WHAT IS NEW IN PAIN MEDICINE

Bennet Davis, M.D.

SIERRA TUCSON®

Where Change Begins®

4 PATHS TO PAIN

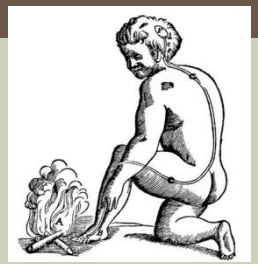
They may co-exist, or only one type may be present

1. 10,000AD to 1980: nociceptive pain
2. 1980 to 2000: the age of neuropathic resulting from physical trauma to the nervous system
3. 2000 to now: Neuropathic pain resulting from experiences that “damage” the nervous system

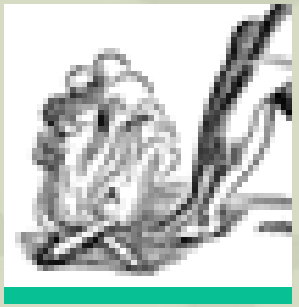
- Emotional pain
- *Secondary gain (no pain, pain complaints used to get something)*

René Descartes conceived the pain sensing nervous system this way in the 17th Century

Nociceptive Pain



Transduction (Nociceptors)



↓

Transmission (Peripheral nerve)

↓

Modulation (Spinal cord & Thalamus)

↓

Perception (Somatosensory cortex)

Nociceptive Pain

Pain Stimulus
(trauma,
inflammation, heat,
etc.)

Sensory processing
of pain stimulus

Emotional processing
of pain stimulus

Emotional distress and
UNPLEASEANTNESS

PAIN AND DISABILITY

Examples of Nociceptive Pain

- Arthritis (degenerative or inflammatory)
- Radiation fibrosis from cancer
- Burns
- Back pain
- Fractures
- Described as: “sharp, dull, aching”

Neuropathic Pain

Transduction (Nociceptors)

↓

Transmission (Peripheral nerve)

↓

Modulation (Spinal cord & Thalamus)

↓

Perception (Somatosensory cortex)

Neuropathic pain

Physical injury to the nervous system, or modification of the nervous system by chemicals, inflammation…

Painful Stimulus (burn left foot)

Sensory processing

Altered Sensory processing

of pain stimulus

Emotional processing of pain stimulus

Emotional distress and unpleasantness

PAIN and DISABLITY

Ex: Constant burning, spontaneous shocks and jabs, allodynia

SIERRA TUCSON®

Where Change Begins®

Neuropathic Pain from physical nerve injury

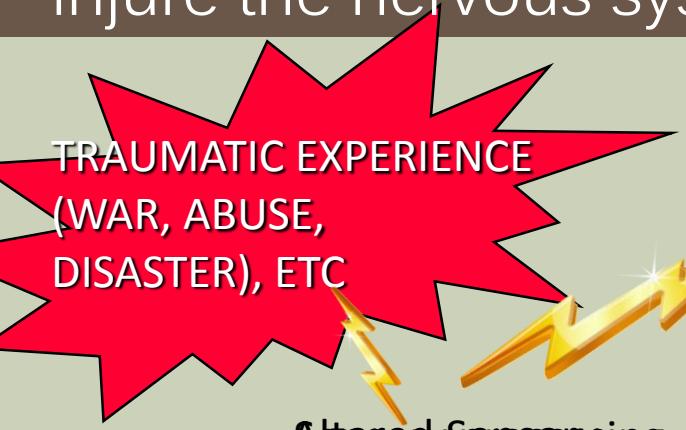
- Diabetic and other neuropathies
- Post herpetic neuralgia
- CRPS
- Phantom limb pain
- Spinal cord injury and post stroke pain
- Brachial plexus injury
- Opioid induced hyperalgesia

Described as: “burning, shooting, electrical ” with heightened sensitivity to stimuli

2014 IASP updated definition of pain

Many people report pain in the absence of tissue damage or any likely pathophysiological cause; usually this happens for psychological reasons. There is usually no way to distinguish their experience from that due to tissue damage. If they regard their experience as pain, and if they report it in the same ways as pain caused by tissue damage, it should be accepted as pain. This definition avoids tying pain to the stimulus. Activity induced in the nociceptor and nociceptive pathways, the wiring of the nervous system, by a painful stimulus is not pain (*sorry Descartes*), which is always a psychological state, even though we may well appreciate that pain most often has a physical cause. **IASP 2011**

