“The reign of pain lies mainly in the brain”
Clinical and research perspectives on chronic non-structural pain

Gold or Pyrite?

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www.unlearnyourpain.com
A 52-year-old woman with neck and head pain for 37 years

What are your goals?
Realistic hopes to convey?
Having fun yet?
The state of pain therapy

Back surgery not better than conservative care in several studies

Injections not better than placebo in meta-analyses

Opioids can cause increased pain and can be dangerous

Psychological therapies have small to moderate effects on pain

None better than another, including Relaxation, CBT, Mindfulness and ACT

Why? Diagnosis, Coping model, Role of emotions

Prevalence estimates of degenerative spine imaging findings in asymptomatic patients, \( n=3300 \)

<table>
<thead>
<tr>
<th>Imaging Finding</th>
<th>Age (yr)</th>
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<tbody>
<tr>
<td></td>
<td>20</td>
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<tr>
<td>Disk degeneration</td>
<td>37%</td>
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<tr>
<td>Disk bulge</td>
<td>30%</td>
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<tr>
<td>Disk protrusion</td>
<td>29%</td>
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<tr>
<td>Annular fissure</td>
<td>19%</td>
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<tr>
<td>Facet degeneration</td>
<td>4%</td>
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<tr>
<td>Spondylolisthesis</td>
<td>3%</td>
</tr>
</tbody>
</table>

Two things I’ve learned since medical school:

The power of the mind
The nature of pain
The power of the (subconscious) mind

Conversion
PNEA/PNES
Death
Contagious symptoms
Stress-related symptoms
Hallucinations
Canadian construction worker
UK construction worker

Vietnam War Injury
Pain as a dynamic process

- All pain is real. There is not real pain and imaginary pain.

- All pain is activated by the danger/alarm mechanism in the brain.

- Pain can be triggered or generated by tissue damage and also by neural pathways (in the absence of tissue damage)

- Chronic activation of danger pathways can lead to chronic pain; Pain-Fear-Pain cycle
Success of lumbar surgery based upon degree of childhood trauma

Association of victimization and pain

Childhood adversities (divorce, family conflict, sexual abuse, physical abuse, etc.) and adulthood experience of conflict and victimization are elevated in people with migraine headaches, interstitial cystitis or painful bladder), pelvic pain (and irritable bowel syndrome

Goodwin, et. al. 2003; Sumanen, et. al. 2007; Latthe, et. al. 2006; Meltzer-Brody et al., 2007; Mayer, et. al., 2001
Back pain chronification: Emotions at onset linked to lack of recovery

Functional connectivity between NAc and PFC predicts chronic back pain

Emotion-related circuitry increases in persistent back pain

Hashmi, et. al., Brain 2013: 136; 2751–2768
Emotional pain equivalent to physical pain

**Figure 1** Currently proposed members of the CSS family with overlapping relationships and a common pathophysiological link of CS. IBS, irritable bowel syndrome; T-T headache, tension-type headache; TMD, temporomandibular disorders; MPS, myofascial pain syndrome; RSTPS, regional soft-tissue pain syndrome; PLMS, periodic limb movements in sleep; MCS, multiple chemical sensitivity; FUS, female urethral syndrome; IC, interstitial cystitis; PTSD, posttraumatic stress disorder. Depression may also be a member (see text). Modified from reference 198.
<table>
<thead>
<tr>
<th>AGE</th>
<th>LIFE EVENT</th>
<th>PATHWAY</th>
<th>SYMPTOMS</th>
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<tbody>
<tr>
<td></td>
<td>Stress/Hurt</td>
<td>Danger</td>
<td>!</td>
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<td></td>
<td>Stress/Hurt</td>
<td>Danger</td>
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<td></td>
<td>Stress/Hurt</td>
<td>Danger</td>
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</table>
Review of systems
For each of the following, check yes if you have had this symptom or condition and indicate the year it began; check again if it is still present.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Yes?</th>
<th>Began when</th>
<th>Still present?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heartburn, acid reflux</td>
<td>x</td>
<td></td>
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<tr>
<td>Ulcer symptoms or stomach pains</td>
<td>x</td>
<td>2005</td>
<td></td>
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<tr>
<td>Hiatal hernia</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Irritable bowel syndrome</td>
<td></td>
<td></td>
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<tr>
<td>Colitis, spastic colon</td>
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<tr>
<td>Tension headache</td>
<td>x</td>
<td>2019</td>
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<tr>
<td>Migraine headache</td>
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<tr>
<td>Eczema</td>
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<tr>
<td>Anxiety symptoms and/or panic attacks</td>
<td>x</td>
<td></td>
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<tr>
<td>Depression</td>
<td></td>
<td></td>
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<tr>
<td>Obsessive-compulsive thought patterns</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Eating disorders</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Insomnia or trouble sleeping</td>
<td>x</td>
<td>2005</td>
<td>yes</td>
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<tr>
<td>Fibromyalgia</td>
<td>x</td>
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<tr>
<td>Bell’s palsy, facial paralysis</td>
<td></td>
<td></td>
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<tr>
<td>Back pain</td>
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<tr>
<td>Neck pain</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Shoulder pain</td>
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<td></td>
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<tr>
<td>Repetitive stress injury</td>
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<tr>
<td>Reflex sympathetic dystrophy (RSD)</td>
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<tr>
<td>Temporo-mandibular joint syndrome (TMJ)</td>
<td>x</td>
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<td>Chronic tendinitis</td>
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<td>Carpal tunnel syndrome</td>
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<tr>
<td>Trigeminal neuralgia, facial pain</td>
<td>x</td>
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<tr>
<td>Numbness, paresthesias</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Fatigue or Chronic fatigue syndrome</td>
<td></td>
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<tr>
<td>Palpitations</td>
<td>x</td>
<td></td>
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<tr>
<td>Hyperventilation</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Spastic bladder</td>
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<tr>
<td>Interstitial cystitis</td>
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<tr>
<td>Prostate problems</td>
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<td></td>
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<tr>
<td>Pelvic pain</td>
<td>x</td>
<td>2020</td>
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<tr>
<td>Muscle tenderness</td>
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<td></td>
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<tr>
<td>Tachycardia or low blood pressure</td>
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<tr>
<td>Tinnitus</td>
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<td></td>
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<tr>
<td>Dizziness</td>
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<td></td>
<td></td>
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<tr>
<td>Other symptoms (please list)</td>
<td>x</td>
<td>2019</td>
<td></td>
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</tbody>
</table>
Diagnosing Psycho-Physiologic Disorders: Looking for diagnostic certainty

