



NZDF Wellness Week

INFORMATION FOR
MILITARY & SPORTSPEOPLE

Managing Low Back Pain

HOSTED BY RAYLENE GRANT





Introduction



- Fellow low back pain friend
- Specialist interest is persistent low back pain

Purpose of Today



- Knowledge and education about pain and your body is linked to decreases in symptoms, increased function, decreased fear, increased mobility and a calmer nervous system

Self Healing Machines



- Our bodies are amazing self-modifying, self healing machines
- Every single cell in your body is capable of change until the day you die

I'VE HURT MY BACK



- What do I do?





~~**BED REST**~~

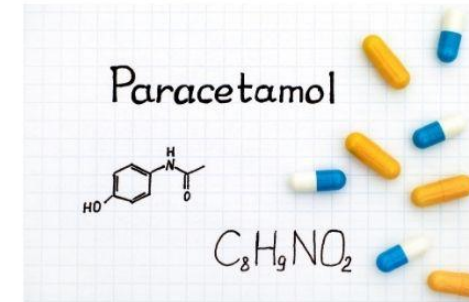
- It wasn't that long ago when 6 weeks bed rest was the prescribed form of treatment for low back pain
- We now know that this is one of the worst things we can do!

THE BODY IS MADE TO MOVE

- When we injure our backs, or have a flare up, the best thing we can do is to keep moving
- Get up, have a shower, go to work if you can (modified if need be)
- Keep moving



DRUGS



- Take medication (paracetamol or ibuprofen) to help with the pain and keep you moving
- Avoid opioids (codeine, tramadol)
- Rats that took 5 days of opioids for sciatica doubled their recovery time
- Glial cells release more inflammatory markers

SHOULD I GET A SCAN



- There is a poor correlation of what you see on imaging and low back pain
- There is no consistent association between spondylolysis and spondylolithesis and low back pain
- Disc herniation is a positive indicator of recovery



SHOULD I GET A SCAN

- The back is one of the strongest structures in the body. It takes a lot to cause permanent injury to it
- Imaging is not recommended in the first 6 weeks of back pain (if not caused by specific traumatic event)
- Imaging actually causes people to have more pain and disability

Looking for the bio in LBP

Case controlled series of 30 patients with acute LBP of likely disc origin (centralisation) Hancock, 2012

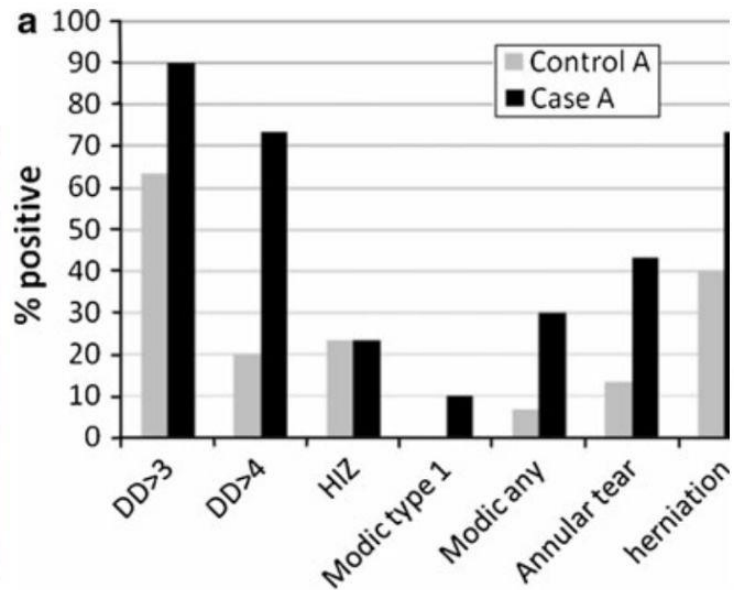
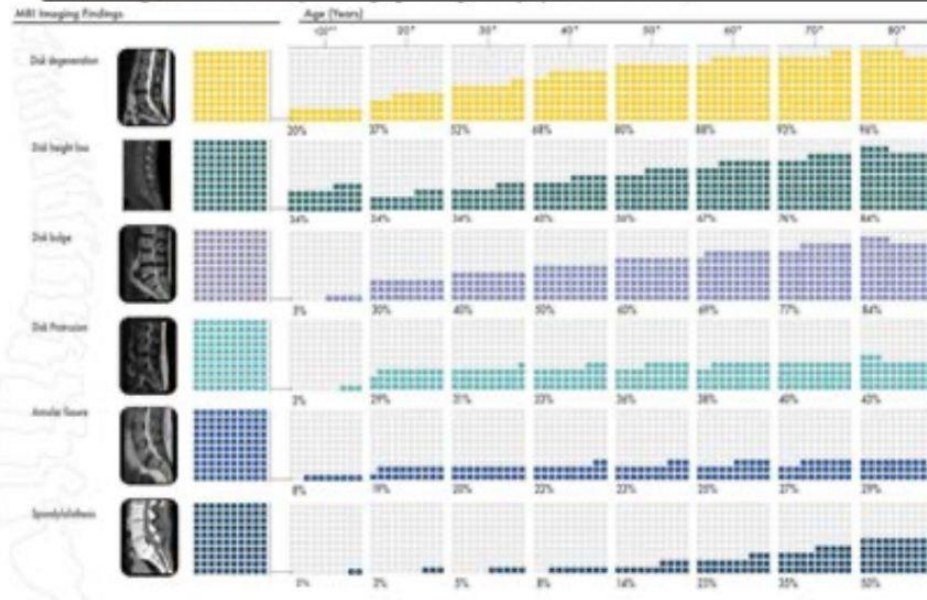


