



Controversial Diagnosis: Fibromyalgia, CFS, Multiple Chemical Sensitivity, CRPS

Carl Shin
Center for Interdisciplinary Spine

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CONTROVERSIAL DIAGNOSES

- › Fibromyalgia
- › Chronic Fatigue Syndrome
- › Multiple Chemical Sensitivity
- › Chronic Regional Pain Syndrome



Fibromyalgia

› Fibromyalgia:

- Widespread pain, fatigue, insomnia
- No objective biomarker
- Autonomic dysfunction, not sure which is first, symptoms or autonomic dysfxn
- Patients are typically sedentary, 10 hours per day

› Treatment:

- Meds, pain relievers but no opioids; Antidepressants, Gaba/Lyrica
- Therapy, counseling



Chronic Fatigue Syndrome

› Chronic fatigue syndrome:

- Profound fatigue, cognitive dysfunction, insomnia
- Autonomic dysfunction.
- NO Biomarkers, NO recognized mechanism.

› Treatment:

- There is NO cure,
- CBT (talk therapy) and graded exercise.



Multiple Chemical Sensitivity

- › An increased sensitivity to chemicals in the environment attributed to prior chemical exposure

Hopkinsmedicine.org:

- At this time it is a controversial issue as to whether or not it is a clinical diagnosis.

WebMD.com:

- There are no reliable tests for diagnosis, and no effective or proven treatments.
- Those feelings are real. But they can happen for many reasons. The question is whether MCS is an illness.
- *The American Medical Association doesn't consider multiple chemical sensitivity to be an illness.*

Multiple Chemical Sensitivity

2018 review, Int Arch of Occ and Env M

- Evidences are consistent with MCS to be the result of processing of sensorial ascending pathways, where personality traits constitutes the underpinning needing multidisciplinary clinical approach.
- Moderate evidences show that sensory pathways are especially with respect to information processing related cortical areas. Recent studies suggest alterations of attention bias, sensitization and limbic kind of subclinical organic alterations along sensory pathways.

OMG

I have finally discovered
what's wrong with my brain:
on the left side, there is
nothing right, and on the
right side there is
nothing left!!





Poll Question

Fibromyalgia, chronic fatigue syndrome, multiple chemical sensitivity and CRPS are controversial diagnoses because:

1. They are not all recognized as real conditions by AMA
2. They are mostly psychological conditions manifest with physical symptoms
3. There are no biomarkers and are difficult to treat with no "fixes"

Not so Controversial... Allergies

- › BMJ 1989, Hay Fever, Hygiene, and Household Size:
 - Larger household, younger siblings had less hay fever
- › Sucking on Pacifier studies (2013, 2018):
 - Parents who sucked on pacifier to clean had healthier kids
- › An Elegant Defense 2019:
 - You should pick your nose... and eat it
 - Dropped food on floor, "please pick it up and eat it,"- Dr. Lemon, a dermatologist in Denver treating allergies and autoimmune disorder
 - Antibacterial soap or hand sanitizers? No
 - Our Immune System is poorly trained... and it can overreact
 - 50% increase in food allergies, 69% increase in skin allergies in American children last 20 years



Chronic Regional Pain Syndrome

› Chronic Regional Pain Syndrome:

- 1. Severe, outlandish regional pain
- 2. Temperature difference
- 3. Skin changes
- 4. Motor changes
- 90% caused by trauma (from fracture to a needle stick). Most common from fracture with immobilization in a cast.
- Damage to central and peripheral nervous system
- Abnormal response that magnifies the effect of the injury.

