

Pain & the Brain



I'm a Pain Specialist –
isn't that *Terrible*?



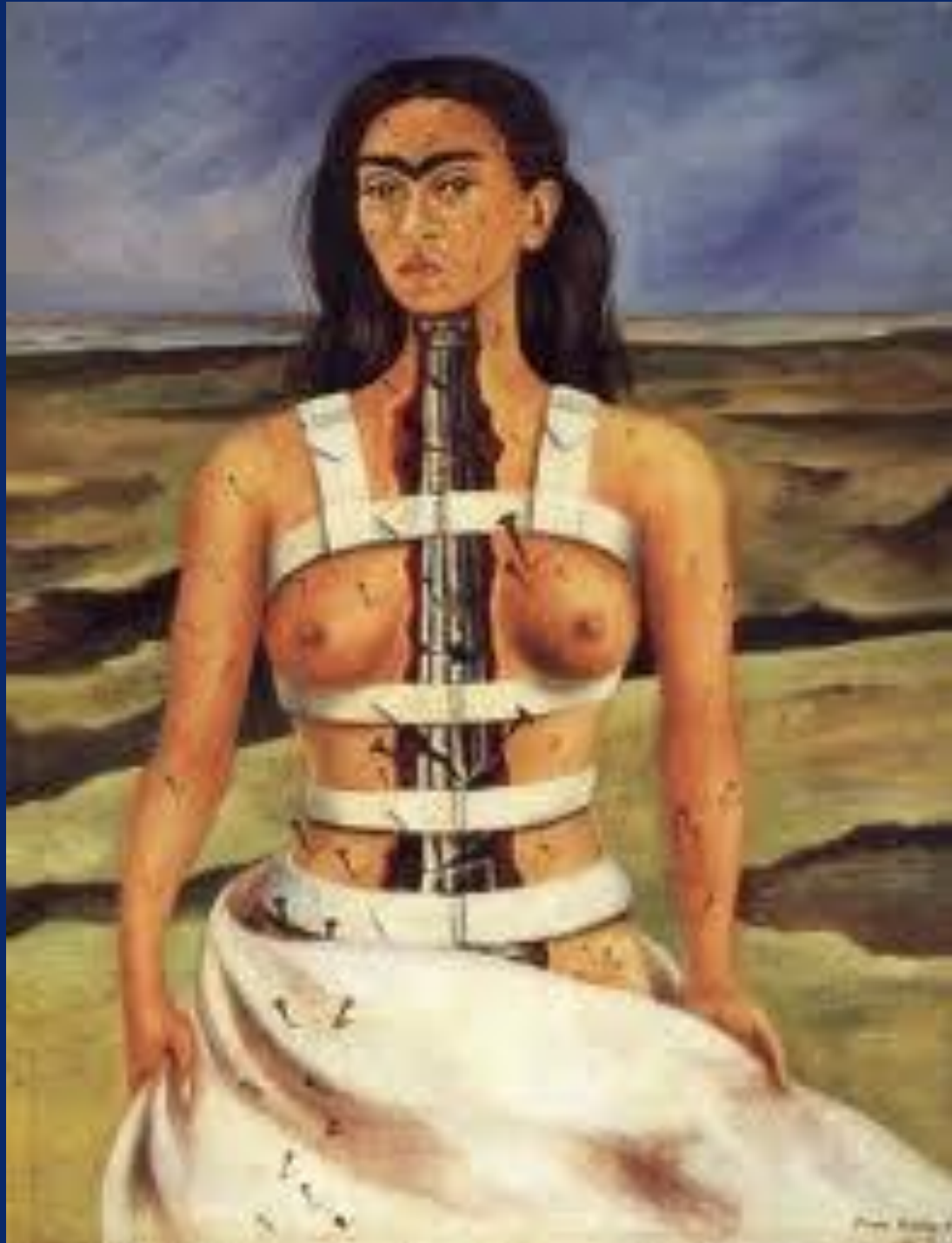


awareness_test.mp4



What is pain?

- An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage





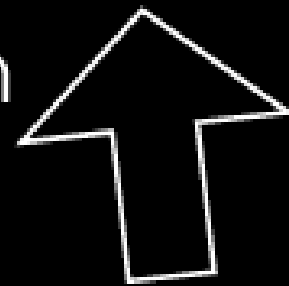
That's got to
hurt!!!

Nociception

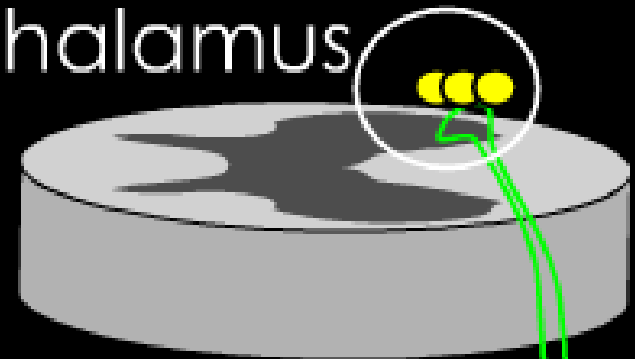
www.bodyinmind.com.au

© lorimer moseley 2010

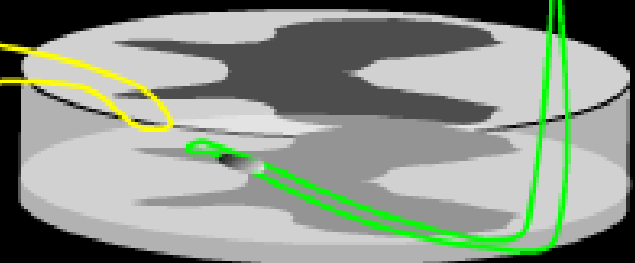
to the brain



thalamus



"Danger in my
area"



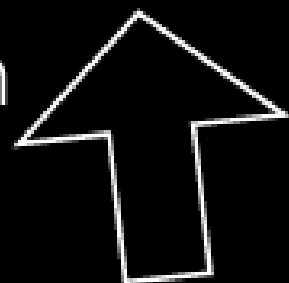
Nociception

www.bodyinmind.com.au

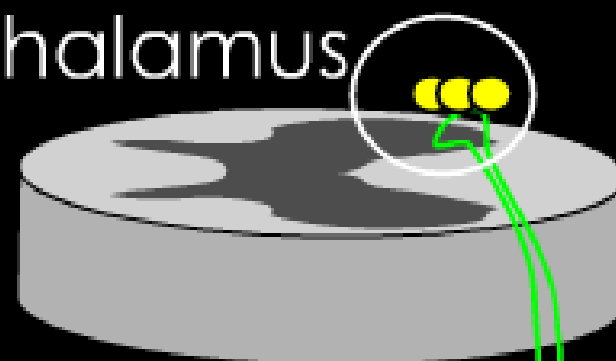
© Lorimer Moseley 2010

*Relay/prioritisation centre -
"what is the most important
thing for the brain to know
about right now?"*

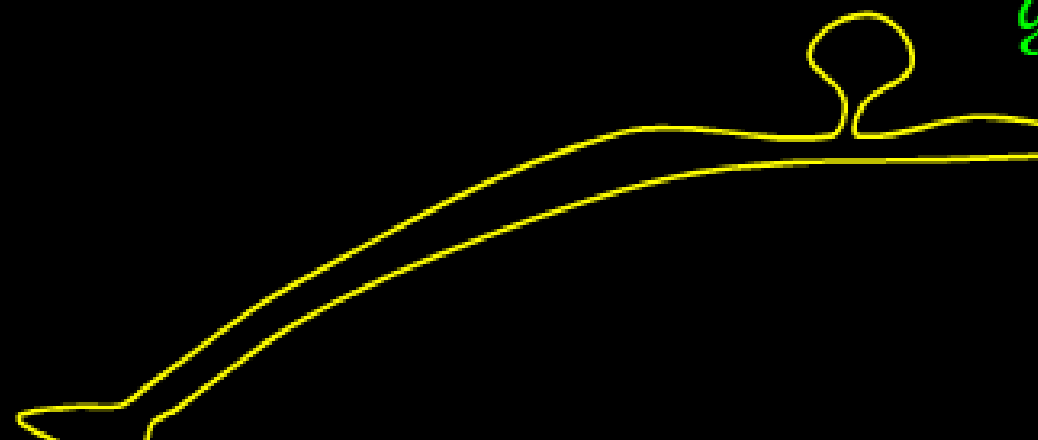
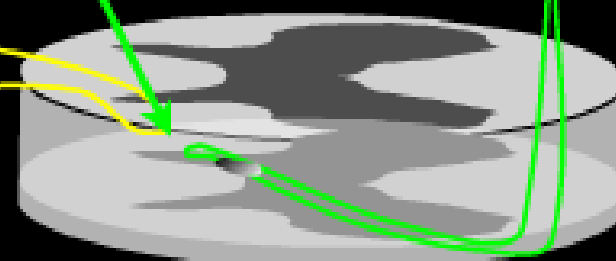
to the brain



