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Barbara Walker Centre
for Pain Management

Persistent Pain: making sense of it all

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Typical Diagnostic Paradigm of Pain Patient

Pain

↓

Laboratory and radiographic/-oscopic evaluation

↓

Abnormality identified

↓

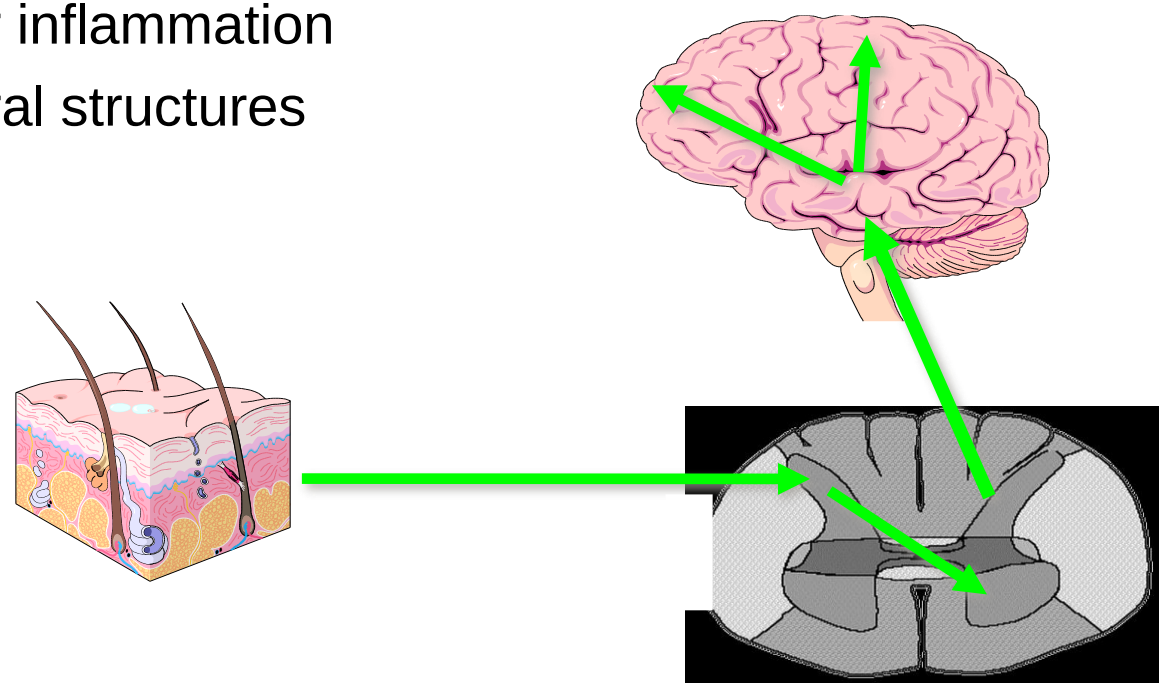
Cause for pain found (?)

How is Chronic Pain Typically Managed? Acute Pain Model

- Look for “cause” of pain
  - X-ray, MRI, or – oscopy
- Treat with medications
  - Paracetamol
  - Nonsteroidal drugs
  - Opioids
- If this doesn’t work, we have a tendency to:
  - blame (drug-seeking, somatizer, high health care utilizer, difficult patient, psychiatric)
  - ignore
  - refer
- Inject it, or cut it out and fix/replace it

Fallacies about Chronic Pain

• Most chronic pain is due to damage or inflammation of peripheral structures



Pain in Osteoarthritis

- 10% of individuals with knee pain have normal radiographs (Baltimore Longitudinal Study of Aging - Lethridge-Cejku 1995)
- 30 – 60% of patients with severe osteoarthritis (K-L stages III, IV) have *no pain* (BLAS - Hochberg 1989; Tecumseh - Carman 1989; Framingham - Felson 1987)
- More sophisticated imaging studies are more expensive but not more predictive of pain

Chronic Low Back Pain

- Generally acknowledged to be the most common and expensive musculoskeletal problem in developed countries
- Abnormal MRI are common in asymptomatic individuals (52% at least one bulging disc, 27% with disc protrusion, 38% > one level abnl.) (Jensen 1994)
- 50 – 80% of CLBP judged to be “idiopathic” (Deyo 2001)

Tissue Damage doesn't predict pain

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Shark bite 'didn't hurt', says diver

December 21, 2009

Chris Barrett

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Shark attack victim John Pengelly, 19, in recovery after emergency surgery at Royal Brisbane Hospital. *Photo: Chris Barrett*

PAIN IN MEN WOUNDED IN BATTLE

LT. COL. HENRY K. BEECHER, M.C., A.U.S.