Difficult childhood—priming events

Associated Central Sensitization symptoms—list all/any age

Details of injury and healing process

Symptoms inconsistent—triggers, anticipation, variable

Onset/exacerbation marked by stress

PE not significant, not matching imaging

Tests normal or within “normal aging”

Rule out a structural disorder/rule in PPD
Diagnosing Psycho-Physiologic Disorders: Common patterns

“I woke up with it”

“It shifts from one spot to another”

“It started here, but has now spread”

“It was on one side and now it’s on the other as well”

“It went completely away when I was in ___”

“My doctor’s don’t understand it” or “They told me it’s X, Y, Z, etc.”
Great Rx for the Few Who “Get It”
What patients need to “get”

- Your symptoms are real, but they will not harm you
- Your brain has been sensitized and is creating symptoms
- Symptoms are due to neural pathways
- Most people have this, at least to some degree
- This is not your fault; You can get better
Psychophysiological Disorder (PPD) Interventions

Education—understanding PPD, believing in PPD, confidence in self

Behavioral interventions—stopping fear, taking control of symptoms, challenging triggers, meditation/visualization

Psychotherapy—uncovering and dealing with connections between life experiences/symptoms

Emotional interventions—ISTDP “styled” exercises, emotive writing, emotions underlying painful experiences

Life changes—acting with assertiveness/love/letting go/forgiveness, finding meaning/peace/joy
I am 21 months post-op (3rd back surgery, a 3-level fusion this time. 21 months spent trying every therapy in the book, anything and everything to get out of enormous unrelenting back pain. [On top of 22 years of constant chronic limiting back pain.] With no success......

My doctor sent me the link to your website 6 days ago; I went to it the next day; *considered* the possibility that yes, maybe this could apply to me......came back a day later to read all the material more seriously and realized: absolutely, this describes me to a "T." With that shift in belief the back pain subsided------almost like "poof!"------it went from like a 7 to a 1 on the pain scale, to off the pain scale onto a "discomfort" scale. I believe this was totally due to the complete shift in my belief system-----no half way for me.....a total realization: this is me.
Behavioral interventions

- Affirmations to reduce fear/combine with pain inducing movements
- Activate power and separation/indifference and outcome independence: “genuine indifference”
- Move forward with movements, activities, work
- Meditate/visualize
- Calm the nervous system/affirm health
“I had a huge success today. I was in quite a bit of pain but super determined to walk in the neighborhood. I said to my subconscious mind: "I am walking today despite the pain. You can make it easy for me or you can make it difficult. But I am doing it!" I walked about a half an hour and my pain lessened considerably. This was a huge breakthrough for me and means the program is working! I am astonished. I cannot believe it.”
Meta-analysis: Intensive Short-Term Dynamic Psychotherapy for somatoform disorders