Neuropathic Pain from experiences that injure the nervous system – no physical insult



Pain Stimulus (trauma, inflammation, heat, etc)

Altered processing of pain stimulus

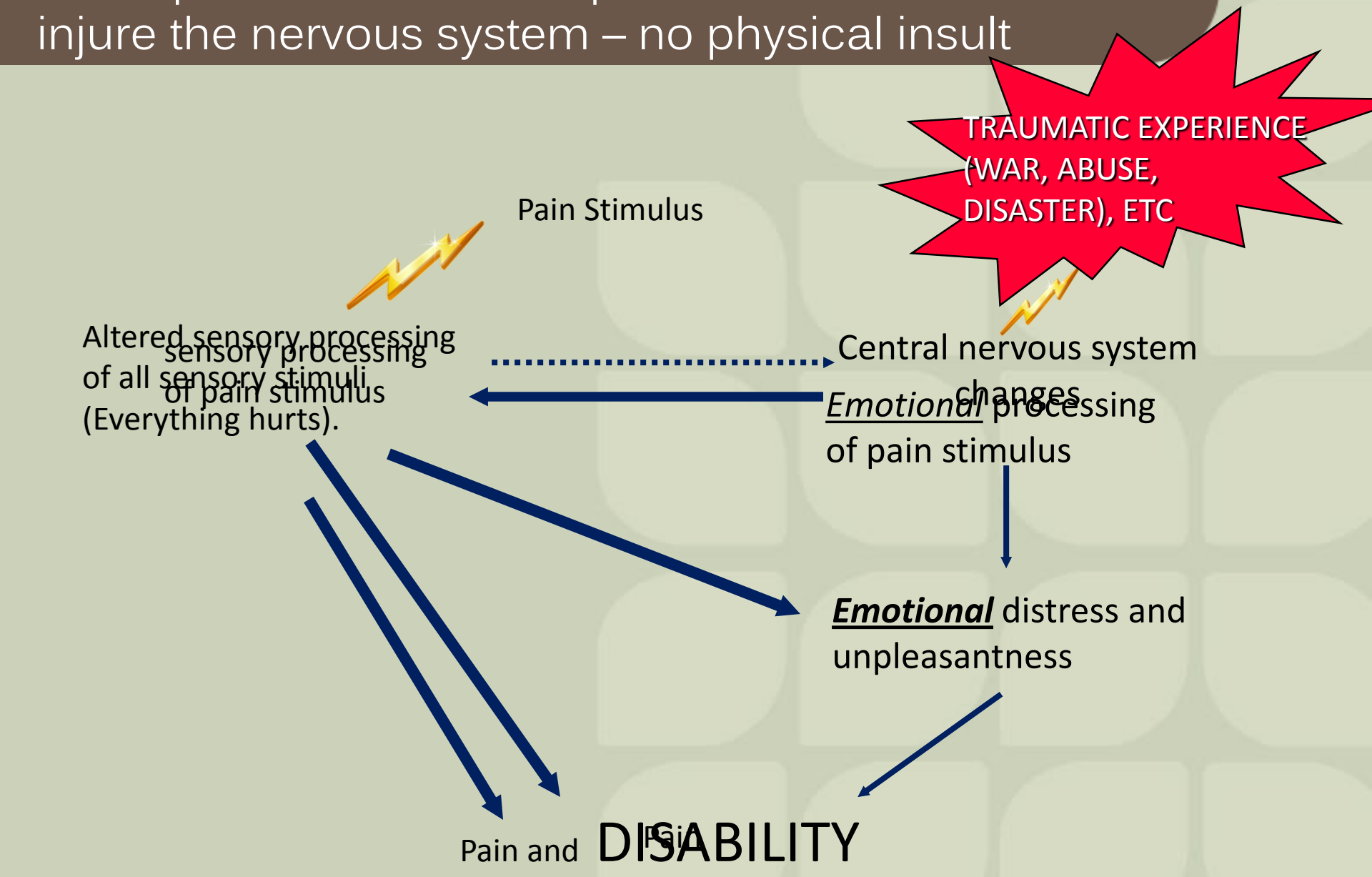
Emotional processing of pain stimulus