thalamus

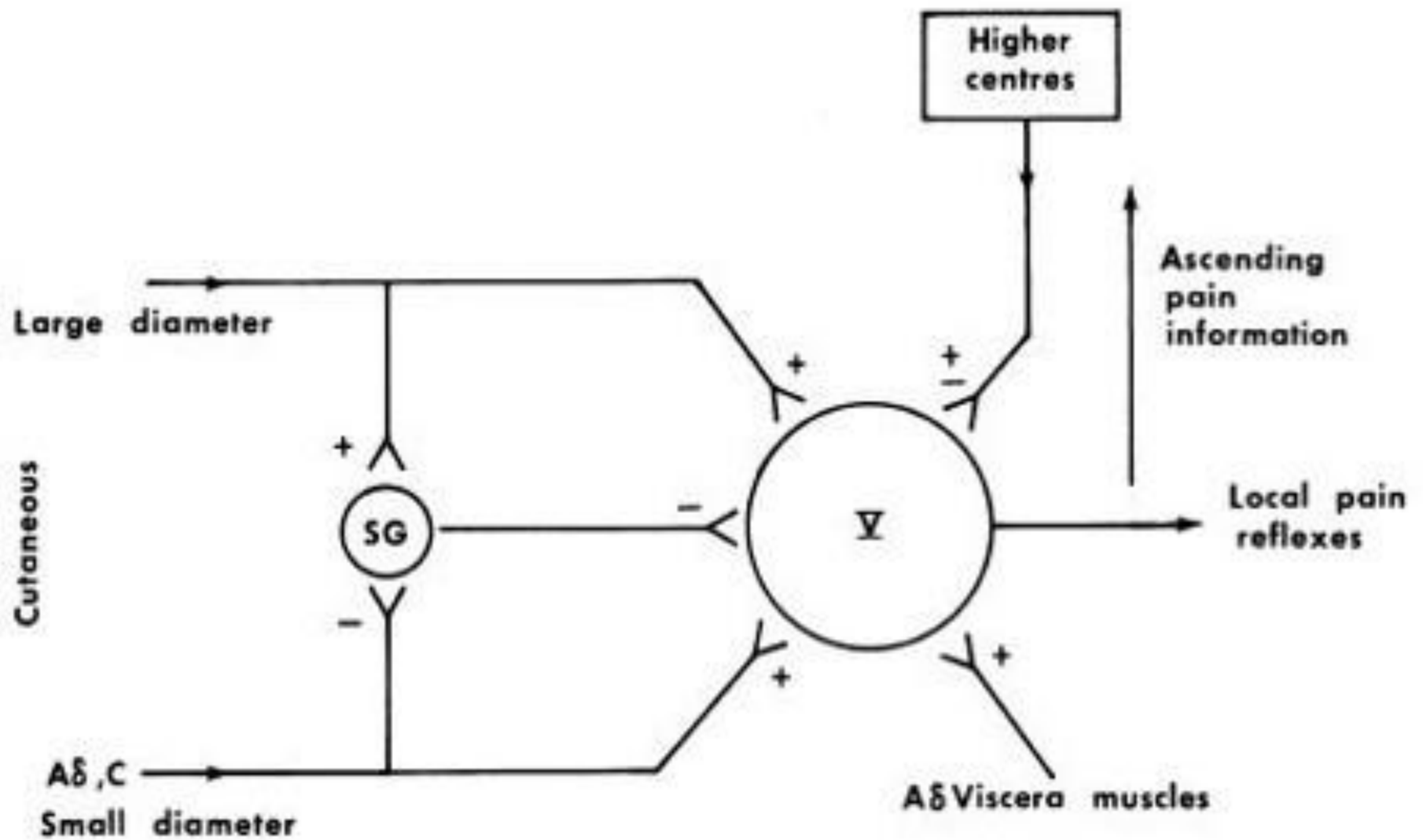


*Site of the
famous pain
gate*



Melzack & Wall

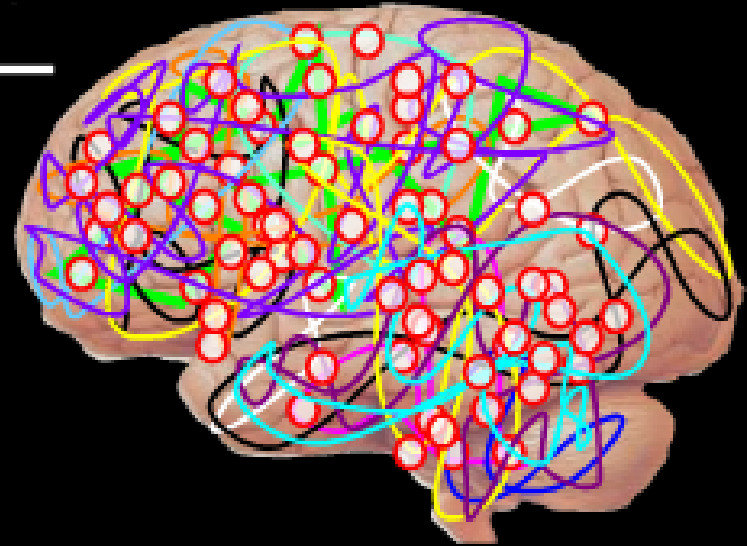








Pain



Beliefs

Knowledge, logic

Other sensory cues

Social context

Anticipated consequences

Family

media

previous history

culture

GP

work

physiotherapist

education

activity self-efficacy

access

exposure

media

solicitor

case manager

finances

GFC

9/11

season

allergies & illnesses

faith

fashion

self-efficacy

worry

love

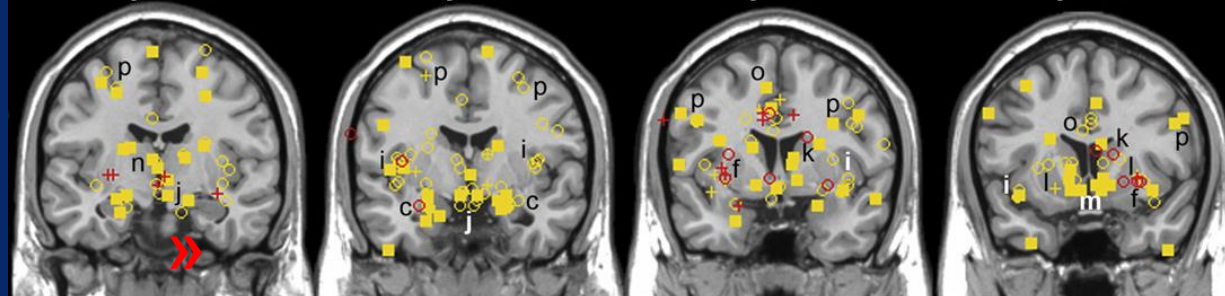
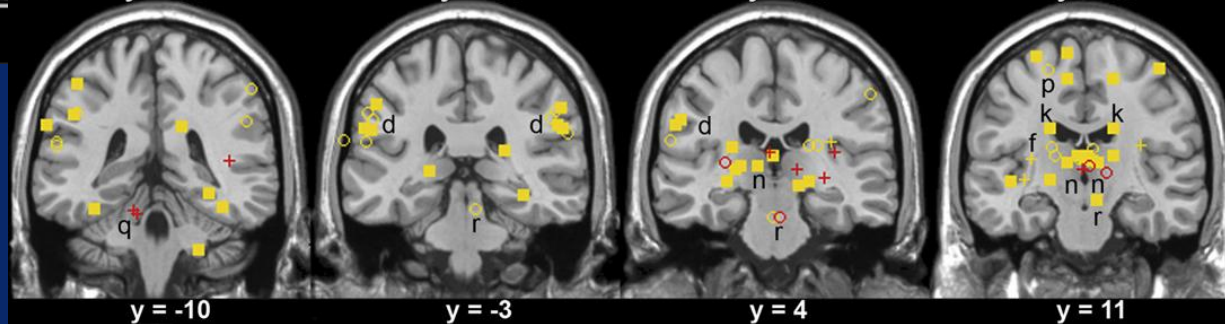
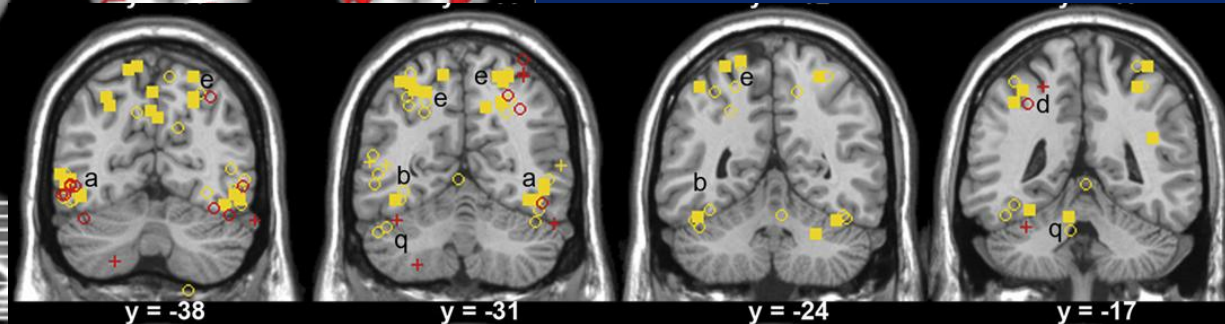
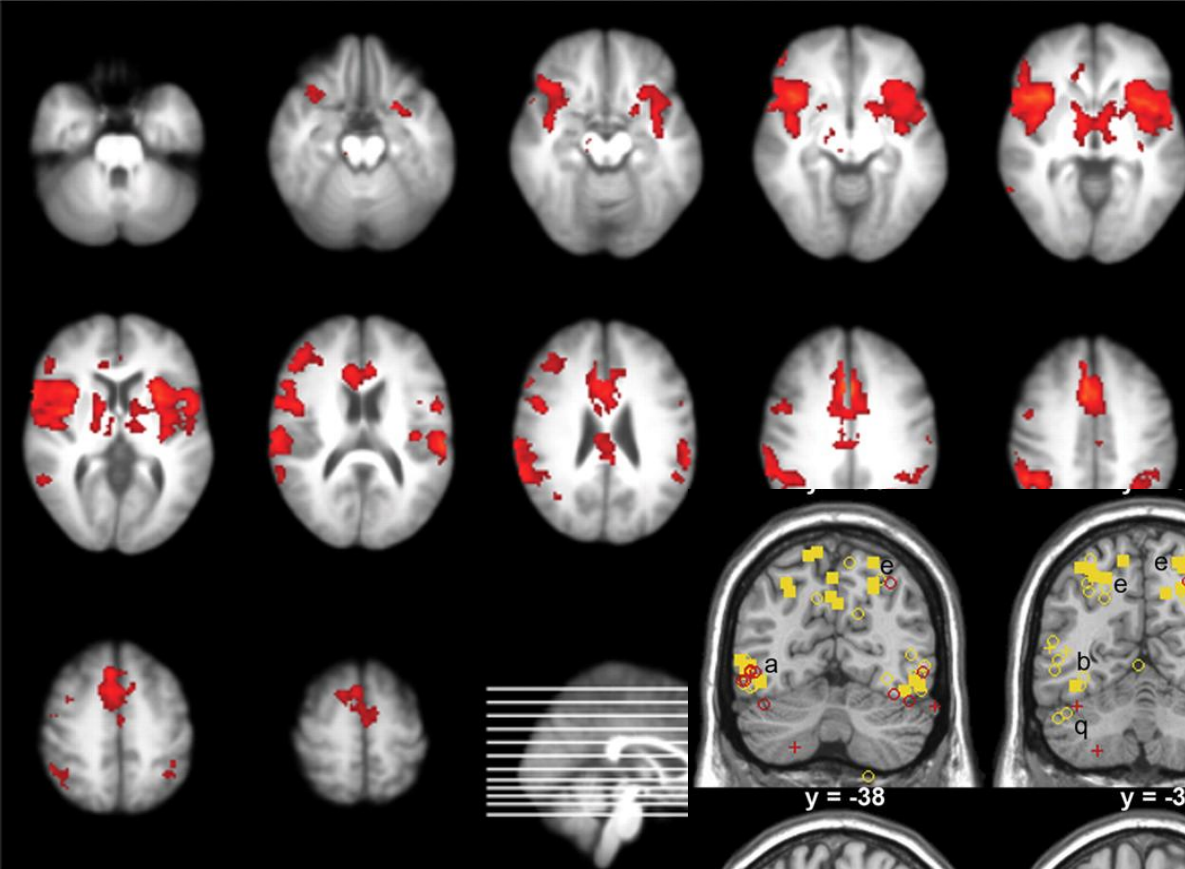
etc etc etc