CONSULTANT IN ANESTHESIA AND RESUSCITATION, MEDITERRANEAN THEATER OF OPERATIONS

Pain 133 (2007) 64–71

PAIN

www.elsevier.com/locate/pain

The context of a noxious stimulus affects the pain it evokes

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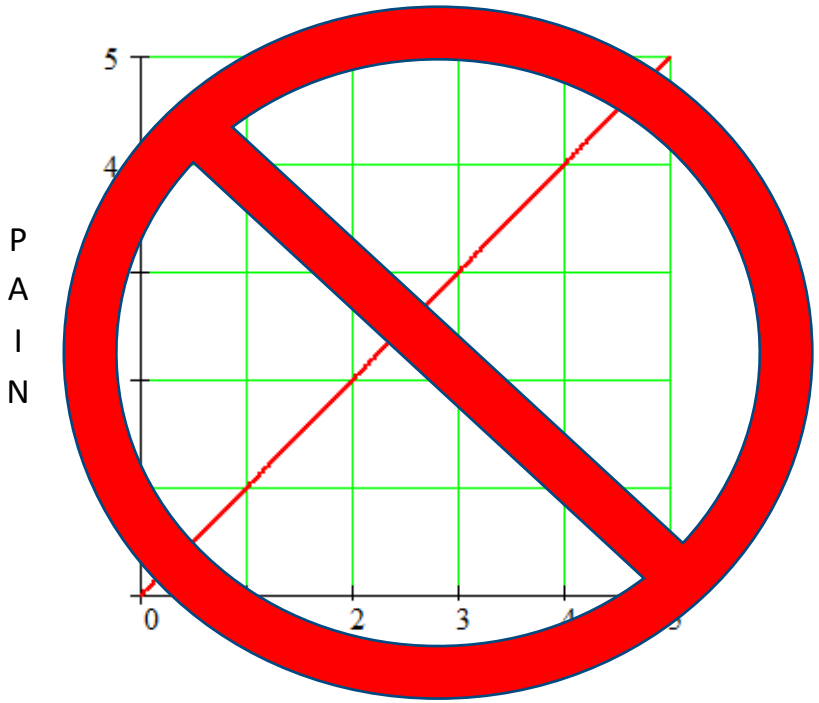
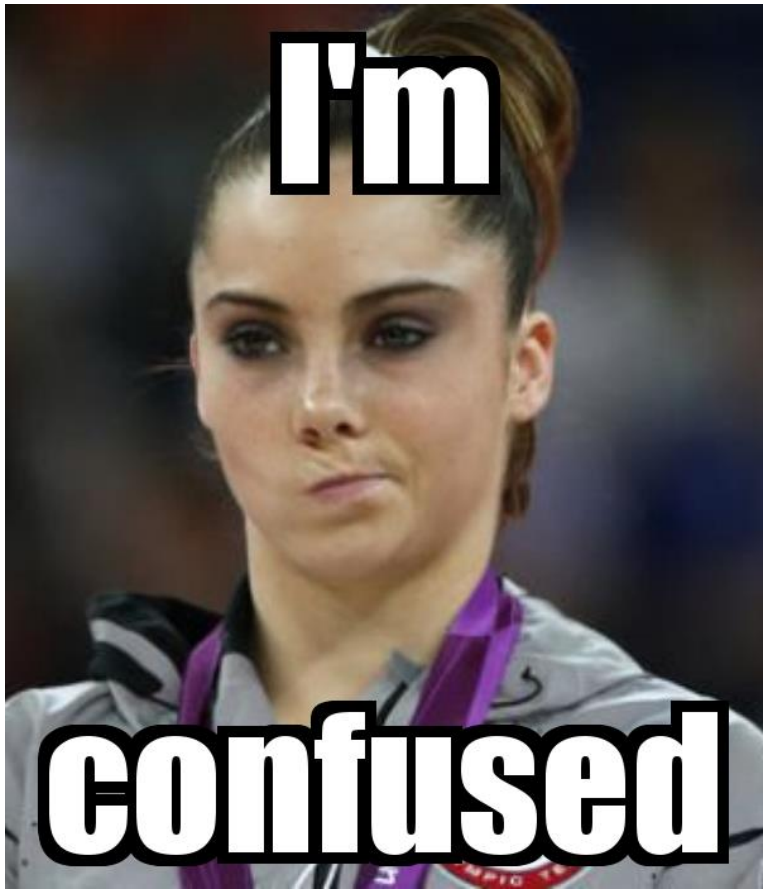
Myth #1



End organ pathology


I'm
confused

Definition of pain

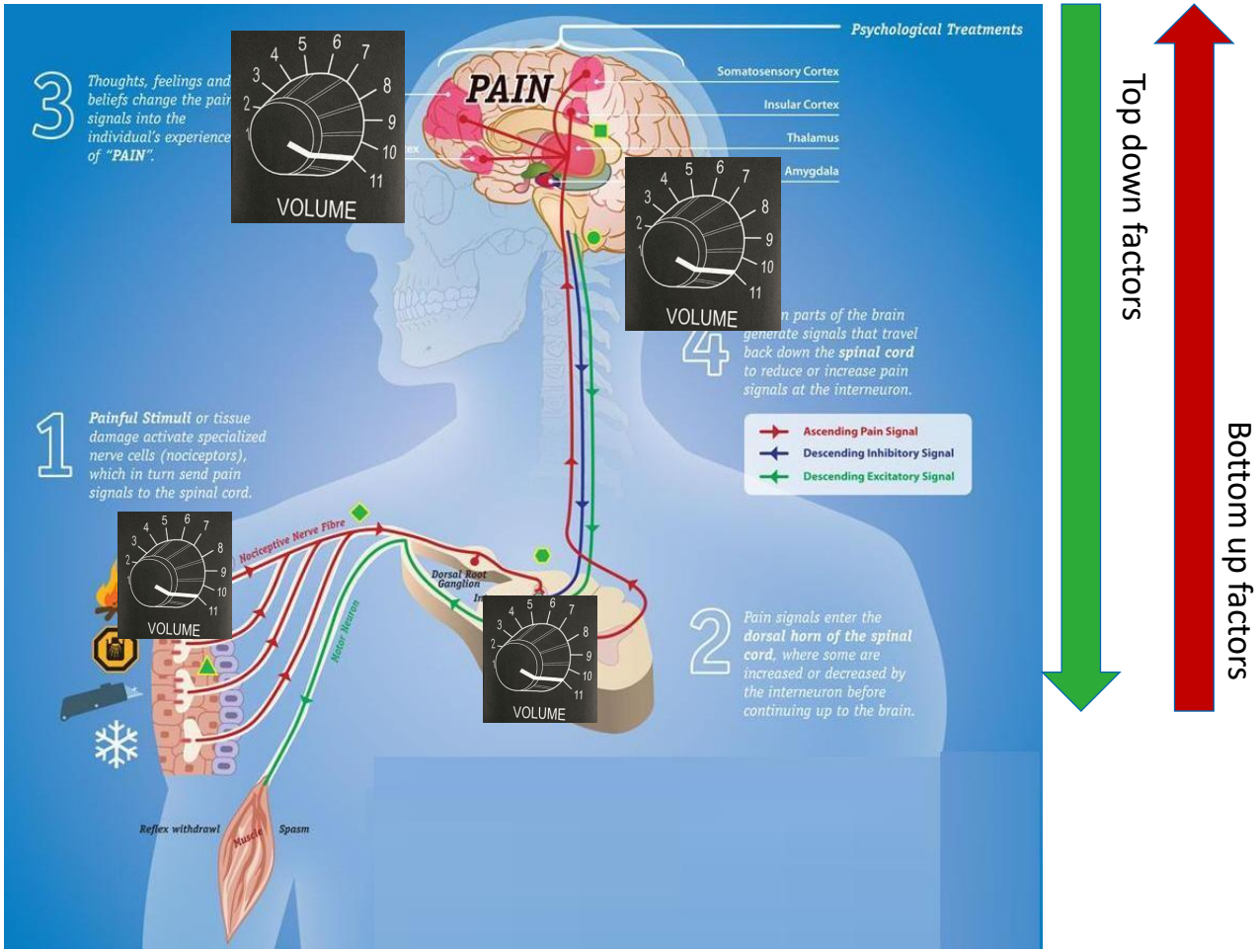
International Association for the Study of Pain (IASP):