14 randomized, controlled studies, primarily European, 2 in the US
Effect sizes for psychological variables and somatic symptoms were moderate, 0.58-0.78
Studies which emphasized emotional experiencing and processing had higher effect sizes: 0.6-1.1 short term, 0.8-1.3 longer term (~0.3-0.5 for CBT, ACT)

E.S., 51, engineer with neck and thoracic pain for 5 years

Dx: DDD and ten bulging discs,

Rx: P.T. X 2, chiropractic, epidurals, acupuncture, many pain meds, considering surgery

Hx: neck and thoracic pain, sick days for severe pain, no radiation, worse with sitting, bending, restricted activities, apathetic, depressed about pain

PE: normal muscle strength, reflexes, and sensation; muscles tight, pain with movement
Data from Providence Hospital Mind Body Program

75 patients, mean age 51, mean pain duration 8.8 years, baseline pain 5.1/10, 57% with significant childhood trauma, mean # of Sx 13.5, CC: 45% FM, 45% neck and back pain

>30% Improvement: Post-tx 64%; 6-mo. 67%

>50% Improvement: Post-tx 43%; 6-mo. 53%

RO1: CBT vs. EAET for Fibromyalgia

NIH-funded, 2-site, 3-arm, allegiance-controlled RCT: Wayne State University, University of Michigan and Providence Hospital

Patients: n = 230 (94% female, M = 49 years old): Cluster randomized (~ 6 patients / group)

8 sessions, 90-min, once per week, small group

Assessments: Baseline, post-treatment, and 6-month follow-up

CBT vs. EAET for Fibromyalgia

Pain ratings (means):

Post: EAET < Control; CBT no effect

6-month: no difference

Patients with 50% pain reduction from baseline:

Post: EAET (17%) > CBT (6%), Control (7%); NNT=9

6-month: EAET (22%) > CBT (9%), Control (11%); NNT=7

Percentage of Patients in Each Treatment Reporting 50% Pain Reduction from Pre-treatment on Brief Pain Inventory at Post-treatment and 6-Month Follow-up

- Emotional Awareness and Expression Therapy: 17.1% at Post-Treatment, 21.9% at 6-Month Follow-up
- Cognitive Behavioral Therapy: 6.5% at Post-Treatment, 8.5% at 6-Month Follow-up
- FM Education: 7.2% at Post-Treatment, 11.4% at 6-Month Follow-up

* Significant difference
+ Trend towards significance
## Two treatment models for chronic pain

<table>
<thead>
<tr>
<th></th>
<th>Pain clinic</th>
<th>PPD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Etiology</strong></td>
<td>Tissue damage/??</td>
<td>Neural pathways</td>
</tr>
<tr>
<td><strong>Search for underlying cause</strong></td>
<td>Examine body</td>
<td>Examine life and emotions</td>
</tr>
<tr>
<td><strong>Chance for reversal</strong></td>
<td>Little</td>
<td>Possible</td>
</tr>
<tr>
<td><strong>Interventions</strong></td>
<td>Injections, meds, procedures</td>
<td>Educational, Behavioral, Emotional</td>
</tr>
<tr>
<td><strong>Psychological goals</strong></td>
<td>Learn to cope with pain</td>
<td>Unlearn pain pathways, fix life</td>
</tr>
</tbody>
</table>
Models of care:

Matching Treatments?

Back pain due to life stress, not DDD

Back pain due to ankylosing spondylitis

Back pain due to metastatic cancer

Patient preference factors
A 52-year-old woman with neck and head pain for 37 years

Evangelical family, teen MJ use once, strong reactions, guilt, pain.

A new understanding, altering reactions to pain, and expressing feelings led to resolution of pain.
Compassion is key: For the provider and for the patient

“The true basis of the good bedside manner is a large heart.”
--Francis Peabody.

JAMA 1892, 18: 203-204
Psychophysiologic Disorders

Stress and unresolved emotions create real, physical pain via neural pathways.

No disease process in the body, i.e., physiological, but not pathological changes.

Symptoms are a message created by subconscious processes.

Pain and other symptoms can persist for years due to learned neural pathways.

Reversal of mind body symptoms can occur by cognitive, behavioral and affective interventions.
“Working in the field of pain management for many years, I was aware that chronic pain could occur from traumatic experiences. But we didn’t know how to use that knowledge. We could only offer support and help them cope with their pain when medications and injections were only partially helpful. Since I have understood that the mind commonly generates pain and learned how to recognize that process, I realize that the majority of my patients have a psycho-physiologic disorder and that many of them can recover.” --Joel Konikow, MD, Swedish Hospital Pain Center, Seattle
Gold or Pyrite?
You decide....

Key Colleagues: Mark Lumley PhD, Alan Abbass MD, John Sarno, MD, many others

Thank you!!