The Biopsychosocial Model of Pain

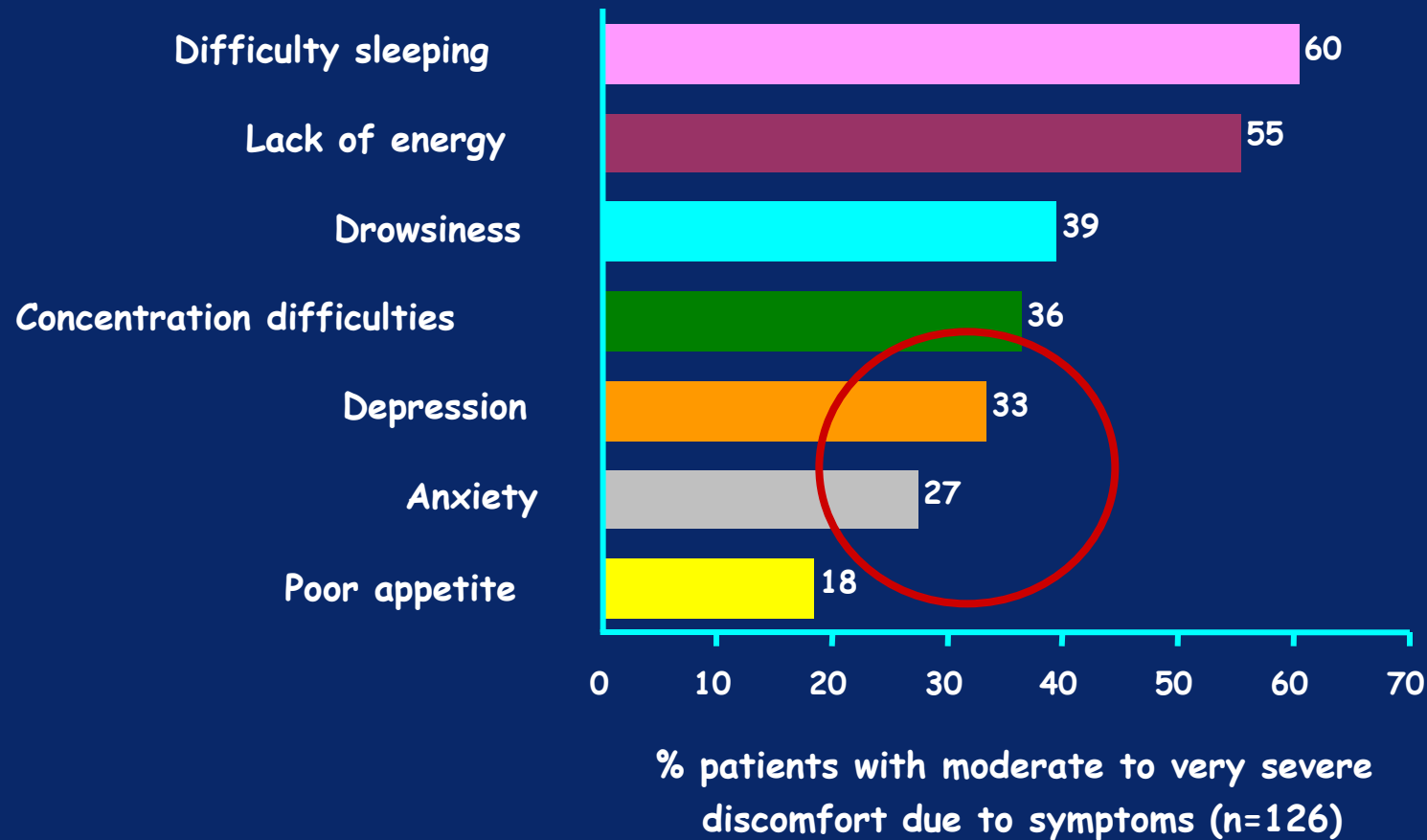
- Or
.....sociophychobiomedic
al

AMYGDALA INSULA

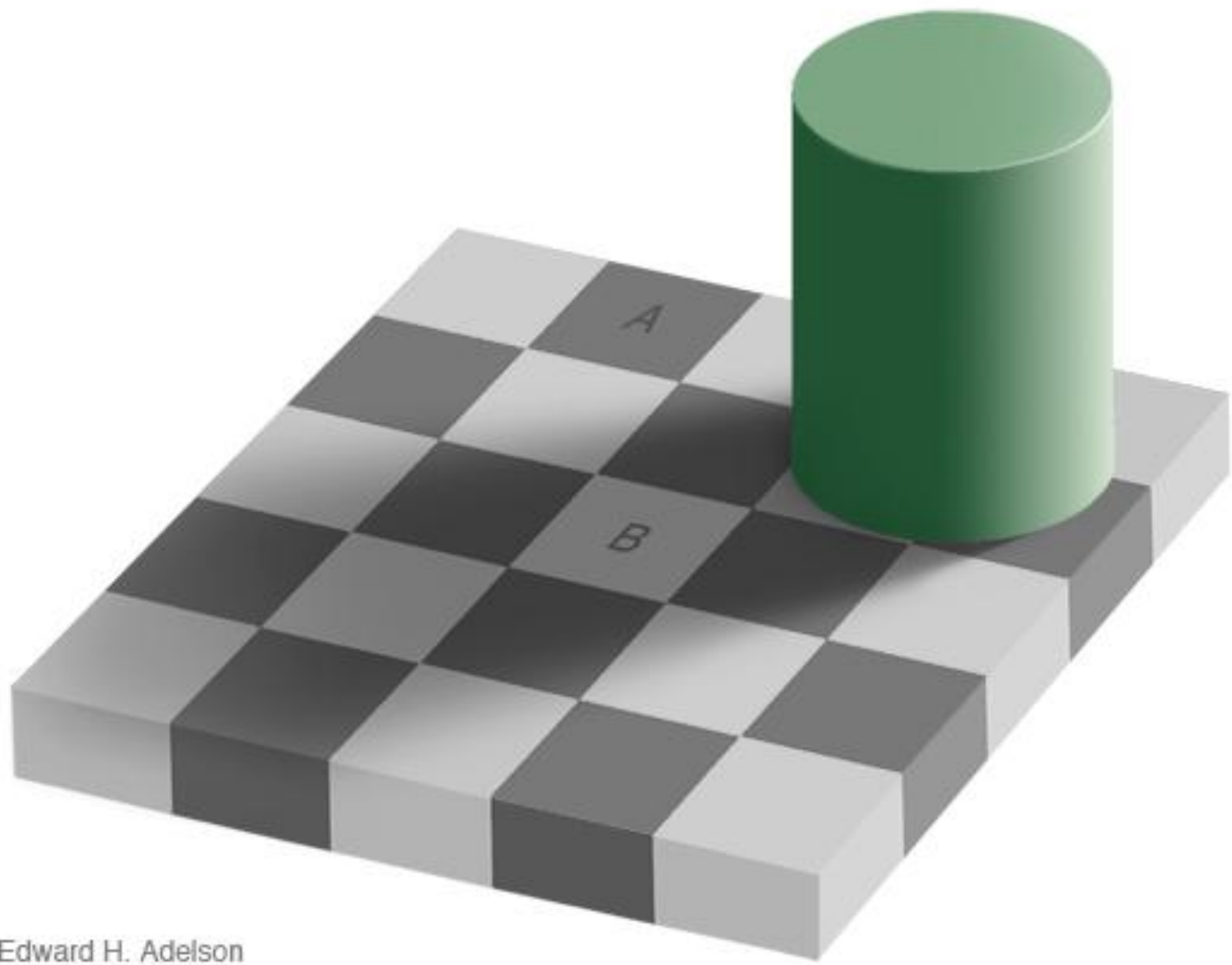
PARIETAL CORTEX
ANTERIOR CINGULATE
CAUDATE NUCLEUS
CEREBELLUM

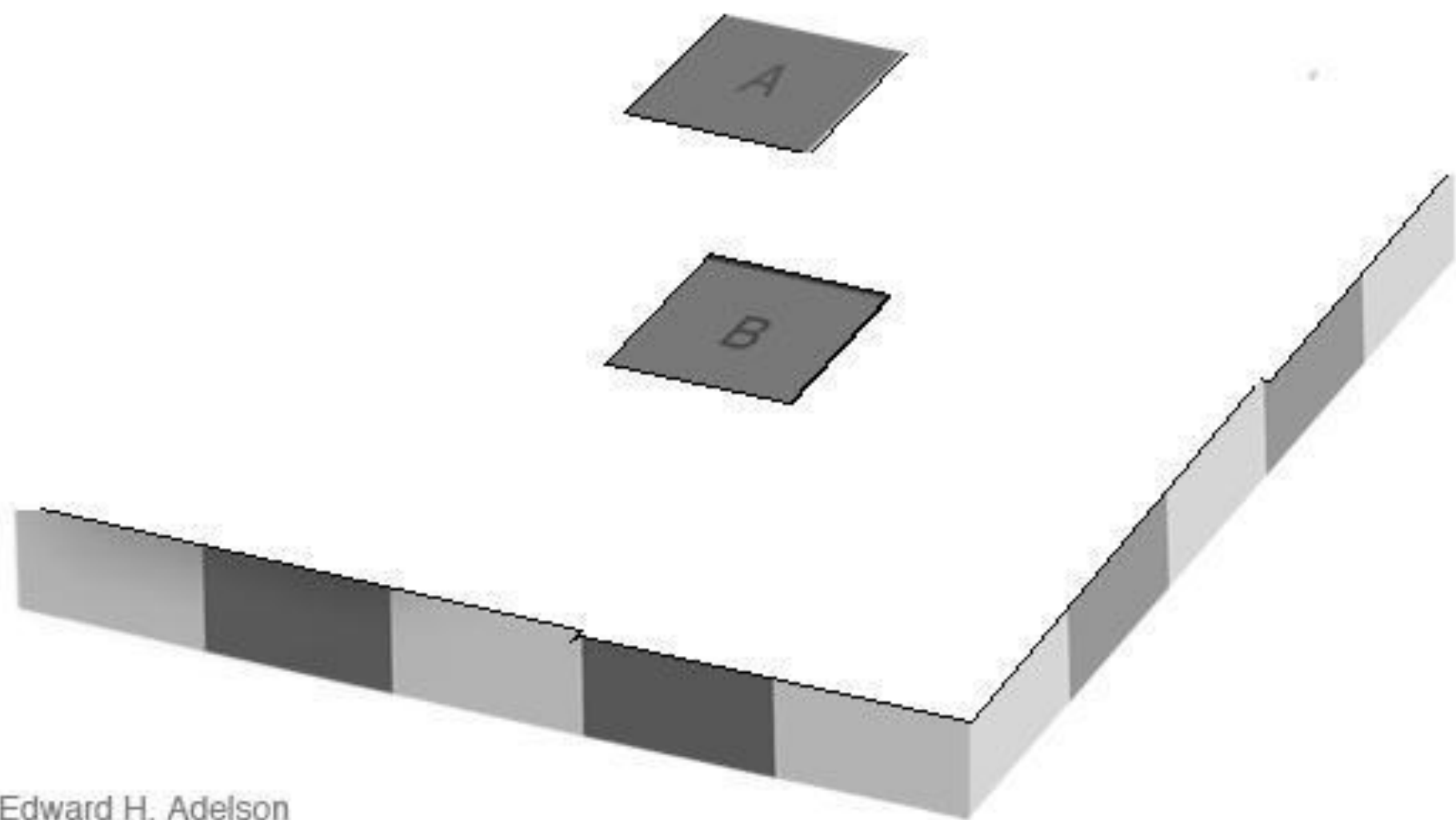


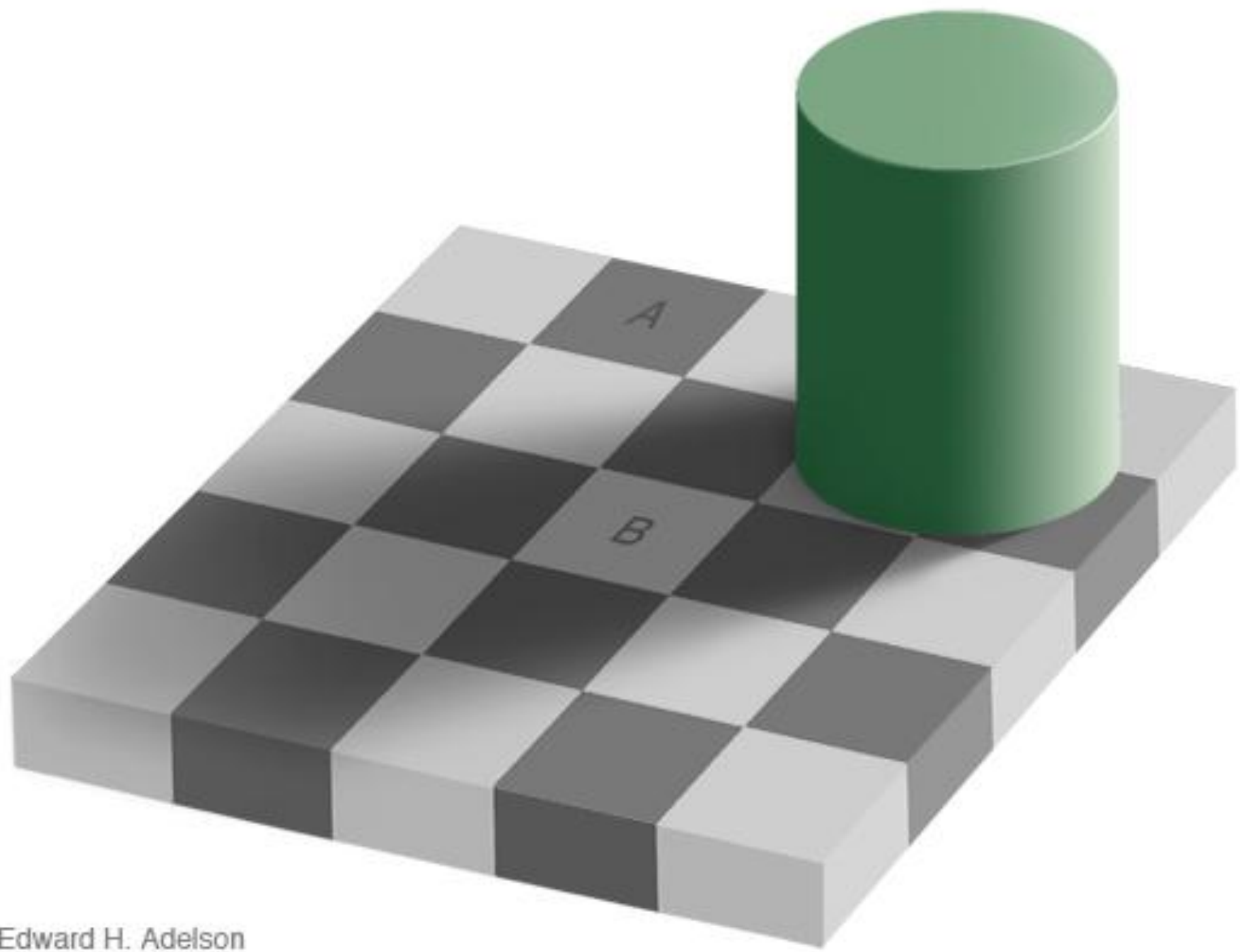
Problems associated with pain

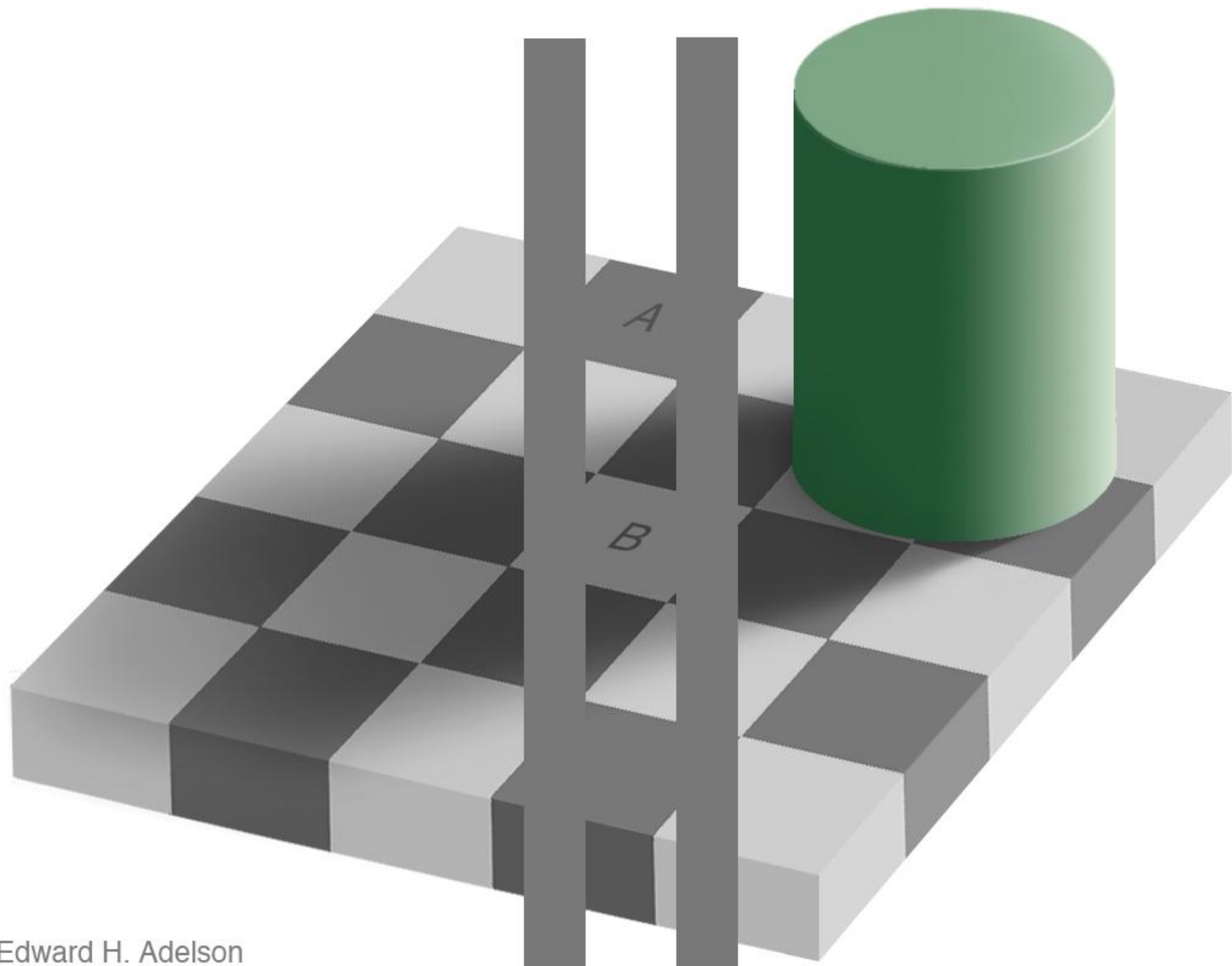