“An unpleasant sensory or emotional *experience* associated with actual or potential tissue damage”

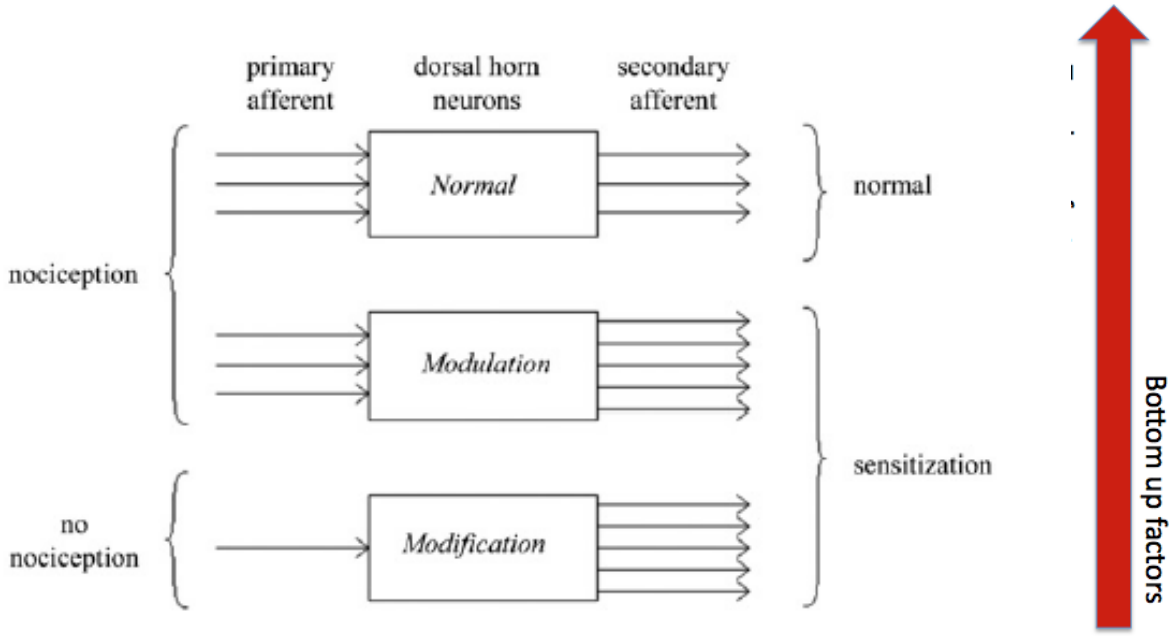
(Mechanistic) definitions:

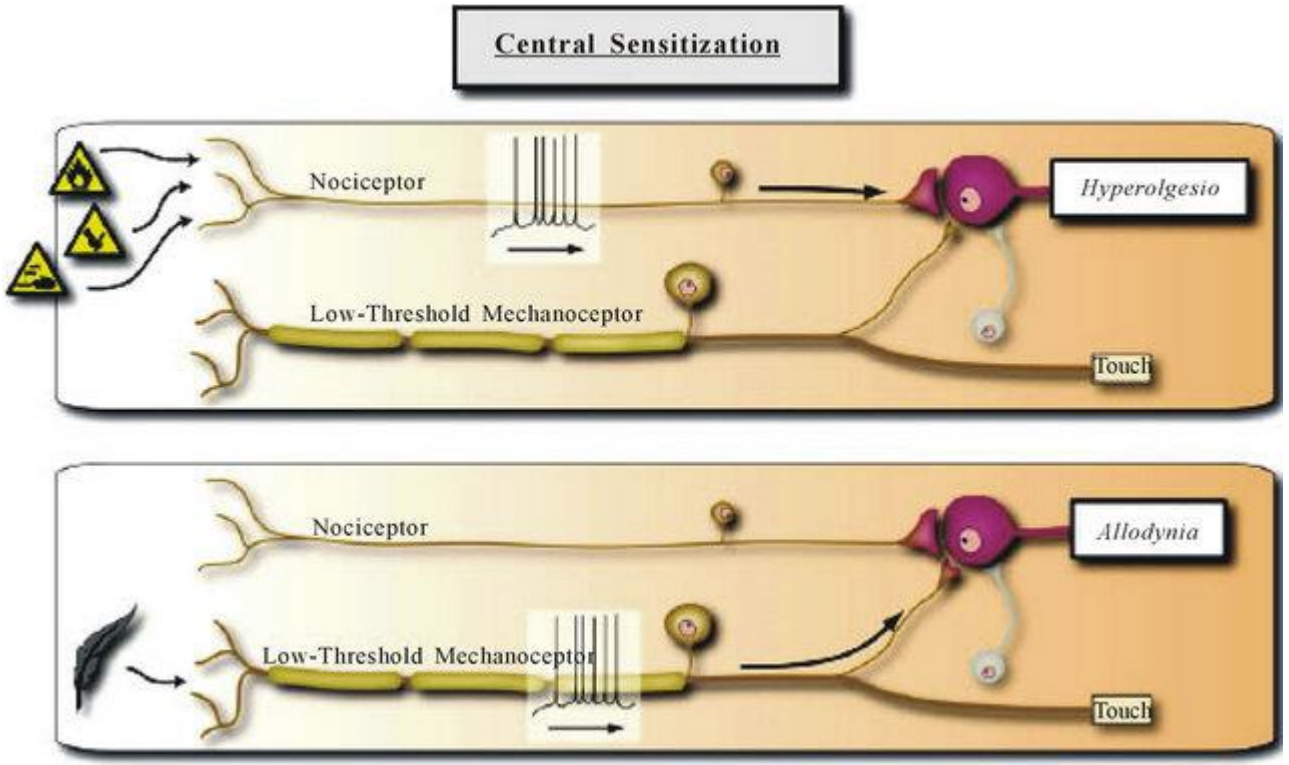
- Nociception
  - The neural process of encoding noxious stimuli.
    - Pain sensation is not necessarily implied
- Nociceptive Pain
  - Pain that arises from actual or threatened damage to non-neural tissue and is due to the activation of nociceptors
- Neuropathic pain
  - Neuropathic pain is a clinical description (and not a diagnosis) which requires a demonstrable lesion or a disease that satisfies established neurological diagnostic criteria
- Nociplastic Pain
  - Pain that arises from altered nociception despite no clear evidence of actual or threatened tissue damage causing the activation of peripheral nociceptors or evidence for disease or lesion of the somatosensory system causing the pain