Emotional distress and UNPLEASEANTNESS

PAIN AND DISABILITY

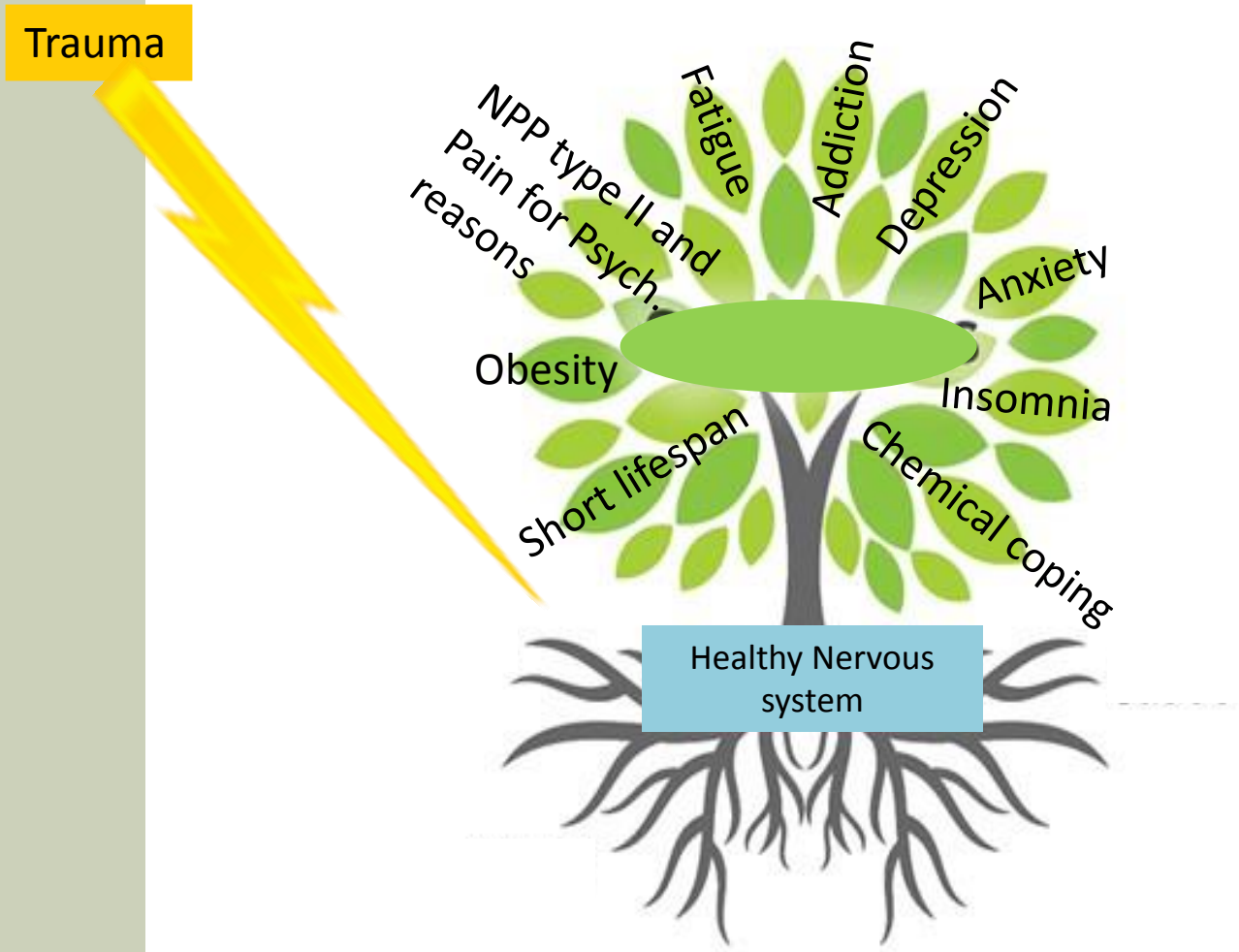
SIERRA TUCSON®
Where Change Begins®

Neuropathic Pain from experiences that injure the nervous system – no physical insult