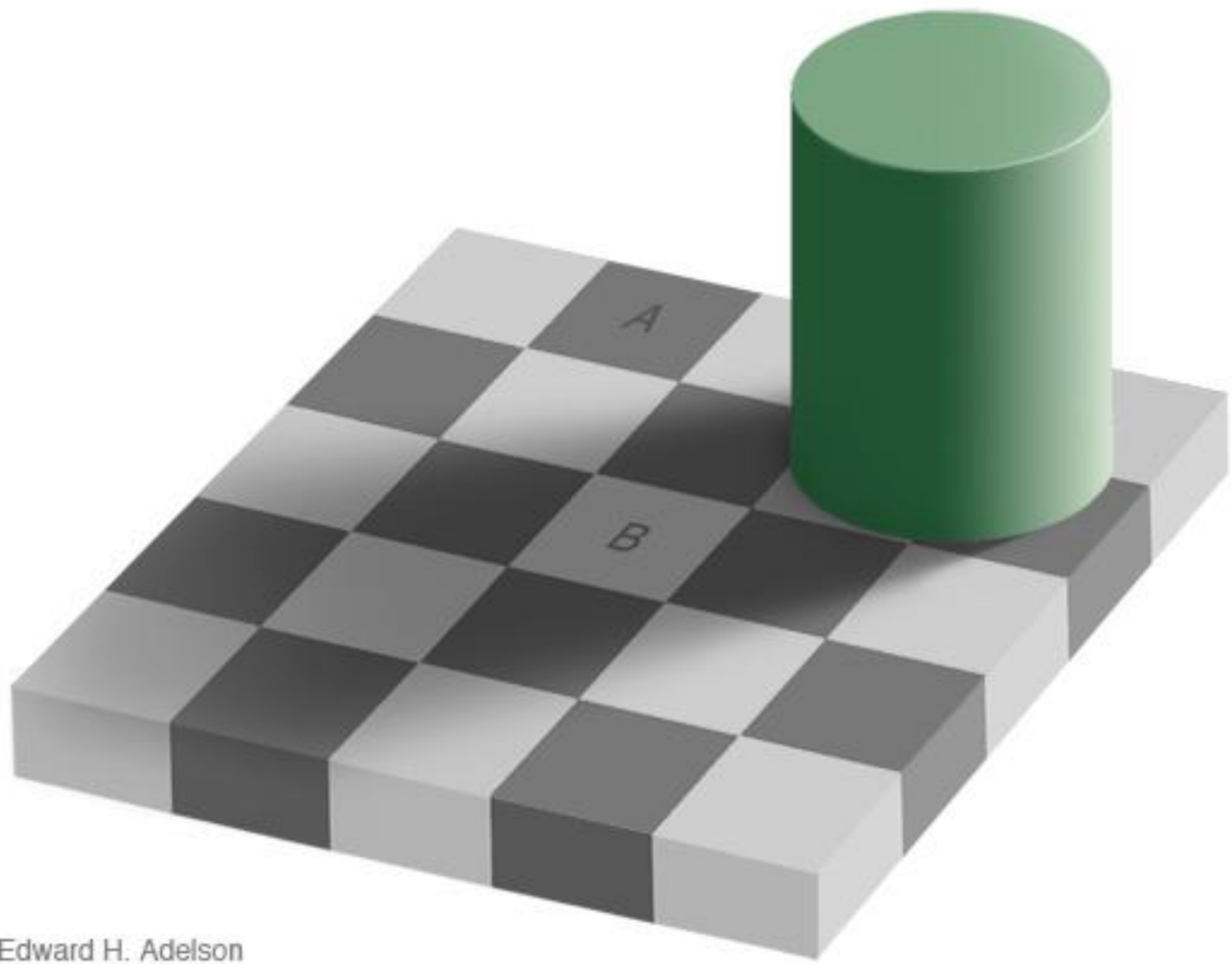








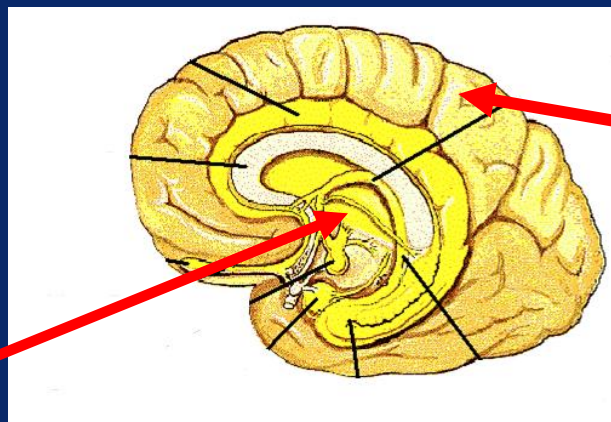




AFFECTIVE Feelings

Fear, anxiety, sleep,
punishment
autonomic changes

Limbic System



SENSORY
Conscious Brain
Thinking

Location
rational

“oh bother”

Muscle tightening
Recruitment
Sensitivity
Sometimes - most of the
time

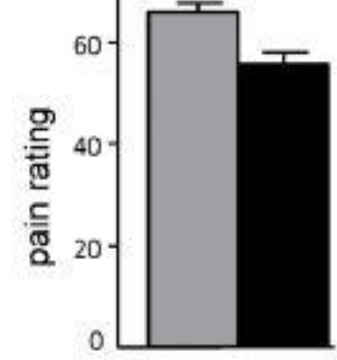
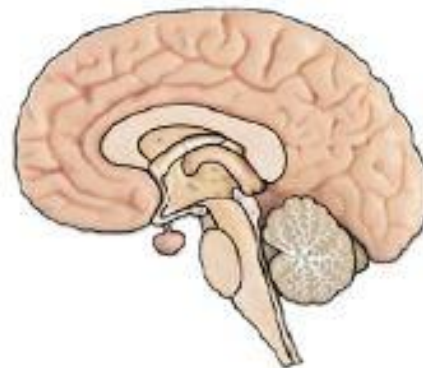
Spinal cord