Treatments:

Injectations, Meds, Spinal Cord Stim, Botox...
Movement, stimulation, Talk therapy, Guided motor imagery

Clinical Diagnostic Criteria (Budapest Criteria) for Complex Regional Pain Syndrome			
	A - D must apply for a confirmed diagnosis of CRPS		Y/N
A	Continuing pain, which is disproportionate to any inciting event.		
B	Must report at least one symptom in <i>three</i> of the <i>four</i> following categories:		
	Categories	Description	Y/N
	Sensory	Reports of hyperesthesia and/or allodynia	
	Vasomotor	Reports of temperature asymmetry and/or skin colour changes and/or skin colour asymmetry	
	Sudomotor/ Oedema	Reports of oedema and/or sweating changes and/or sweating asymmetry	
	Motor/ Trophic	Reports of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)	
C	Must display at least one sign * at the time of the evaluation in <i>two</i> or <i>more</i> of the following categories:		
	Categories	Description	Y/N
	Sensory	Evidence of hyperalgesia (to pinprick) and/or allodynia (to light touch and/or deep somatic pressure and/or joint movement)	
	Vasomotor	Evidence of temperature asymmetry and/or skin colour changes and/or skin colour asymmetry	
	Sudomotor/ Oedema	Evidence of oedema and/or sweating changes and/or sweating asymmetry	
	Motor/ Trophic	Evidence of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)	
D	There is no other diagnosis that better explains the signs and symptoms.		
* A sign is counted only if it is observed at time of diagnosis			
For research diagnostic criteria the patient must report at least one symptom in each of the 4 categories in part B			

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Mystery: Pain symptoms in the body cannot be explained by any damage or inflammation of peripheral tissue.

Overlapping functional pain disorders:

- *Functional GI disorder, IBS, nonulcer dyspepsia, esophageal dysmotility*
- *Interstitial cystitis, chronic prostatitis, vulvodynia*
- *TMJ*
- *Whiplash, LBP, CPS(chronic pain syndrome)*



What we see is not what we get!
Injury does not explain the persistent symptoms.

ANOTHER STRANGE HUMAN AILMENT

Tinnitus:

- › 50 million Americans suffer from this
- › 10 mil seek help.
- › Tinnitus is a sensation of consciousness created by the brain.
- › Treatment is learning how to ignore it, with relaxation exercises/stress management to eliminate patient's anxiety and to habituate to the noise.

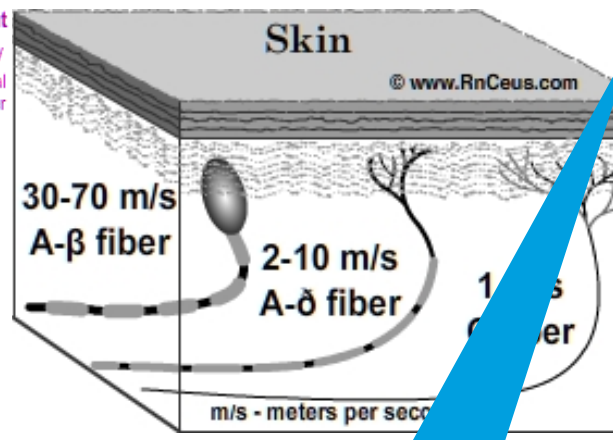
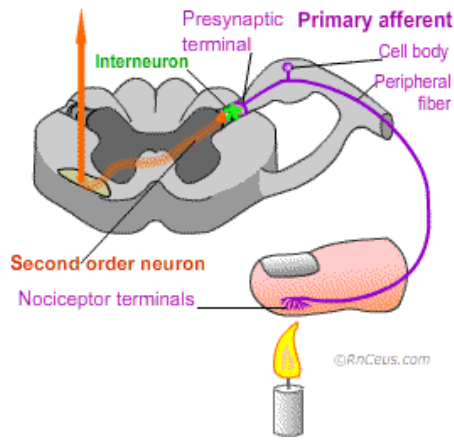




Poll Question

In Fibromyalgia, CFS, MCS and CRPS, pain symptoms in the body cannot be explained by any damage or inflammation of peripheral tissue.

TRUE OR FALSE



Activation of Pain
receptor/nerve

Nociception does not equal
Pain:

Firing rate of nociceptor does
not match pain:

- Room temperature pin causes 1 fire per 2 s
- Hot pin causes 10 activation per second.
- But no difference in pain experienced.