Nociceptive modulation



Central Sensitisation





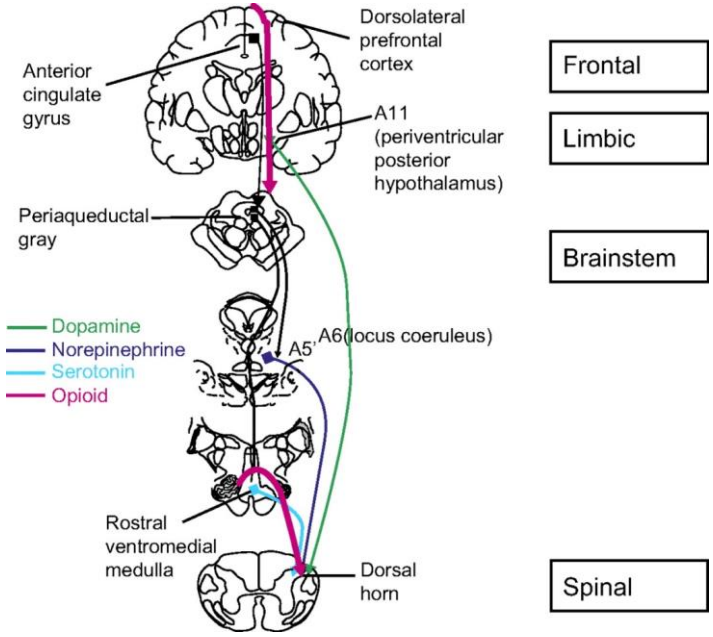
Ab fibres (soft touch) are now part of the nociceptive system.

Top down factors

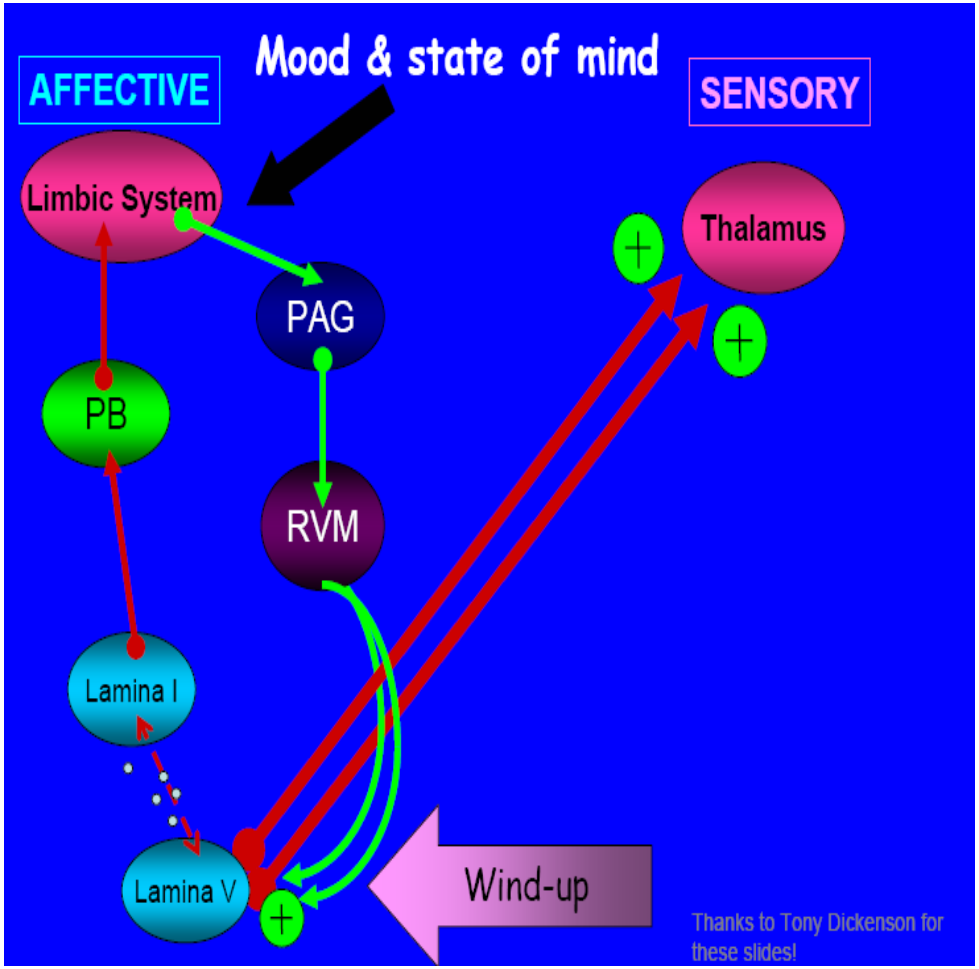
1. Anti-nociceptive mechanisms
2. Pro-nociceptive mechanisms