Wind-up and long term potentiation
Central sensitization

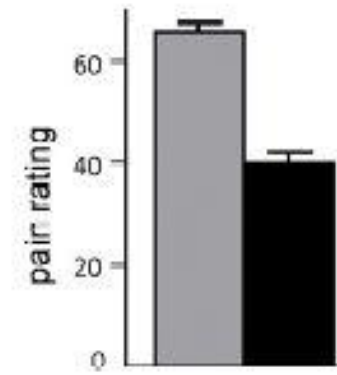
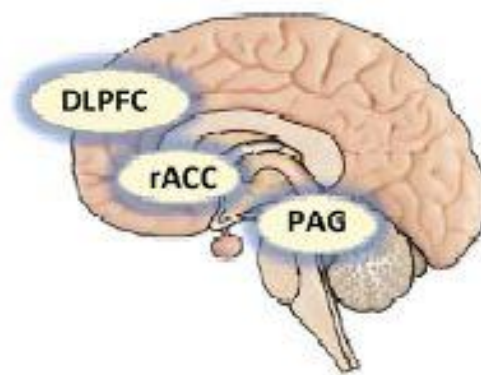


*"Ask your doctor if taking a pill to solve all
your problems is right for you."*

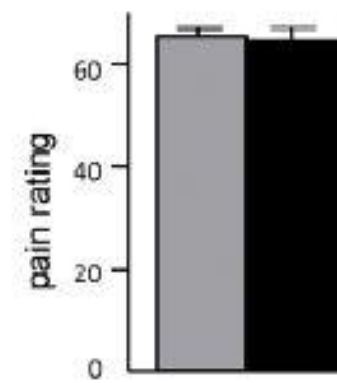
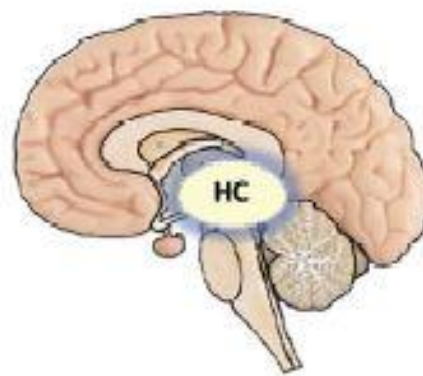
no
expectation



positive
expectation

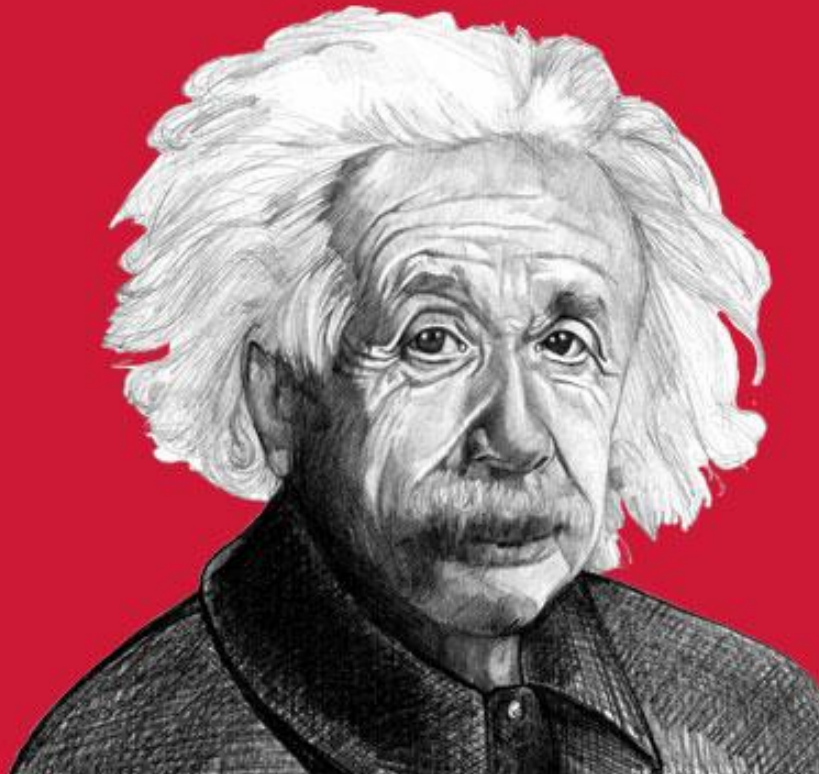


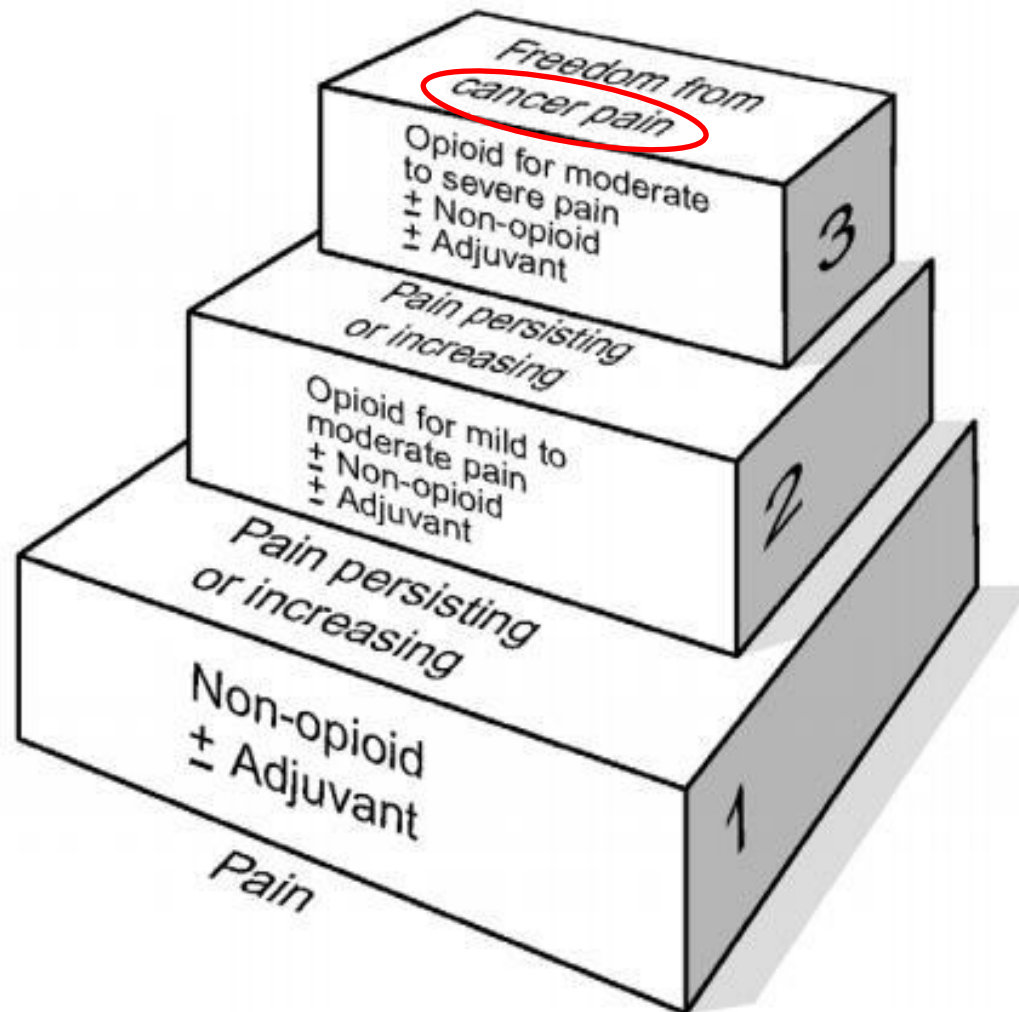
negative
expectation



■ baseline
■ opioid analgesia

The difference between
stupidity and genius is that
genius has its limits.





The Tragedy of Needless Pain

Contrary to popular belief, the author says, morphine taken solely to control pain is not addictive. Yet patients worldwide continue to be undertreated and to suffer unnecessary agony

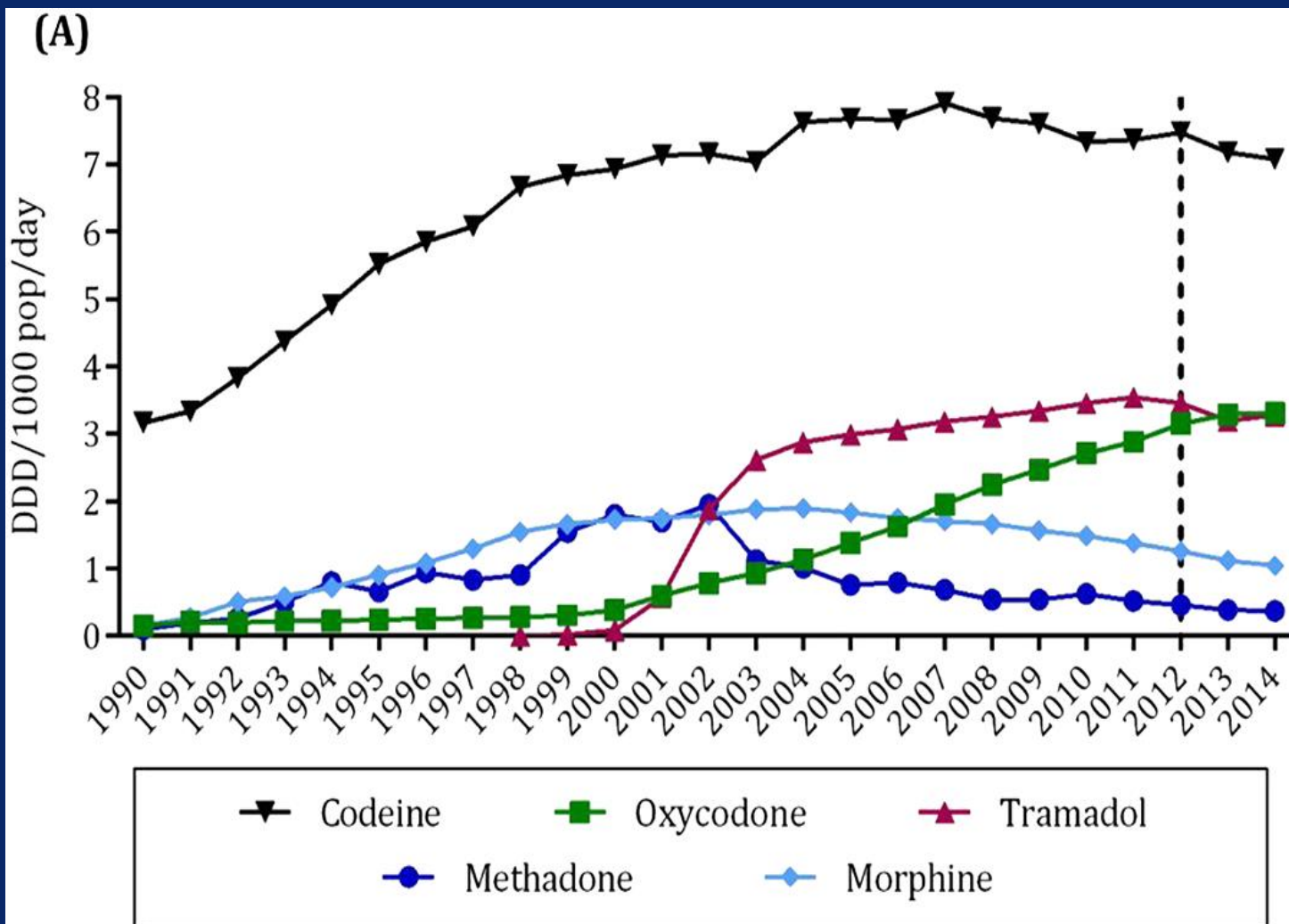
by Ronald Melzack

“Pain,” as Albert Schweitzer once said, “is a more terrible lord of mankind than even take morphine to combat pain, it is rare to see addiction—which is characterized by a psychological craving for many Middle Eastern countries) and then drying the exudate to form a gum. This gum—the opium—can be