SIERRA TUCSON®
Where Change Begins®

The Developmentally Reorganized nervous System



Examples of Neuropathic Pain resulting from experiential nervous system injury

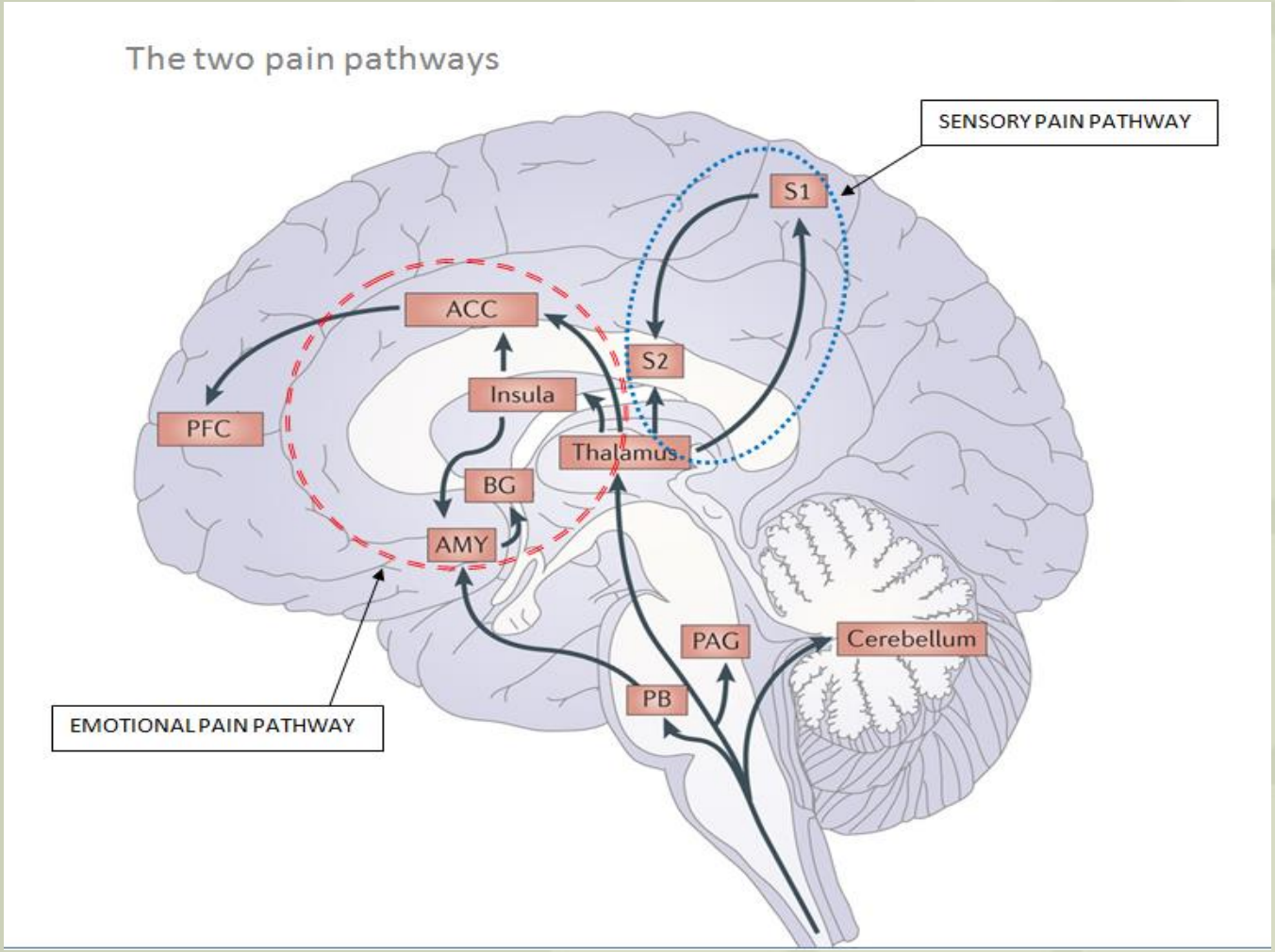
- Fibromyalgia
- Some chronic abdominal pain syndromes
- Some headache syndromes

Described as: “cruel, punishing, fearful, horrible” with heightened sensitivity to stimuli

Clues to presence of Neuropathic pain type resulting from experiential nervous system injury

- "Nothing works for my pain" besides medications with
  psychotropic action (includes opioids, benzodiazepines, etc.)
- Diffuse pain with no clinical cause evident
- Multiple somatic complaints
- Disability is out of proportion to objective clinical pathology
- Pain behaviors seem out of proportion to the severity of the painful stimuli
- Emotionally charged behaviors in the office – crying, etc

Why do emotional responses/behaviors predominate in NPP resulting from experience?