1. Anti-nociceptive mechanisms

- Descending inhibition turns the signal down in the dorsal horn
- Many pathways
  & mechanisms



Top down factors (or the biology of psychology)



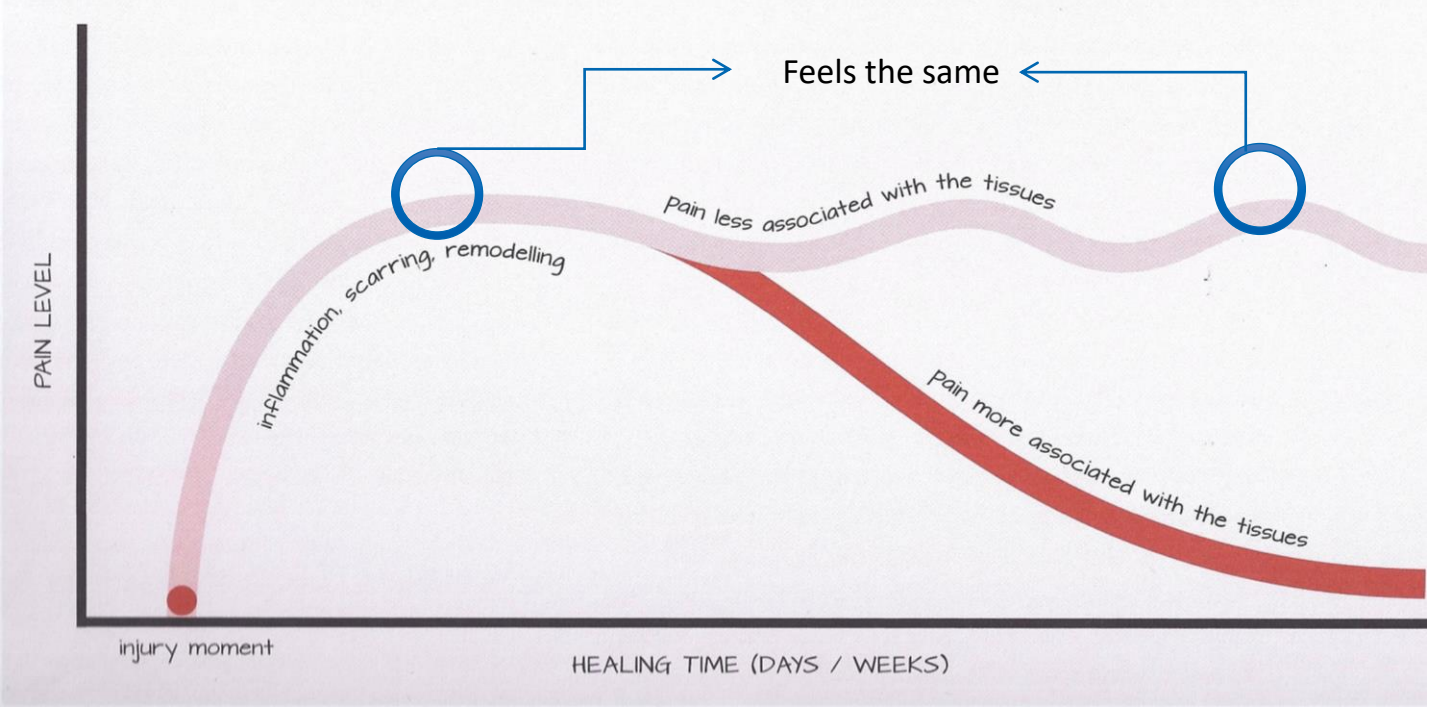
These mechanism are behind:

Get out of danger

Tolerance of extreme nociception

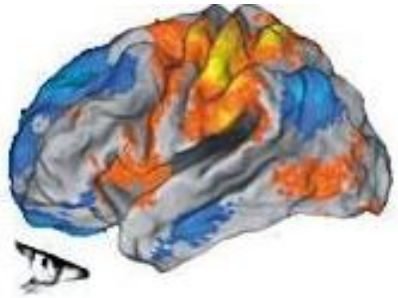
Placebo response in pain

Acute vs. Chronic Pain

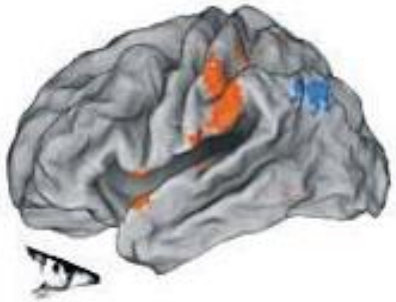


Brain changes in chronic pain

Chronic Pain



Acute Pain



Recap

We understand the mechanisms of how you can experience pain without there being actually ongoing damage or threat of damage to the body

The brain can turn up/down the signal from the body

- this is subconscious process and a consequence of the individual's 'wiring' which reflects their subconscious learning which has been shaped by their life experiences and current life context

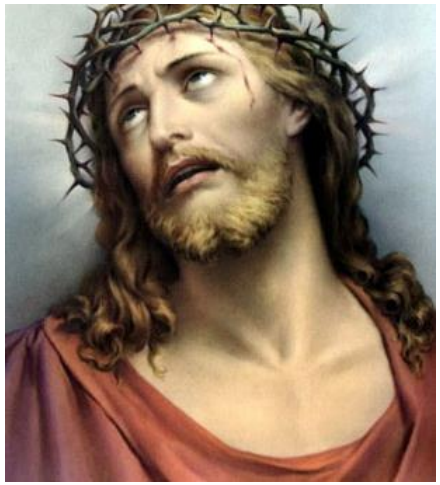
The big question:

Why do some people develop chronic pain whilst others do not to the same type of injury/pathology?