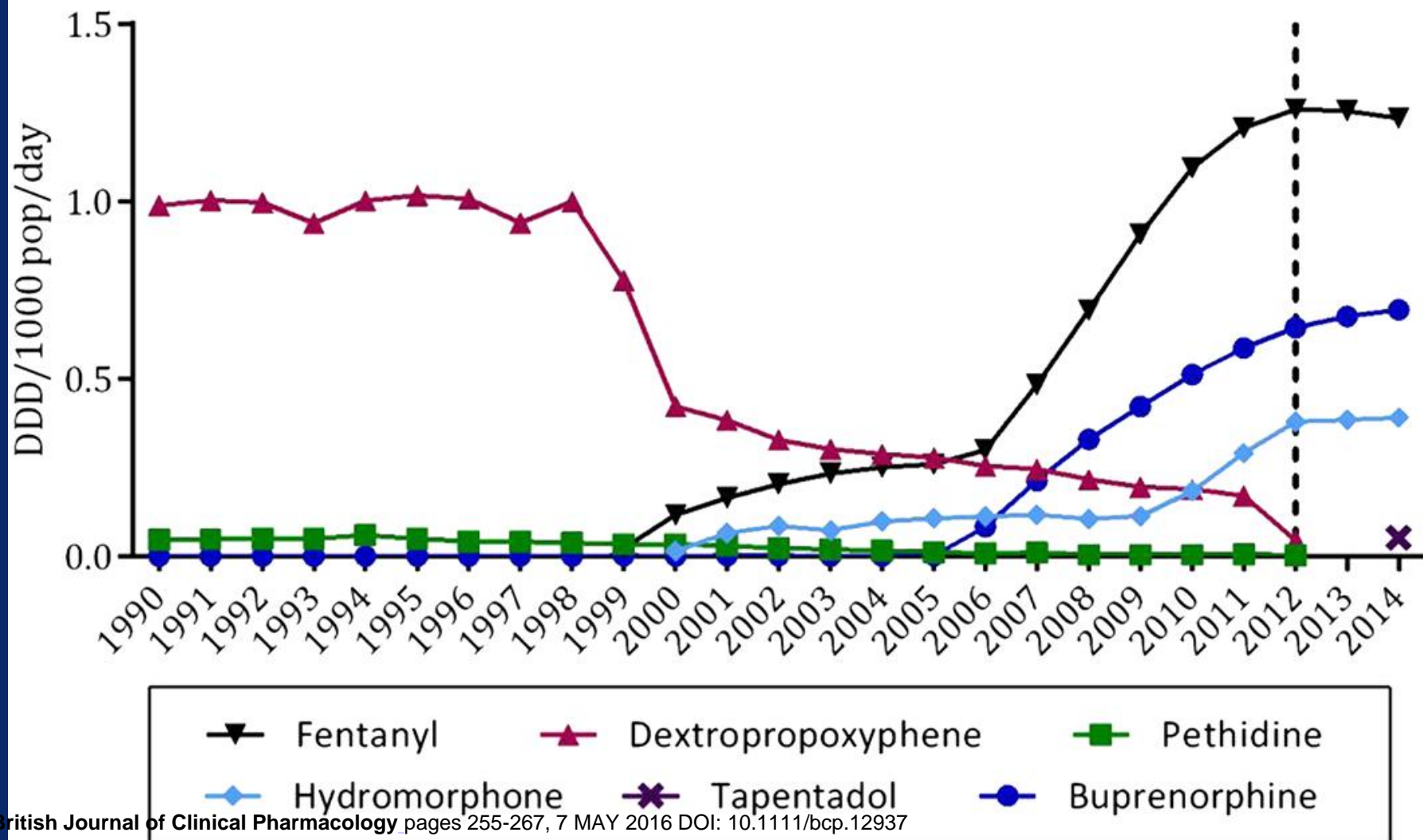
**Chronic Pain as a
Disease State**

Twenty-five years of prescription opioid use in Australia: a whole-of-population analysis using pharmaceutical claims



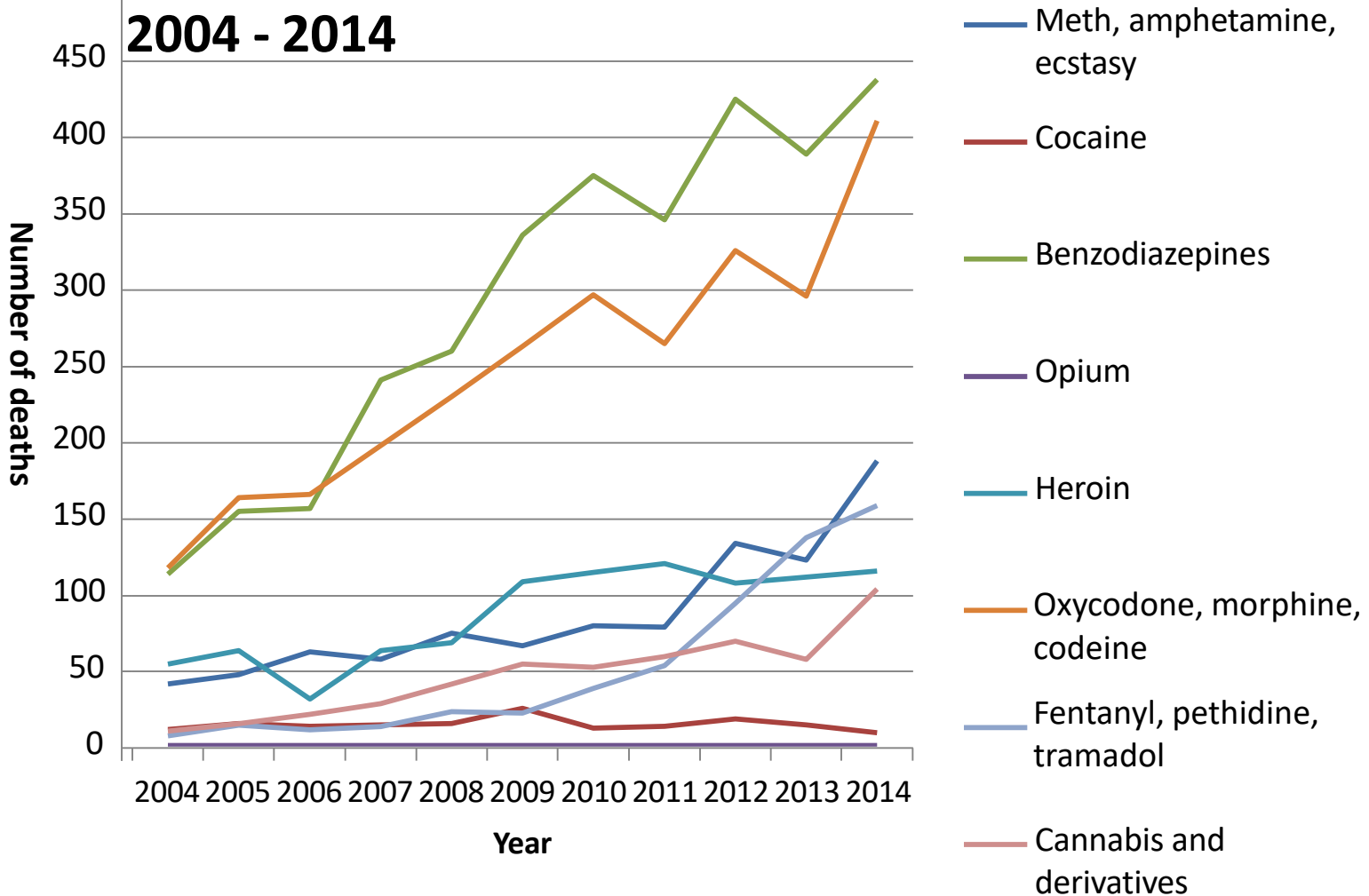
Twenty-five years of prescription opioid use in Australia: a whole-of-population analysis using pharmaceutical claims

(B)



*Note, this data is for all
drug related deaths, not
just accidental overdose*

All drug related deaths by drug type 2004 - 2014



Who is dying?

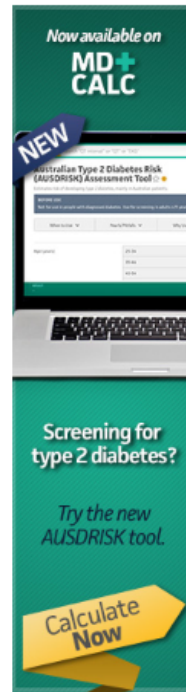
- Australians aged 40-49 are the most likely to die of a drug overdose - almost doubled from 174 deaths in 2004 to 342 in 2014 – a 96 per cent rise.
- Large increases in overdose deaths in rural and regional areas are driving the overall increase.
- Prescription medications were responsible for more drug-related deaths (71 %) than illicit drugs (29 %).

Factors noted in coroners reports

- Patients requesting private scripts for drugs of dependence.
- Patients presenting with out-dated doctor's letter requesting medication.
- Excessive prescribing without proper assessment of potential psychiatric conditions.
- Excessive prescribing without proper assessment of pain management options, including specialist referral.
- Prescribing contrary to statutory guidelines or regulations.
- Prescribing dangerous (high-risk) medication to unknown patients, particularly opioids and benzodiazepines.
- Prescribing benzodiazepines as a first-line treatment for psychiatric disorders.
- The inappropriate use of benzodiazepines in pain management.
- The inappropriate use of opioids in pain management, particularly chronic non-malignant pain.
- The inappropriate combined use of benzodiazepines and opioids in pain management.
- The use of pethidine in pain management (particularly for the treatment of migraines).
- The use of injectable medication, particularly opioids, by GPs for pain treatment.
- Prescription of medications with potentially dangerous interactions, particularly, tramadol and antidepressant medication (risk of serotonin syndrome).
- The use of quetiapine to treat insomnia and anxiety.

Assessing risk???

<https://www.mdcalc.com/opioid-risk-tool-ort-narcotic-abuse>



Opioid Risk Tool (ORT) for Narcotic Abuse ☆ ●

Estimates risk of opioid-related aberrant behaviors.

BEFORE USE

This tool studied patients at a chronic pain clinic.

When to Use ▼

Why Use ▼

Sex

Female

Male

Age 16-45

No

Yes

History of preadolescent sexual abuse

No

Yes

History of depression

No

Yes

History of ADD, OCD, Bipolar, or Schizophrenia

No

Yes

Personal history of alcohol abuse

No

Yes

Personal history of illegal drug abuse

No

Yes

Personal history of prescription drug abuse

No

Yes

Family history of alcohol abuse

No

Yes

Family history of illegal drug abuse

No

Yes

Family history of prescription drug abuse

No

Yes

9 points

High risk for future opioid-related aberrant behaviors. 91% of high-risk patients had aberrant behaviors.