Nociceptors fire without tissue
damage (and vice versa):

- In either of the pin experiment, skin is not penetrated, and yet we feel pain
- After 15 s of painful stimuli nociceptors quiet down but pain continues.

The number of nociceptors
activated does not match pain:

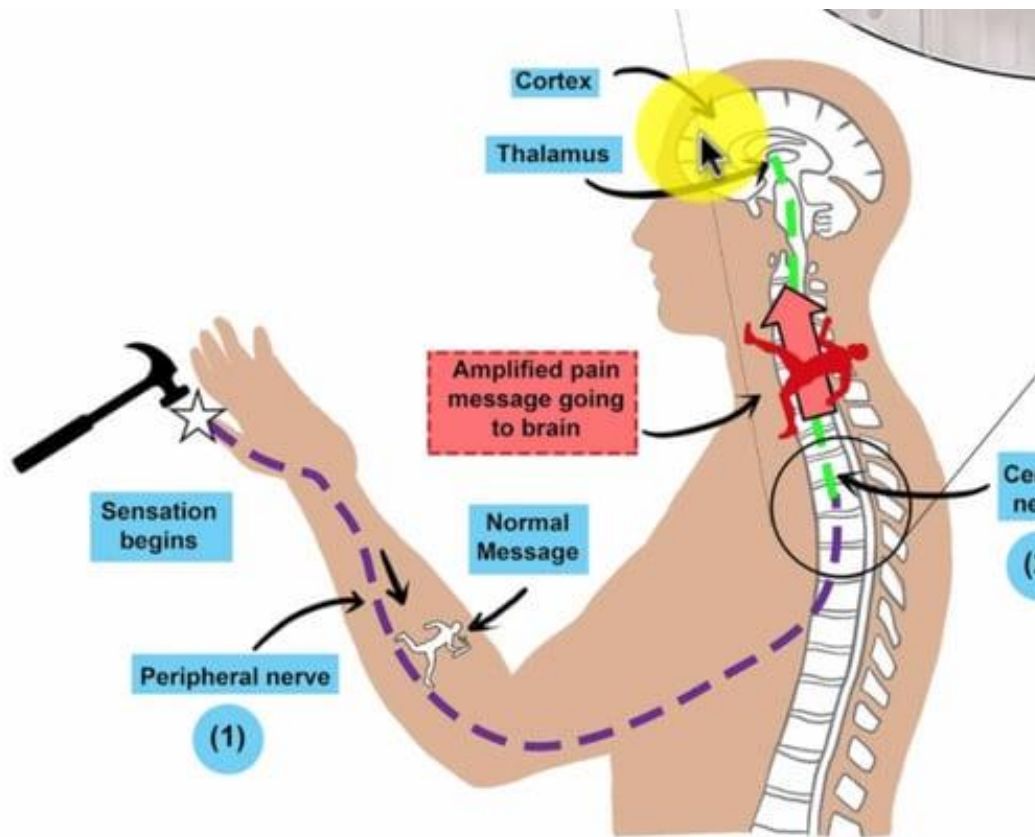
- 1 mm pin at 45° -- "pricking pain"
- 4mm wide pin -- "stinging pain"
- 20mm wide pin -- "pleasant strong warmth"

**NO RELATIONSHIP BETWEEN INJURY, NOCICEPTION
AND PAIN...**

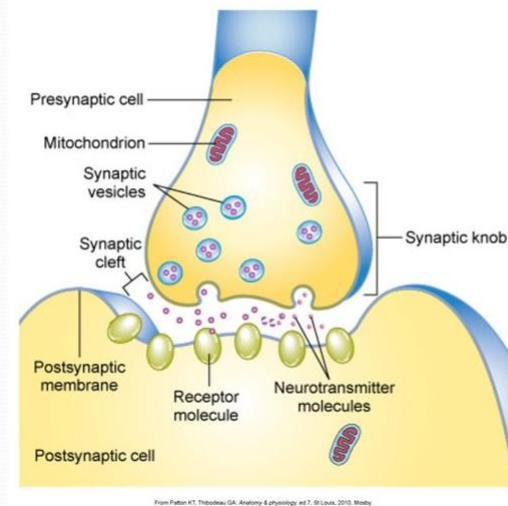
- The *entire system is all about protection* and not about conveying an accurate indication of the state of the tissue.

