Pain in the Brain

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Work Related Injuries Workshop
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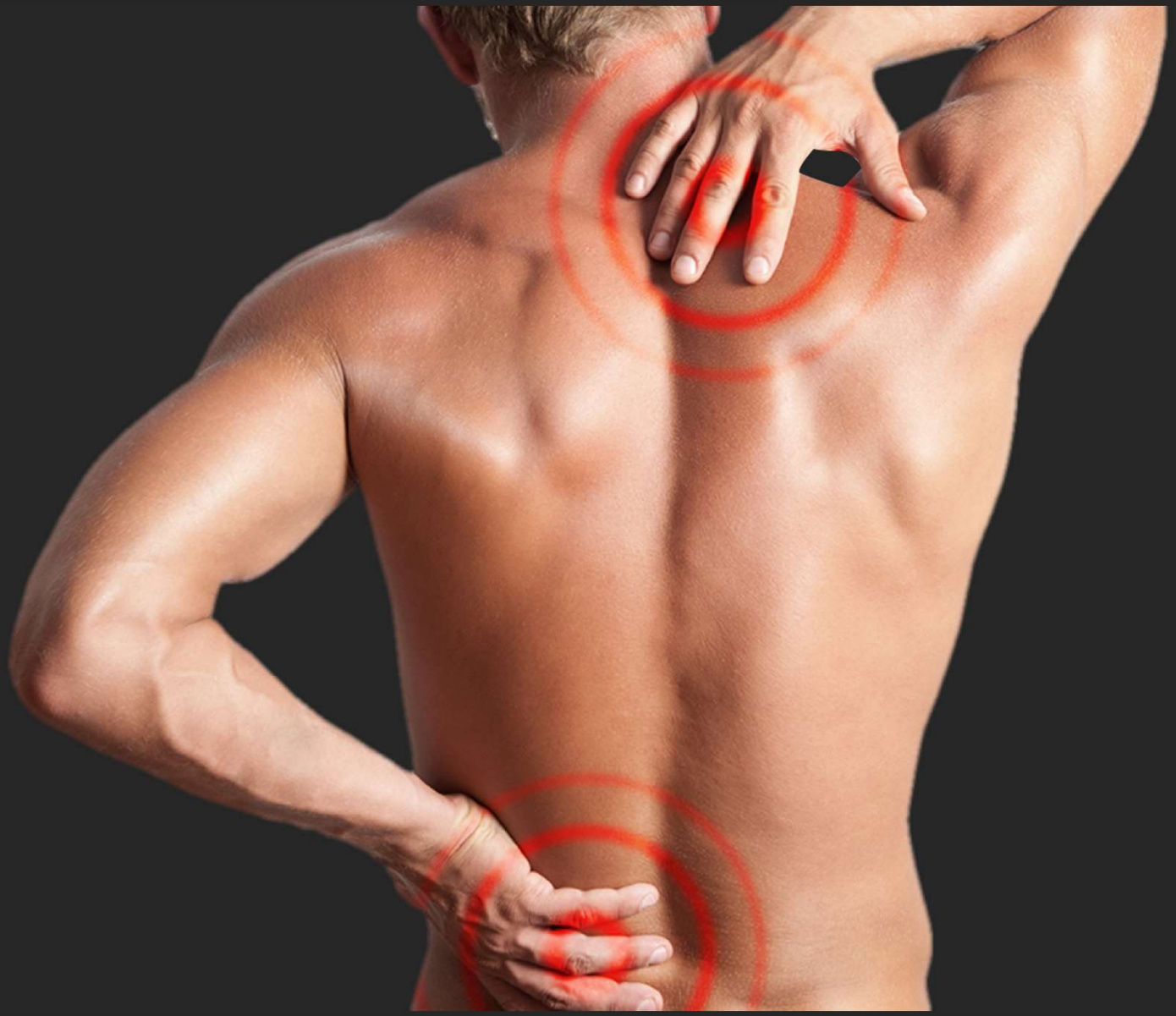
pain



