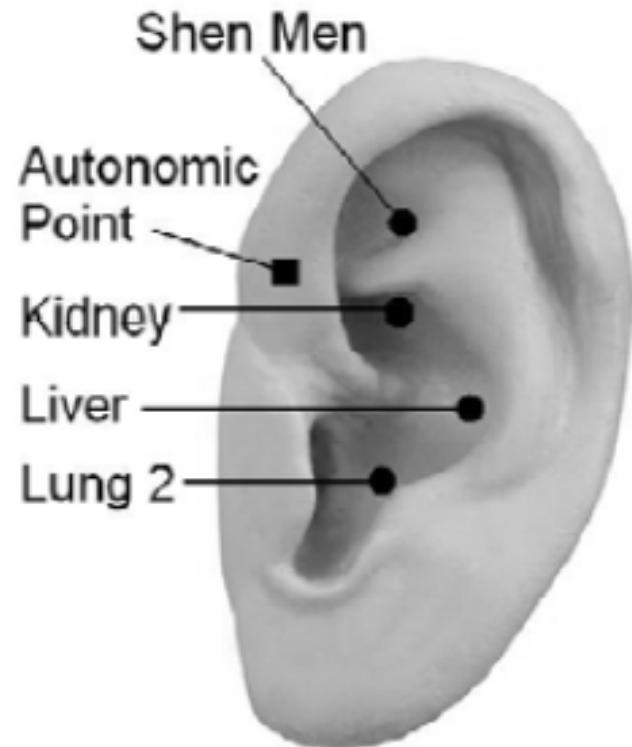
Curriculum

- ▶ Start with Safety/Harm Reduction
- ▶ 1st Step Equivalents –
 - ▶ Some caution on allowing major horror stories to dominate
- ▶ CBT topics overlap with the chronic pain curriculum
- ▶ Relaxation practices are also helpful
- ▶ ACES, Resilience, PTSD once there is some trust
 - ▶ SeekingSafety.org
- ▶ Art projects

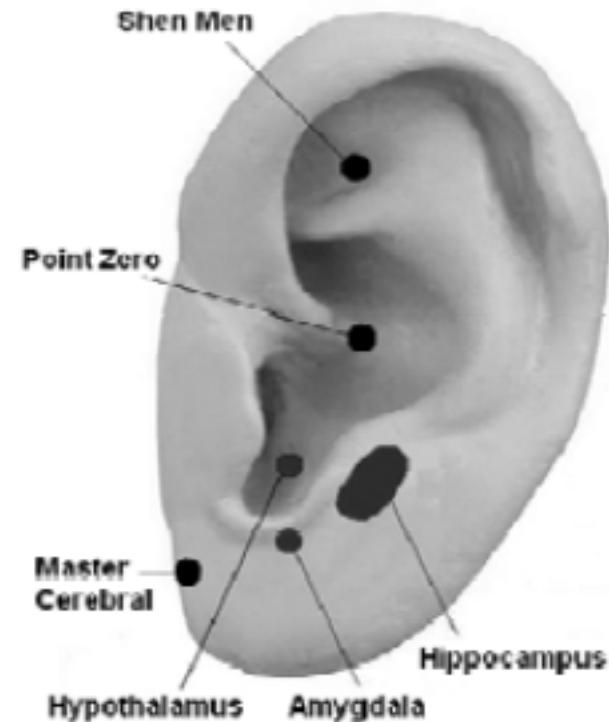


A few other pearls

NADA Points



Auricular Trauma Protocol



Nux Vomica

- ▶ Effective in alcohol addiction in rats *British Homoeopathic Journal* 89 (2000): S63.
- ▶ Opioid treatment

	Number	Dropout before 48 hours	Dropout after 48 hours	Completed successfully (1 year)
Non-homeopathic	184	11%	23%	42%
Homeopathic	138	7%	15%	63%

Not randomized – self-selected whether to take a dose of Nux vomica 200C
Homœopathic Links 2015; 28(01): 054-056

- ▶ Other homeopathics for acute withdrawal: Arsenic album, Nux-vomica, Ipecac, Chamomilla, Rhus tox, Pulsatilla
 - ▶ Significantly better than placebo for Sneezing, Yawning, Abdominal pain, Lachrymation and Irritability P< 0.05

Indian Journal of Research in Homoeopathy Vol. 3, No. 1, January-March 2009



DLPA

- ▶ DLPA (DL-phenylalanine) 550 mg 2 pills twice a day or three times daily for mood or pain
 - ▶ The D-phenylalanine blocks enkephalinase

Minimal research, but I have seen benefit

- ▶ As effective as imipramine in depression Arch Psychiatr Nervenkr (1970). 1979 Jul 4;227(1):49-58.
- ▶ May potentiate opiate analgesia Russell, A.L. et al. Medical Hypotheses , Volume 55 , Issue 4 , 283 - 288



Some favorite resources:

- ▶ Everything by Lorimer Moseley
 - ▶ Ted Talk "Why Things Hurt"
 - ▶ Other youtube talks by him and Butler
 - ▶ Books: Explain Pain, The Protectometer, Painful Yarns
- ▶ Norman Doidge
 - ▶ The Brain that Changes Itself (book and film) and The Brain's Way of Healing
 - ▶ Neuroplastix – Michael Moskowitz
- ▶ John Sarno –
 - ▶ Youtube 20/20 segment
 - ▶ The Mindbody Prescription, The Divided Mind
- ▶ Schubiner
 - ▶ Unlearn Your Pain
- ▶ From Fatigued to Fantastic by Jacob Teitelbaum

Materials from our healing groups are at <https://tinyurl.com/FCCGroupMaterials>
(contact me at connieb@fullcirclemed.org for access to 2018 materials)