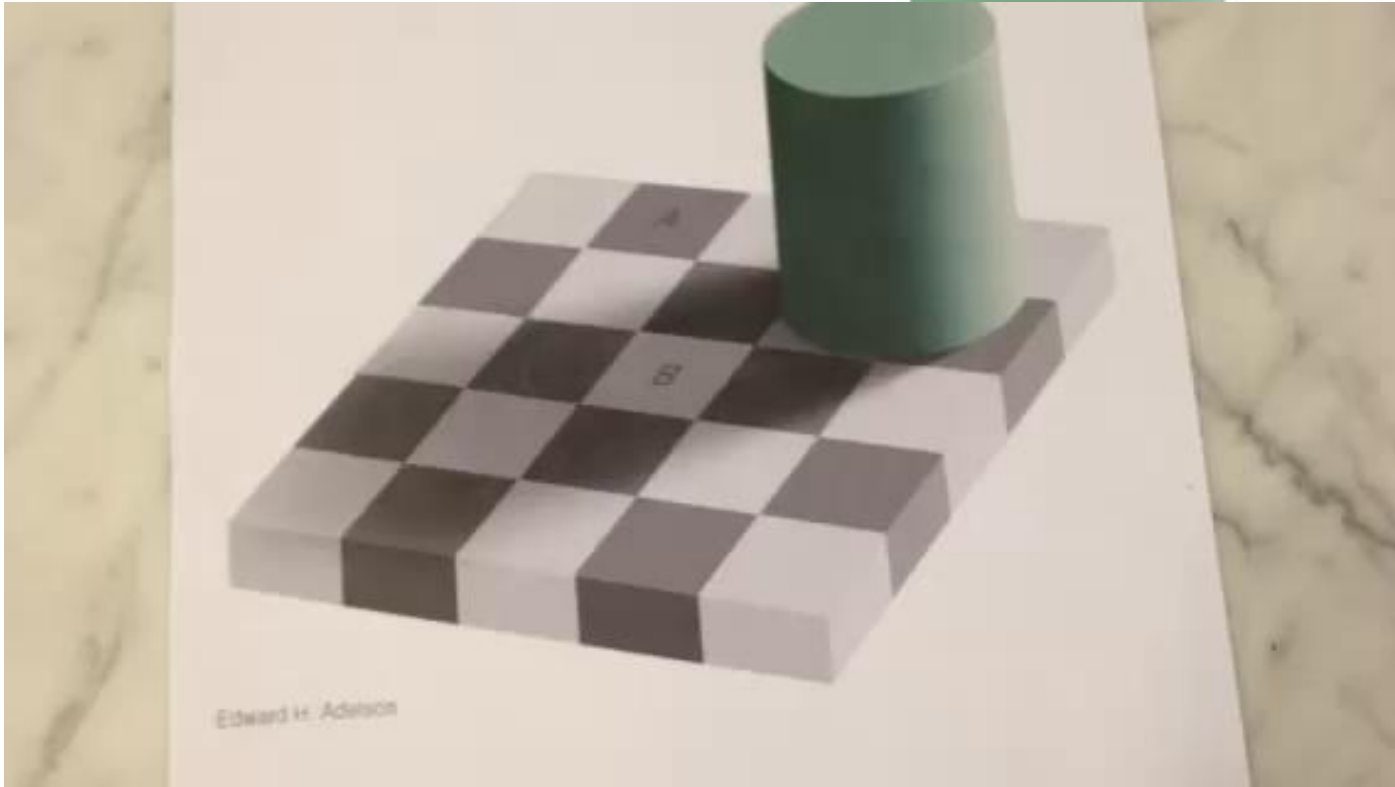
Tissue Damage ≠ Nociception = Pain

Neuroplasticity and Pain



Transmission of Pain Impulse





Edward H. Adelson



Stress and perception: 2012 Health Psy Keller et al.