This tool should be administered to patients upon an initial visit prior to beginning opioid therapy for pain management. A score of 3 or lower indicates low risk for future opioid abuse, a score of 4 to 7 indicates moderate risk for opioid abuse, and a score of 8 or higher indicates a high risk for opioid abuse.

Universal Precautions - RACGP

- Make a diagnosis with appropriate differential diagnoses.
- Undertake a psychosocial assessment that includes risk of addictive disorders.
- Use informed consent.
- Use treatment agreements.
- Undertake a pre- and post-intervention assessment that includes pain score and level of function.
- Commence a trial of appropriate opioid therapy with an appropriate combination of adjuvant medications.
- Reassess pain score and level of function.
- Routinely assess the five As of pain medicine (analgesia, activity, adverse events, aberrant behaviour, affect).
- Periodically review the diagnosis and comorbid conditions, including addictive disorders.
- Carefully document initial assessment and each follow-up.



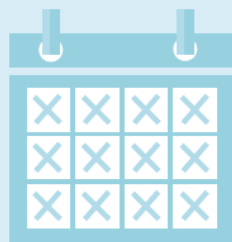
OPIOID USE

Number of prescriptions dispensed



2013-2014

13,905,258



10.1X HIGHER IN SOME
AREAS COMPARED
TO OTHERS



AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

www.safetyandquality.gov.au/atlas

There's an app for that!

<http://www.opioidcalculator.com.au/>

Opioids Reset Pref **Convert**

Total Morphine oral ~ 420 mg/day

Reset the selected preferences by tapping on Pref

ORAL

mg/day
Oxycodone — **80** +
Morphine 120

mg/day
Oxymorphone — +

mg/day
Tapentadol — +

mg/day
Tramadol — +

SUBLINGUAL

mcg/day
Buprenorphine — +

TRANSDERMAL

mcg/hr
Buprenorphine — +

mcg/hr
Fentanyl — **100** +
Morphine 300



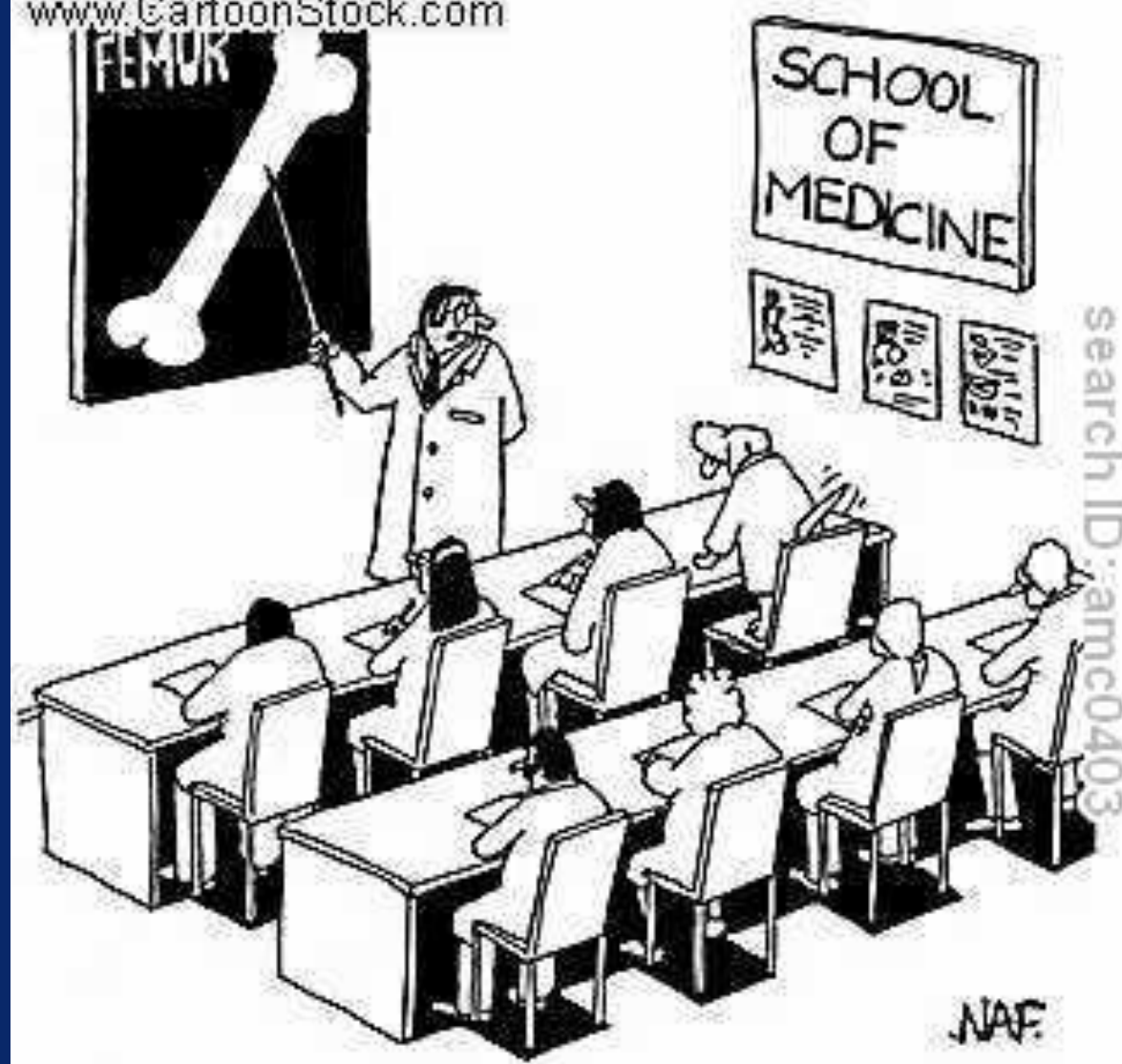
OUCH!!!