Emotional pain

- Social rejection
- Grief
- Borderline PD
- Depression

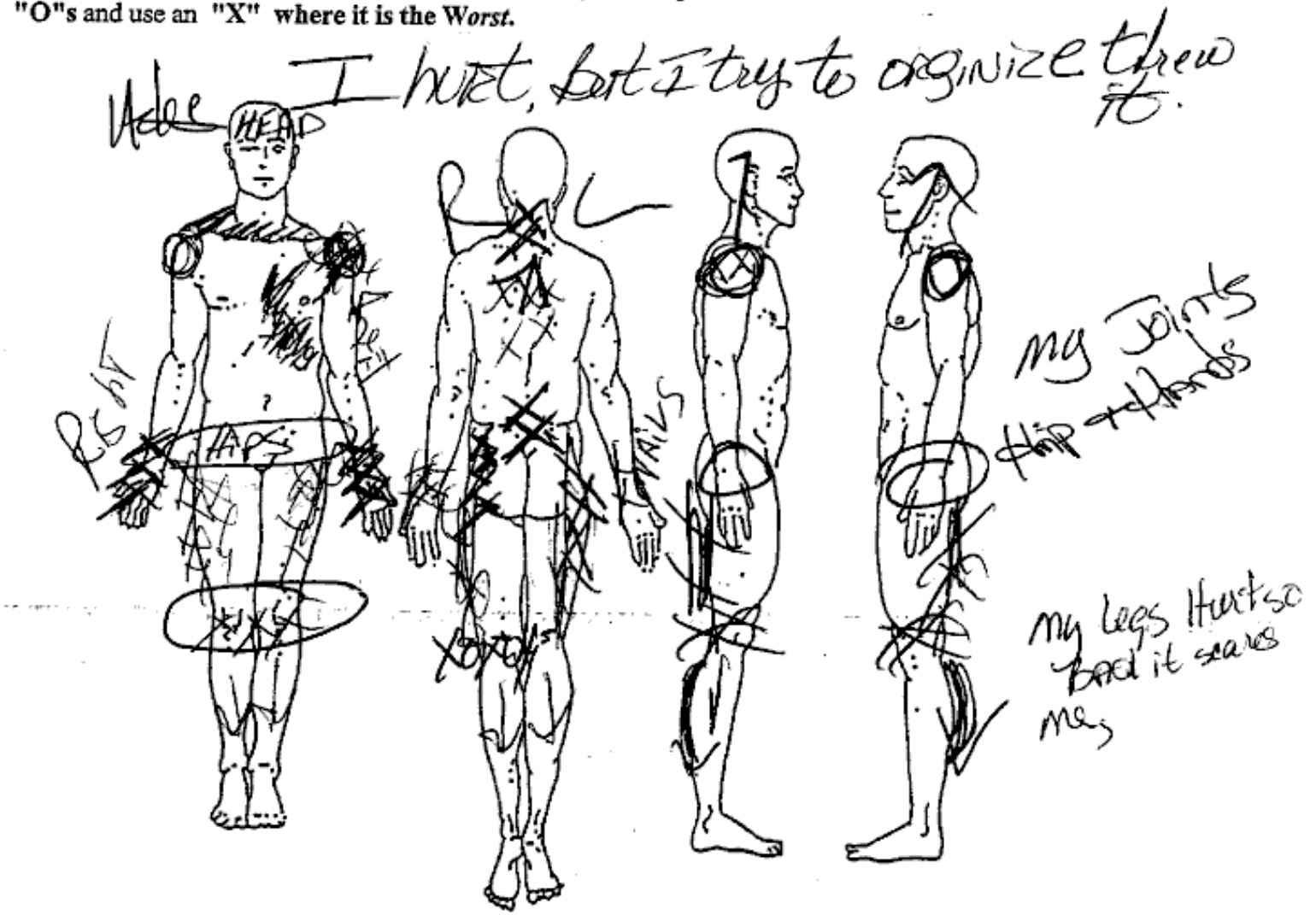
Can “real” pain occur ONLY for psychological reasons?