more than

$100 billion

spent on back pain alone


80%
of opioid consumption
5%
of world population
99%
of hydrocodone consumption

50%

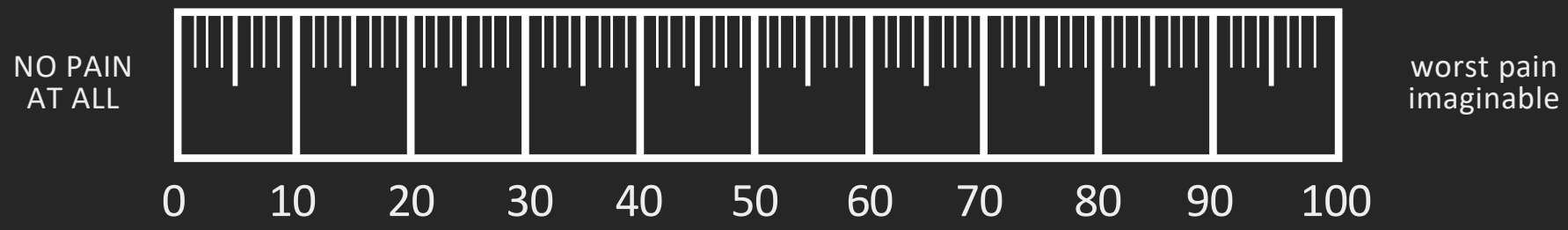
for epidural injections & blocks

60-70%

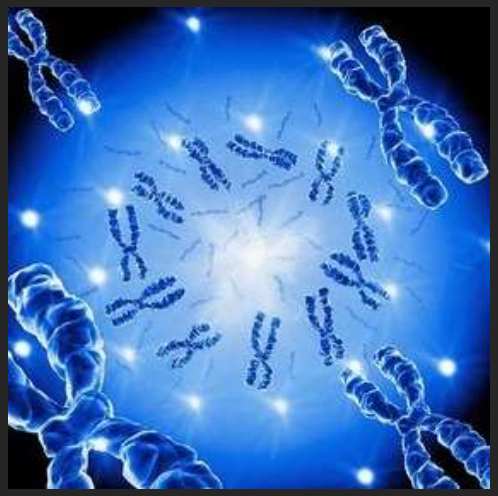
of spine surgeries are successful

We must find a better way.