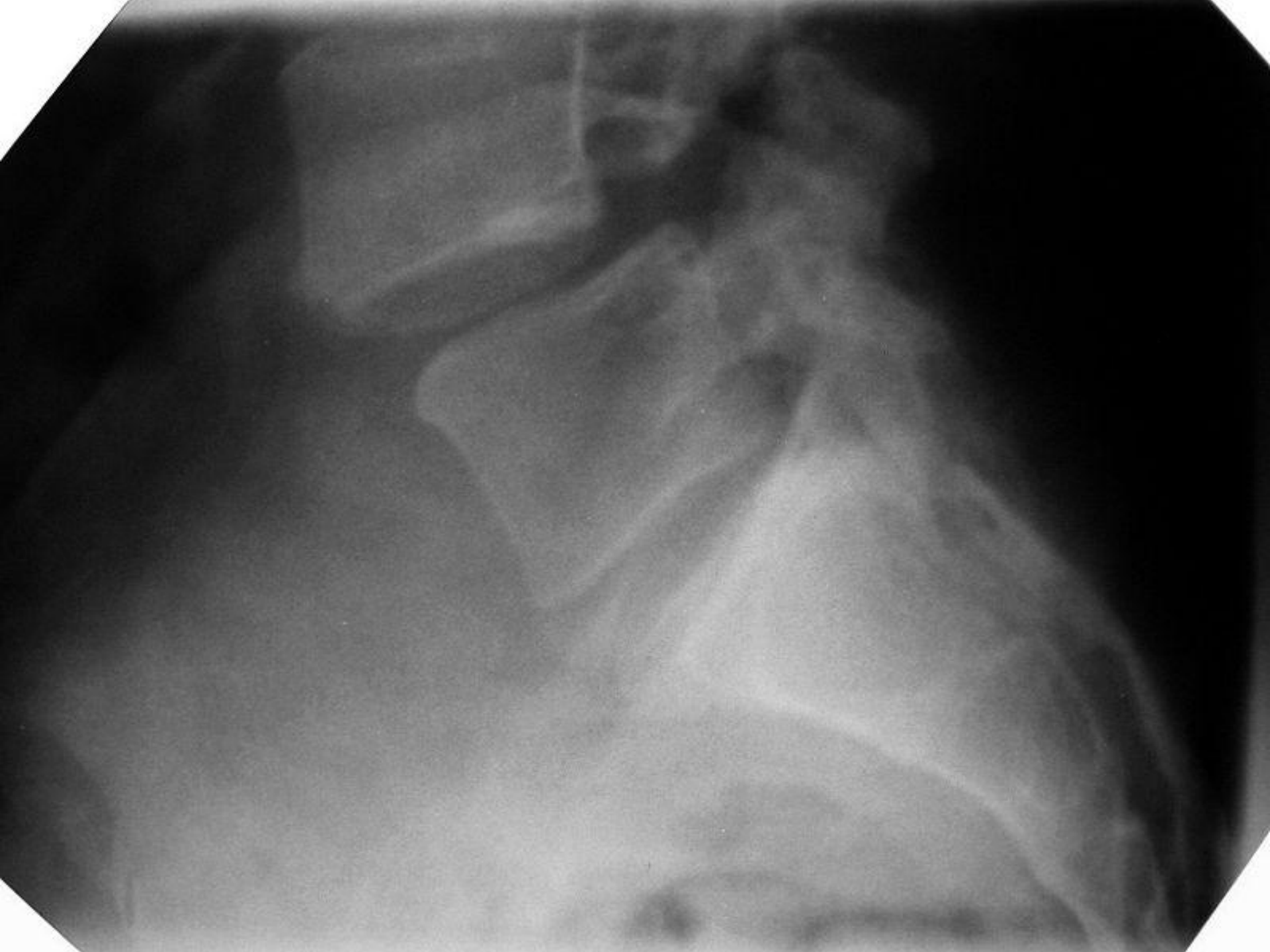


© Original Artist
Reproduction rights obtainable from
www.CartoonStock.com



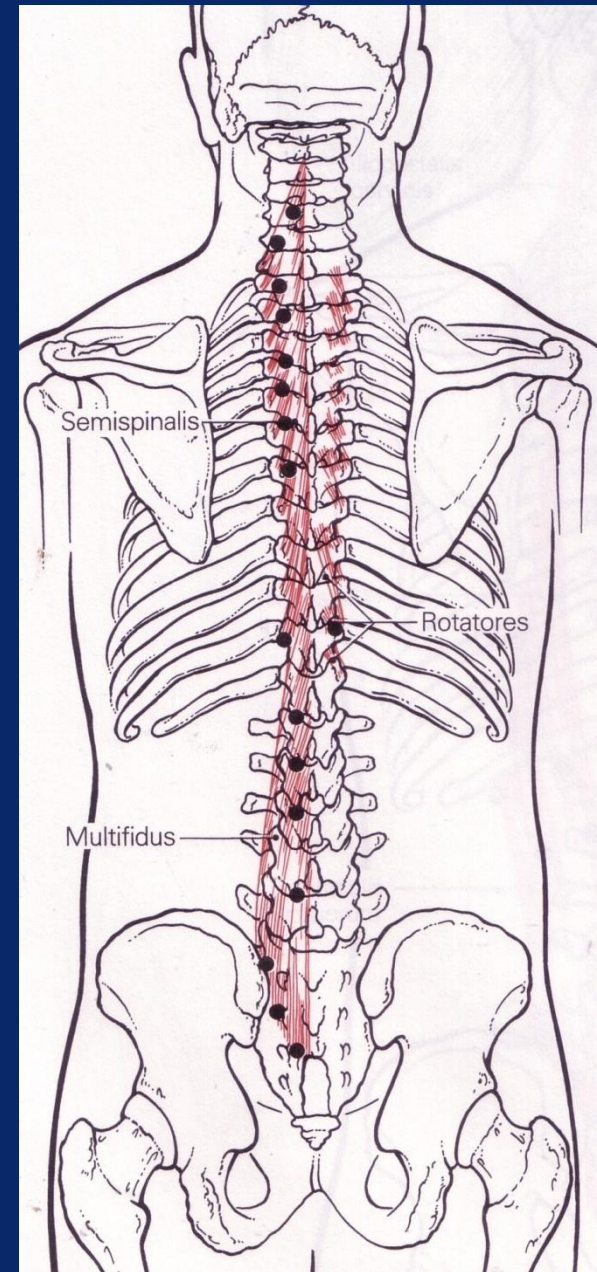
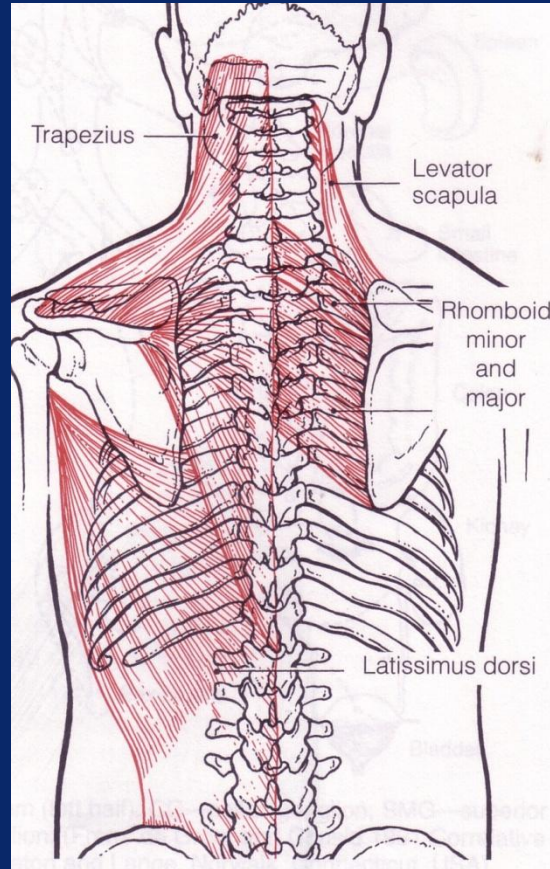
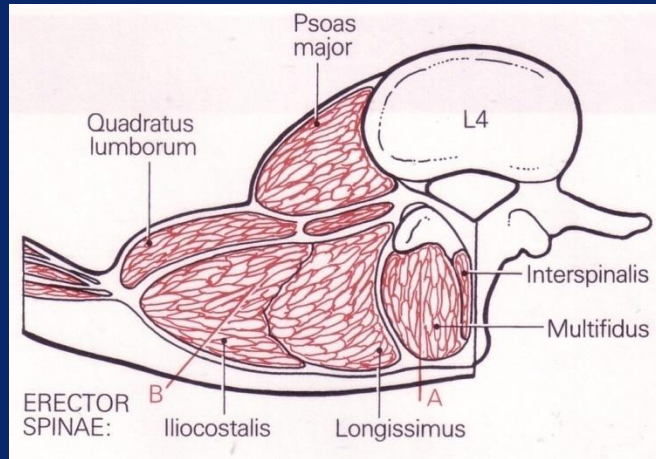
"Higgins, control yourself and sit down!"

search ID: amc0403





So what is causing the pain?



Neuropathic Pain

- How much chronic pain is neuropathic?

What is neuropathic pain?

- “Pain arising as a direct consequence of a lesion or disease affecting the somatosensory system.”
- Grading system of definite, probable, and possible neuropathic pain

Diagnosis - DN4

DN4 Questionnaire

PATIENT INTERVIEW

QUESTION 1: Does the pain have any of the following characteristics?

1. Burning
2. Painful sensation of cold
3. Electric shocks

QUESTION 2: Is the pain associated with any of the following symptoms in the same area?

4. Tingling
5. Pins and needles
6. Numbness
7. Itching

PATIENT EXAMINATION

QUESTION 3: Is the pain located in an area where examination reveals either of the following?

8. Hypoesthesia to touch
9. Hypoesthesia to prick

QUESTION 4: Is the pain provoked or increased by the following?

10. Brushing

YES = 1 point

NO = Zero points

Patient's score: /10

Bouhassira D, et al. Pain 2005;114:29-36.

33

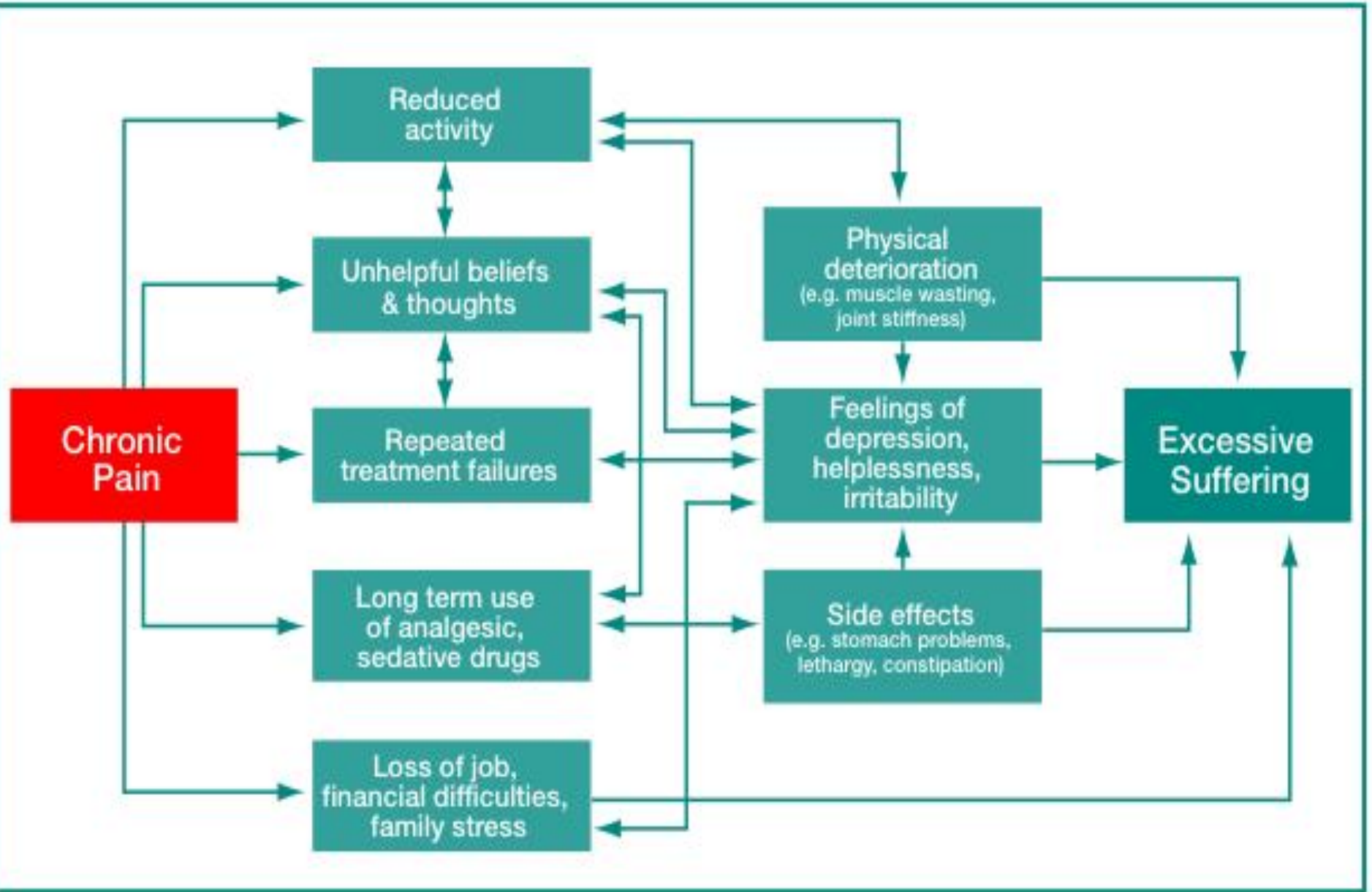
- <http://www.cheo.on.ca/uploads/1199%20DN4NeuropathicDiagnosticQuestionnaireFinal.pdf>

Prevalence

- A proportion of patients with persistent pain experience Neuropathic Pain – 7% in this study
- Prevalence of chronic pain with neuropathic characteristics in the general population - Didier Bouhassira

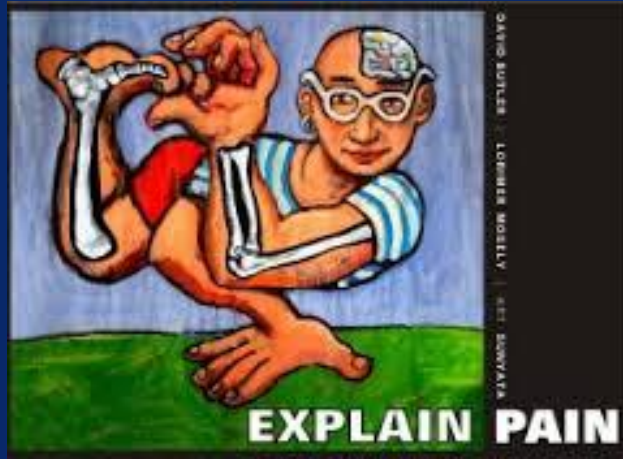
Treatment

- *Guidelines from Lancet 2015*
- *Finnerup et al*



So what can
we do about
pain?

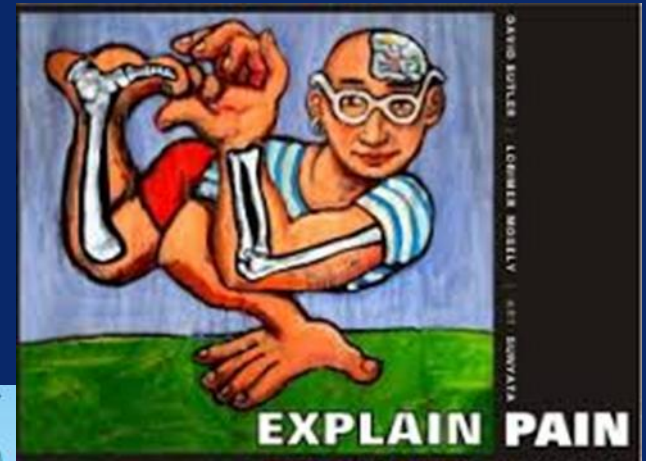
Understanding



Believing



Explaining



Accessibility options

Pain Management Network

Search

For Everyone For Youth PainBytes Spinal Cord Injury Pain Health Professionals

Welcome to the
ACI Pain Management Network

This website is designed to help you gain a better understanding of your pain. The site contains information to enable you to develop skills and knowledge in the self management of your pain in partnership with your healthcare providers.

You will hear from other people just like you and learn how they too have lived with chronic pain. The website has a number of episodes which should be viewed over several days to weeks. If anyone has concerns viewing or reading the material, they should consult their doctor or health professional.

If you are a young person with chronic pain, there's a youth channel with episodes for you to work through with a range of exercises and useful tips throughout.

DR CHRIS HAYES
PAIN SPECIALIST

Video 1 Video 2 Video 3 View video transcript

The new scientific knowledge for people in pain and health professionals can **change outcomes**

Knowing our limits



Pain as the 5th Vital Sign Toolkit

TAKE
Pain: The 5th Vital Sign
5

October 2000

Revised Edition



"Ask your doctor if taking a pill to solve all your problems is right for you."

Sharing decisions



*"When we want your opinion,
we'll give it to you."*

Understanding

Believing

Explaining

Knowing our limits

Sharing decisions

Using common sense

***Thankyou –
questions??***