Rene Descartes

"I think therefore I am"

History of Western thinking about pain



Rene Descartes
(1635)

BODY

MIND

Cartesian Dualism

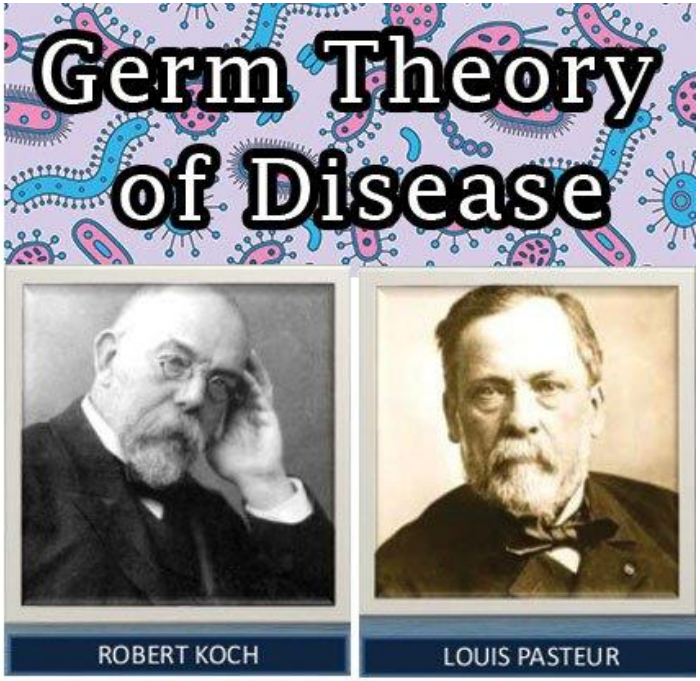
Mind and matter are essentially different in nature

- The mind belongs to the non-physical realm, the body to the physical realm
- The body is subject to the laws of nature
- The mind is not subject to physical laws

- COROLLARY
  - The body can be understood mechanistically and is now open to scientific enquiry

  - The mind transcends life/death and is best understood in terms of spirituality & morality
    - (Free will and immortal soul protected)

The golden age of medicine



Reductionism is now KING!

Reductionism: 'the practice of analysing and describing a complex phenomenon in terms of its simple or fundamental constituents, especially when this is said to provide a sufficient explanation'

hence our love of:

- Molecules, receptors, mechanisms!
    - Goes well with advances in technology & pharmaceuticals/devices

Implication of adoption of dualism in medicine

- Positive impacts:
  - Reductionist method applied to understanding disease processes
    - Success of Germ theory

- Negative impacts:
  - Human illness is interrogated and managed like it's a disease that needs a pharmacological/surgical solution (eg: antibiotics can cure a bacterial infection)
    - Note: Medicine rarely cures illness, rather it manages symptoms

The Patient Experience

BODY

Scans
Tests
Operations
Medications

Problem solved?
No Yes

MIND

“It’s all in my head”

So you’re saying it’s all in my head?

Implications of dualism in pain medicine

- Negative impacts:
  - The Splitting of the person: mind vs body
    - Alienation of the person from their body (organic vs non-organic)
    - Physician focus on pathology not the person
    - There's 'real' pain and 'psychogenic pain'

- Pain is now devoid of personal meaning

➢Result: existential distress/suffering

The (false) dichotomy problems in medicine persist today

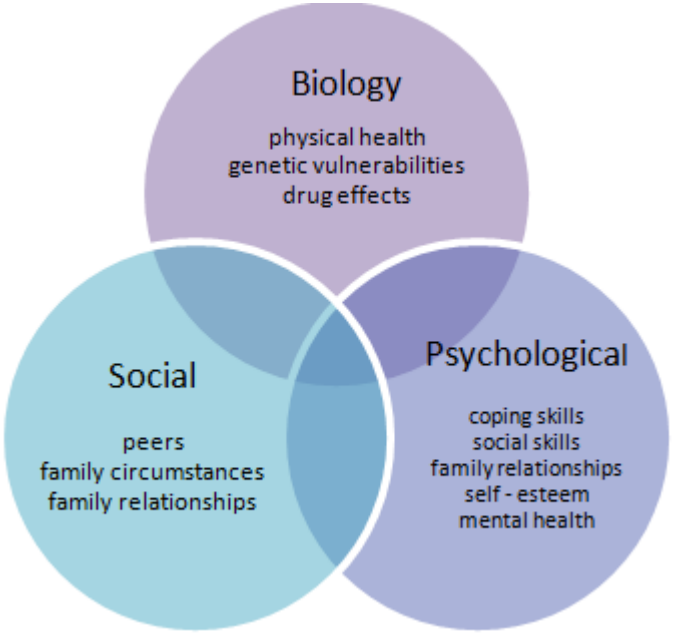
- DUALISM
  - In our language, idioms
    - “mind over matter”
  - In the way we approach illness:
    - Illness becomes classified as a disease process
    - Human body treated like a bunch of organs each requiring its own medical specialty
      - Neurological vs psychiatric
    - Pain regarded as a symptom of disease
      - Reinforces the idea of real vs not real pain
      - i.e. Organic vs non-organic
  - In the way we ask research questions & interpret data
    - ? Success of trillion dollars of biomedical research