The next two slides describe a patient who was caught up in a hostage situation 3 years ago. She was unharmed – physically.

She presented to IPCA in referral from her PCP with complaints of 3 years of diffuse pain that was not responding to opioid at high doses.

Referring diagnosis was “fibromyalgia”

Please fill in the "Pain Diagram" below to let us know where your pain is and where it hurts the worst. Shade or color the areas on your body where you feel pain. Mark **Severe Locations with "O"s** and use an **"X" where it is the *Worst*.**



SIERRA TUCSON®
Where Change Begins®

What is Pain 2018 ?

An experience produced by any combination of these processes:

- *Nociceptive pain* Noxious stimulus required
- *Neuropathic pain*
  - Neuropathic “type I” from physical nerve damage
  - Neuropathic “type II” from experiential nerve damage
- Emotions

Which is interpreted in the context of one’s emotional state, past experience, assumptions, and beliefs;

And is assigned Meaning;

Leading to Behaviors

4 pain diagnoses based on this discussion

1. Pain^{p} Chronic painful **p**hysical illness or injury (nociceptive and/or neuropathic pain from nerve injury, unresponsive to outpatient tx

2. Pain^{T} Experiential NPP, patient contemplating **t**rauma treatment, but maybe on high dose opioid

3. Pain^{T+PC} Experiential NPP, patient **p**re-**c**ontemplative regarding treating trauma (blames pain on high dose opioid maybe)

4. Pain^{T+SG} Experiential NPP, Patient pre-contemplative. Often there is **S**econdary **G**ain (Family System, Work)

Endgame: a better understanding of pain leads to a more complete understanding the 5 therapeutic approaches to “I hurt”!

1. Diagnose and treat the physical condition(s) causing pain and co-occurring psychological distress related to loss of function, etc. Taper meds - when appropriate.
2. Treat the trauma (psychopharmacy, neurobiofeedback, and neurocognitive therapies); then, eliminate the pain meds; and treat any physical conditions
3. Try to shift the patient to contemplate treating the trauma; then treat the trauma; then eliminate the pain meds; then treat any physical conditions
4. Family therapy to address the family system pathology; then shift the patient and family to contemplate treating the trauma; then treat the trauma; then eliminate the pain meds; then treat physical conditions

How the 2018 concept helps us more appropriately framing up the pain treatment discussion with our patients

Based on a complete understanding of what pain is and use that understanding to communicate the role of each member of the care team:

Opioids
Antidepressants
Anxiolytics
Anitpsychotics
Pyschodynamic therapy
Cognitive/behavioral therapies

Opioids
SNRI, gabapentin, pregabalin
Neurocognitive therapies (SE,EMDR)
Acupuncture
Nerve blocks
Neurostimulation
Cognitive/behavioral therapies

Opioids
NSAID
Corticosteroid
Exercise and diet
Pain procedures
Surgery to treat pain

This is how pain is most often conceptualized

And this falls short

4. Emotional pain

2. Neuropathic pain due to physical nerve injury
3. Neuropathic pain due to experiential nerve injury

1. Nociceptive pain

The MIND ⇄ The Nervous System ⇄ The BODY

Perceiving & Adding meaning | **Modulating and transmitting** | **Sensing**

- Psychiatrist
- Therapist
- Neuropsychologist
- **PCP** adapting treatment to the appropriate cultural context, doing mental health screening, etc.

- Health psychology
- Neurology/Pain Medicine
- **PCP** screening for nervous system sensitization/dysregulation (signs of classical neuropathic pain or ramped up emotional processing of pain)

- Physical Therapy
- Orthopedics
- Neurosurgeons
- Rheumatologists
- Pain Medicine Spec.
- **PCP** coordinating treatment

SIERRA TUCSON®
Where Change Begins®