Visual Analog Scale



The experience of pain

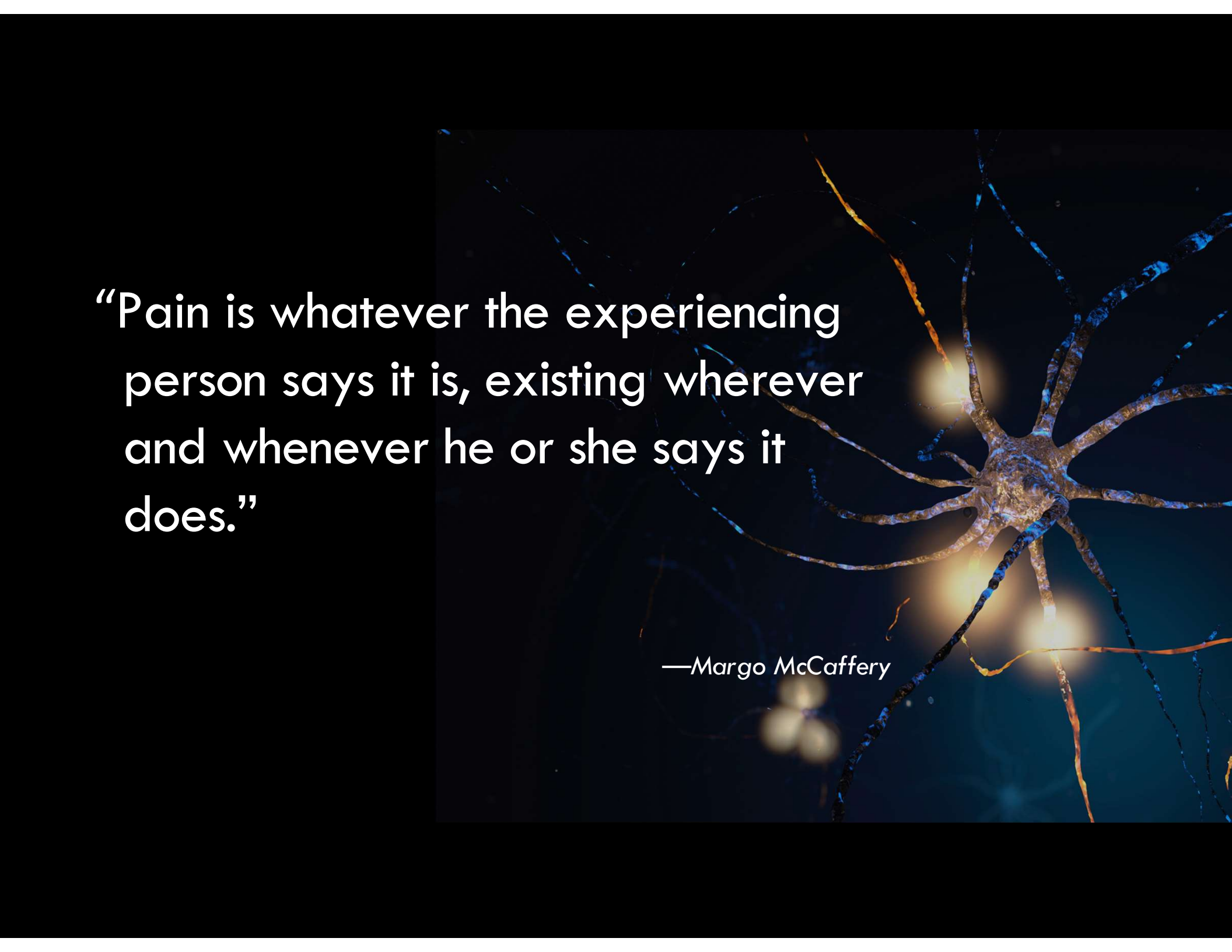


genetics

environment

age, race + gender

cognitive factors


"Pain is whatever the experiencing person says it is, existing wherever and whenever he or she says it does."
—Margo McCaffery