Asking the right questions… the How vs Why

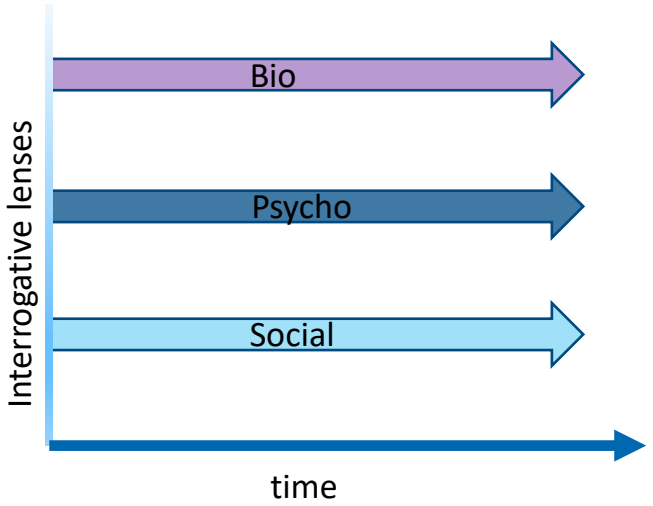
"Cathedrals may be constructed from bricks, but are not caused by bricks. Skyscrapers are not caused by steel and glass."

Daniel B Carr, Yisabyth S Bradshaw (2014)Time to Flip The Curriculum? *Anesthesiology* V 120 No 1 pp12-14

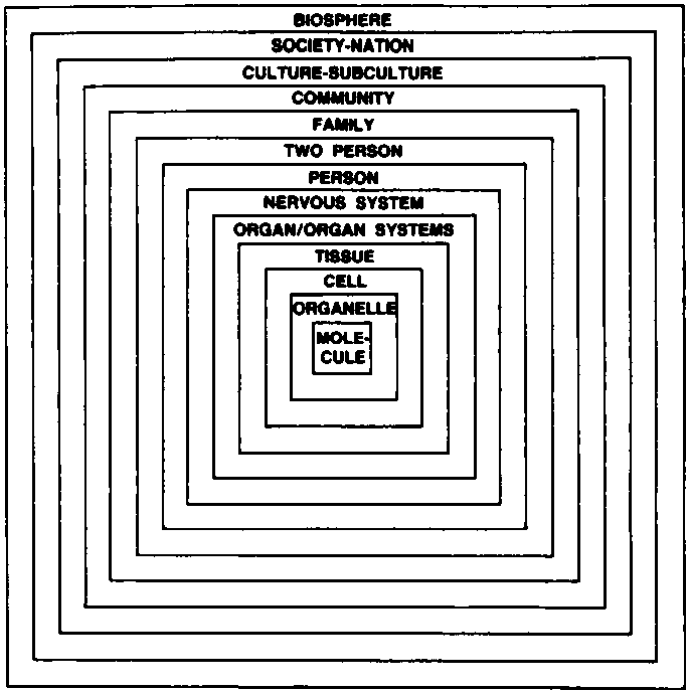
The Biopsychosocial paradigm



Vs



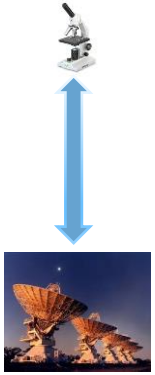
Engel's actual biopsychosocial paradigm



What is 'real' is determined by which **perspective** you use to understand the 'other'

Perspectives to understand the 'other' include:

- Physics
- Chemistry
- Biological systems
- Psychology
- Literature
- History
- Economics
- Anthropology
- Sociology
- Religion
- Astronomy



- All of these perspectives are valid/'real' and help the observer understand what is going on but they are *not causes* per se
  - "Physics doesn't cause chemistry no more than German causes French"

Applying the big picture approach

- Things we know:
  - Chronic pain is a LEARNT process that is culturally sensitive and specific
  - The brain works to reduce uncertainty by telling itself stories
    - These become habits of thoughts (beliefs) and behaviours
      - Eg: damage beliefs, catastrophising, fear of movement
  - What you believe (subconscious or not) ∝ what you experience

Links between trauma and pain

- There is substantial comorbidity between lifetime post-traumatic stress disorder (PTSD) and central sensitization conditions
- In veterans with PTSD 25-80% also have chronic pain (Murphy et al., 2022)
- In veterans with chronic pain as a primary diagnosis, 9-20% also have PTSD (Murphy et al., 2022)
- Up to 35% of patients at a Victorian pain clinic had comorbid PTSD (Lydall-Smith et al., 2020)

PTSD symptoms and pain

- **Re-experiencing**: when people re-experience trauma, they are in hyper- or hypo-arousal states (fight, flight, freeze) and these can exacerbate pain.

- **Disturbed sleep**: trauma affects sleep through agitation, re-experiencing, feeling unsafe; lack of sleep worsens pain and makes coping harder.

- **Hypervigilance**: being jumpy or on the lookout for danger can keep muscles tense and the amygdala sends more danger signals, upregulating the pain system.

- **Emotional dysregulation**: difficulty regulating emotions is linked to unhelpful coping behaviours which in turn worsens pain e.g. avoidance, distraction, boom-busts, substances etc.

So how do we make people better?

- Validate the person & their experience
  - Listen and acknowledge
    - You've humanized the experience!
- Provide them an individualized formulation of their pain journey
  - Pain now has meaning!

Your life story has physically shaped your brain's response to threat, including pain

- Nociplastic changes

Prolonged stress/trauma can leave its mark physically & will lead to a more pronounced and longer lasting pain experience

- This in NORMAL but unpleasant

So how do we make people better?