- 30k adults in US, 8 year study
- How much stress have you experienced in the last year?
- Do you believe stress is harmful for you?
- 43% increase in risk of dying, for those with lots of stress
- This was only true for those who **BELIEVED** stress was harmful!
- 20k people die each year in US because of this belief...

Perception and Anxiety:

- People suffering from anxiety perceive their physiology as out of control.
- It actually isn't!
- *Jamieson's study:* Objectively, their cardiovascular and autonomic responses look just like those of the non-anxious.
- *Everyone* experiences an increase in heart rate and adrenaline.
- *People with anxiety disorders perceive those changes differently.*
- They are more aware and sensitive to heart rate and breathing.
- Make more negative assumptions about those sensations.

CONCLUSION

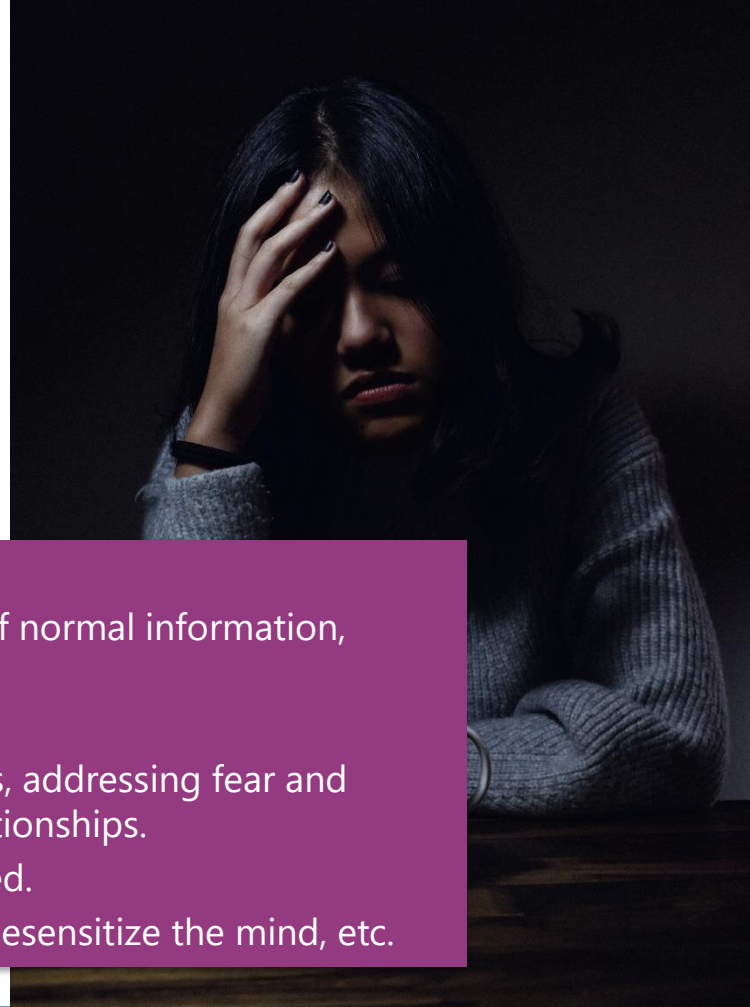
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MYSTERY explained:

- Central Nervous System Sensitization, abnormal processing of normal information, outright rejection of a region by the brain.

Treatment should be aimed at neuroplasticity:

- CBT (Talk therapy)- Cognitive shifting, remodel belief systems, addressing fear and sense of threat/danger, and better manage sleep, stress, relationships.
- Movement- body has to move, stretch, breathe, be challenged.
- Meditation- how to better self-regulate the mind, emotion, desensitize the mind, etc.





Poll Question

PAIN (PHYSICAL OR EMOTIONAL) IS PRODUCED WHEN:

1. There is an insult or injury with tissue damage
2. Pain nerves/nociceptors are stimulated
3. Brain perceives threat or danger

Questions?