Endogenous Opioids

Enkaphalin

Endorphin

Dynorphin

Cortisol

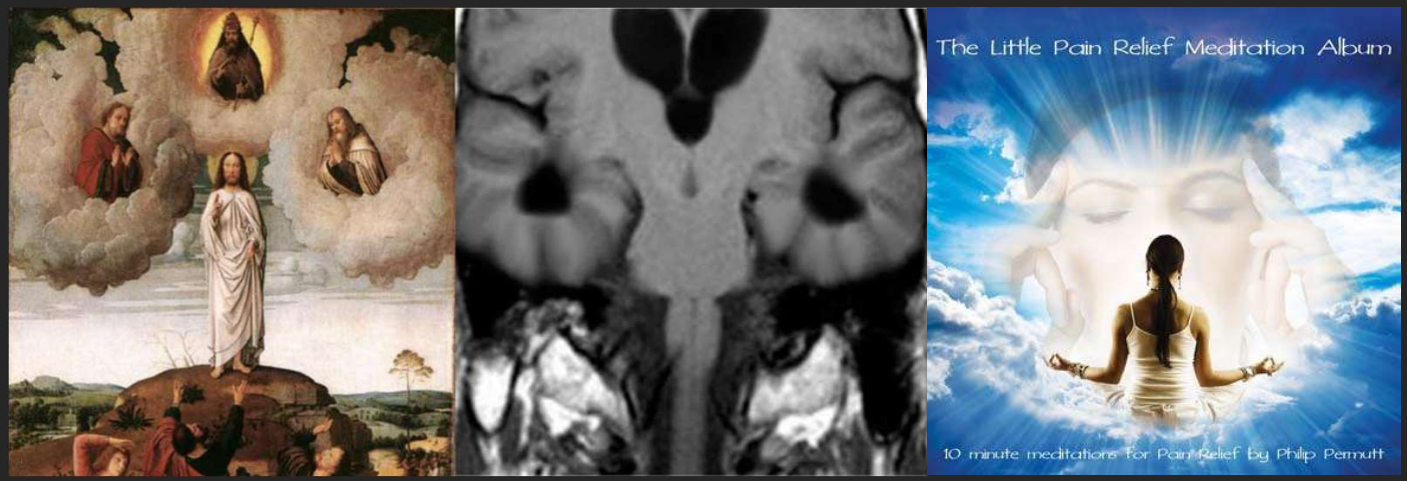
Serotonin

Dopamine

Corticotrophin


1:40· 16
3083
3121
Johnson&Johnson
PHILADELPHIA
REI
asics
TYR
GARMIN
DEER PARK
WHEATIES
TYR

Meditation and Chronic Pain



Analgesia Enhanced by Religion as a Belief System Pain. 2008 Oct 15;139(2):467-76

Thank You

PAIN IN THE BRAIN

ROBERTO FELIZ, M.D.

BOSTON PAIN CENTER

HYDE PARK, MA

PAIN IN BRAIN

- Most of us feel and experience pain in the localized/injured area (lower back, knee, shoulders…).

Yet, the chronic pain itself and chronic opioid is what transitions the pain from the injured area to inflamed the brain (neuro-inflammation) where we then feel the chronic pain.

Neuroinflammation (in the CNS) is an inflamed brain = to Chronic Pain.

PAIN IN THE BRAIN

- Can chronic opioid and/or chronic pain cause:
- Neuroinflammation,
- Tolerance,
- Skin Hyperalgesia
- Hormonal Suppression (Testosterone/Estrogen)

- All of the above = Prolonging/Intensifying the chronic pain experience by the patient.

PAIN IN THE BRAIN

- For **acute pain**, opioids do help reduce the severe pain.
- For **chronic pain**, chronic opioids reduce the actual pain by 20% to 30% (20% - 40% range) at best.
- The rest or a significant component of the ingested opioid dose goes to simply prevent end-of dose **Anxiety and early signs of withdrawals at end of dose**.
- **Comfort Zone vs Discomfort Zone**, forces the patient to anxiously seek the next dose, forcing long-term dependency.

PAIN IN THE BRAIN

- How does chronic pain causes **Neuroinflammation**?

- Stimulation of Toll 4 receptors with the Microglia and Astroglia Neurons cells, causing release of:

- Pro-inflammatory markers: Similar to Covid-19 inflammatory storm: Leukotrienes, Prostaglydins, Tumor necrotic factors, Interleukins, 2, 6.

PAIN IN THE BRAIN

- Erin Krebs, et al: "chronic opioids, oxycodone, are not any better than non-opioid alternatives (Naproxen) in relieving chronic pain." Higher risk profile for opioids.

- Can one Manage CP without opioids? YES.

PAIN IN THE BRAIN

- **TOLERANCE:**
- **Down regulation of opioid receptors** forcing need to **“chase the pain”** with more medication to achieve same effect.

- Unfortunately, this **Chasing the pain**, leads to more tolerance, more down regulation and the need for more medication = **part of the Opioid crisis.**

PAIN IN THE BRAIN

- **Opioid Induced Hyperalgesia**

- Patient on chronic opioid, **feel and report being more sensitivity to pain**, due to hypersensitivity at the nociceptors/peripheral nerve endings.

PAIN IN THE BRAIN

- **Hormonal Suppression**:
- Testosterone/Estrogen Suppression.

- Leading to generalized weakness/deconditioning, decreased libido, fatigue and an overall **lack of “get up and go.”**

PAIN IN THE BRAIN

- **Drug Holiday**:

- **No real deterioration in overall pain**.

- Has been my clinical observation/experience “that as Tolerance decreases, hyperalgesia decreases, neuroinflammation decreases, hormonal suppression improves, the overall skin hypersensitivity decreases, the overall report of pain improves.”
- **Encourage a Drug Holiday** for patients on chronic opioid. In my experience, most patients feel better (a paradoxical effect).