- Reduce the fear of pain and restore trust in their body
  - Pain education: undoing harm beliefs
    - Challenge the medical imaging myths
    - “Hurt doesn’t always equal harm”
    - “It’s in my head but I haven’t made it up and it is real”
  - Reconnect the mind with the body
    - You can move safely despite pain
  - You can ‘re-set’ your pain system – the art of pacing
- Improve self-efficacy & QoL despite pain
  - Decrease disability, restore internal locus of control
  - Sleep strategies
  - Optimise medications

Conclusions

- Chronic pain is a diagnosis in itself (see ICD-11)
- Medications rarely work by themselves
- Cartesian Dualism is deeply imbedded into western medicine and its biases are rarely recognised or challenged both in clinical medicine and medical research
  - Iatrogenic potential of the medicalisation of chronic pain is high
  - The mind and body are not different ‘things’. They are different ways of talking about the *same* thing

Conclusions

- Biomedicine tends to focus on the ‘how’ (mechanisms) rather than the ‘why’ (i.e. why this person and not that one?)

- A broader approach to understanding illness is needed where the ‘big picture/context’ is understood to shape the person’s experience of themselves which will be reflected at a biological level (i.e. the ‘how’)
  - NOTE: the above applies to most of medicine’s chronic conditions

- Go forth and keep asking “WHY”

Referring to BWCPM
DHHS State-wide Referral Criteria (SRC)

- Criteria for referral to Public HIP pain service

1. Persistent / chronic pain >3 months with symptoms that impact daily activities including work study, school or career
2. Multiple presentations for exacerbations of pain despite adequate treatment in previous 12 months (ie: exercise, analgesia, addressing mental health)
3. At risk of functional or psychological deterioration, or medication dependence
4. Willing to explore living well with pain and is willing to learn to self-manage ongoing pain

- Not appropriate to refer:

1. Patients currently not willing to explore living well with pain and not willing to learn to self-manage ongoing pain
2. Patients who only want an intervention or procedure or medications
3. Patients already referred to another pain service
4. Patients who have already completed multidisciplinary care for the same pain issue and readiness for self mx has not changed

Specialities | src.health.vic.gov.au look under chronic pain (Health Independence Program service)

Patients deemed medically urgent

- We will also accept referrals for acute pain conditions (such as complex neuropathic pain, or acute complex regional pain syndrome/CRPS) where early specialist management is critical to outcomes. Please ensure your referral contains as much relevant information as able to enable us to triage these cases with the highest priority.

- If you feel that your patient may fit an urgent medical category, please feel free to call BWCPM and discuss this with the triage nurse

- Phone: 03 9231 4681

Referrals to BWCPM

- How can I refer patients to BWCPM?
- All referrals must be from a doctor for Medicare billing purposes
- Fax the referral to 03 9231 4660 or email BWCPM@svha.org.au
- Referral letter template:
- (Inadequate information per our guidelines may lead to rejection of the referral)

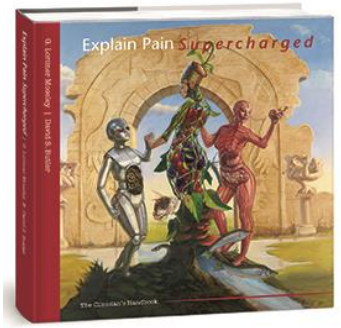
PDF:

- https://www.svhm.org.au/ArticleDocuments/2058/BWCPM-referral-guidelines-and-referral-form.pdf.aspx?embed=y

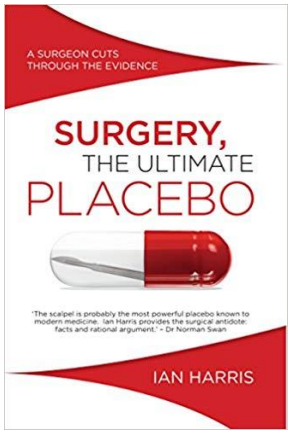
DOCX:

- https://www.svhm.org.au/ArticleDocuments/2058/BWCPM-referral-guidelines-and-referral-form%202023.docx.aspx

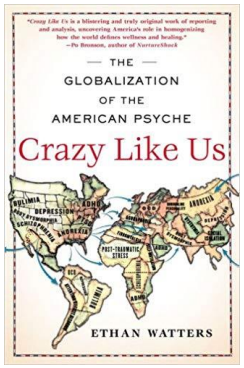
Thought Provoking books



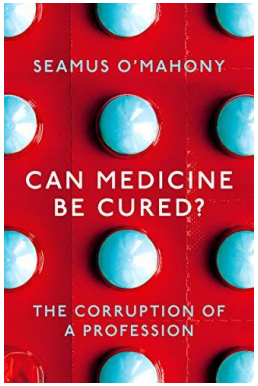
Explain Pain supercharged - By David Butler and Lorimer Moseley



Surgery, the Ultimate Placebo – Ian Harris



Crazy Like Us – Ethan Watters



Can medicine be cured? – Seamus O'Mahony

Thought Provoking articles

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- Prossin AR[1], Koch AE[2,3], Campbell PL[2], Barichello T[4,5], Zalcman SS[6], Zubieta JK[7,8,9]. Acute experimental changes in mood state regulate immune function in relation to central opioid neurotransmission: a model of human CNS-peripheral inflammatory interaction. Mol Psychiatry. 2016 Feb;21(2):243-51. doi: 10.1038/mp.2015.110. Epub 2015 Aug 18.
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- Carr DB[1], Bradshaw YS. Time to flip the pain curriculum? Anesthesiology. 2014 Jan;120(1):12-4
- Mark R. Hutchinson, Yehuda Shavit, Peter M. Grace, Kenner C. Rice, Steven F. Maier, and Linda R. Watkins Exploring the Neuroimmunopharmacology of Opioids: An Integrative Review of Mechanisms of Central Immune Signaling and Their Implications for Opioid Analgesia Pharmacol Rev. 2011 Sep; 63(3): 772–810.

“Problems that remain persistently insoluble should always be suspected as questions asked in the wrong way”

Alan Watts

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Questions?