Table 2: Age-specific prevalence estimates of degenerative spine imaging findings in asymptomatic patients^a

Imaging Finding	Age (yr) Brinjikji, 2014						
	20	30	40	50	60	70	80
Disk degeneration	37%	52%	68%	80%	88%	93%	96%
Disk signal loss	17%	33%	54%	73%	86%	94%	97%
Disk height loss	24%	34%	45%	56%	67%	76%	84%
Disk bulge	30%	40%	50%	60%	69%	77%	84%
Disk protrusion	29%	31%	33%	36%	38%	40%	43%
Annular fissure	19%	20%	22%	23%	25%	27%	29%
Facet degeneration	4%	9%	18%	32%	50%	69%	83%
Spondylolisthesis	3%	5%	8%	14%	23%	35%	50%



^aSource: Brinjikji WL, et al. *Spine*. 2015;40(12):E1191-1200.
^bSource: Brinjikji WL, et al. *Incidental Findings on Magnetic Resonance Imaging of the Spine in the Asymptomatic Adult Population: A Systematic Review and Evidence-Based Spine Care Journal*. Vol. 2, No. 2 (2014)

INJECTION OR SURGERY?



- 1/22 people respond to facet joint injection
- surgery is no better than placebo for non-specific low back pain

WHAT DO PEOPLE WANT TO KNOW

What health information do people with low back pain (LBP) want?

Lim YZ, Chou L, Au RTM, et al. *J Physiother* 2019

People with LBP want to understand:

- It's cause and the relevance of underlying pathology (they have a strong desire for diagnosis and imaging).

They want to know information related to:

- Contributing factors, prognosis, future disability and effect on work capacity.
- What might cause flares and how to manage them.
- Management approaches, self-management strategies, prevention, and availability of support services.



They want it delivered in a:

- Clear, consistent and personalised way.
- Suitable tone and using understandable language.

Infographic by @KWernliPhysio

ORIGINAL ARTICLE:

Lim Y Z, L Chou, R T M Au, K L M D Senevirickrama, F M Goutini, A M Briggs, K Sullivan, D M Urquhart and A E Wuka (2019) "People with low back pain want clear, consistent and personalised information on prognosis, treatment options and self-management strategies: a systematic review." *Journal of Physiotherapy*. doi: <https://doi.org/10.1016/j.jphys.2019.05.010>

NOTE: This is my interpretation of the research article only, please read the full text and contact the authors above should you have any questions.



WORDS MATTER

TABLE	TYPICAL WORDS TO AVOID AND ALTERNATIVES FOR PATIENTS	
Words to Avoid	Alternatives	
Chronic degenerative changes	Normal age changes	
Negative test results	Everything appears normal	
Instability	Needs more strength and control	
Wear and tear	Normal age changes	
Neurological	Nervous system	
Don't worry	Everything will be okay	
Bone on bone	Narrowing/tightness	
Tear	Pull	
Damage	Reparable harm	
Paresthesia	Altered sensations	
Trapped nerve	Tight, but can be stretched	
Lordosis	The normal curve in your back	
Kyphosis	The normal curve in your back	
Bulge/herniation	Bump/swelling	
Disease	Condition	
Effusion	Swelling	
Chronic	It may persist, but you can overcome it	
Diagnostics	X-ray or scan	
You are going to have to live with this	You may need to make some adjustments	

WHAT WORDS TO USE

- Most pain is linked to minor strains, which are painful
- Back pain does not mean that your back is damaged, it means that it is sensitised



RECURRANCE



- Awkward postures
- Sitting >5 hours
- Two previous low back pain episodes



INCREASING SPINAL MOBILITY

- Increasing spinal mobility decreases low back pain
- 4 cm improvement in flexion in sitting correlates to good outcomes at follow up



Exercise - What is Best?



- We were made to move
- Exercise is an anti-inflammatory
- Exercise is what our backs need
- What is the best exercise?
- A recent study of 10,000 people showed that Pilates, walking, stretching, gym were all great. Do what you love

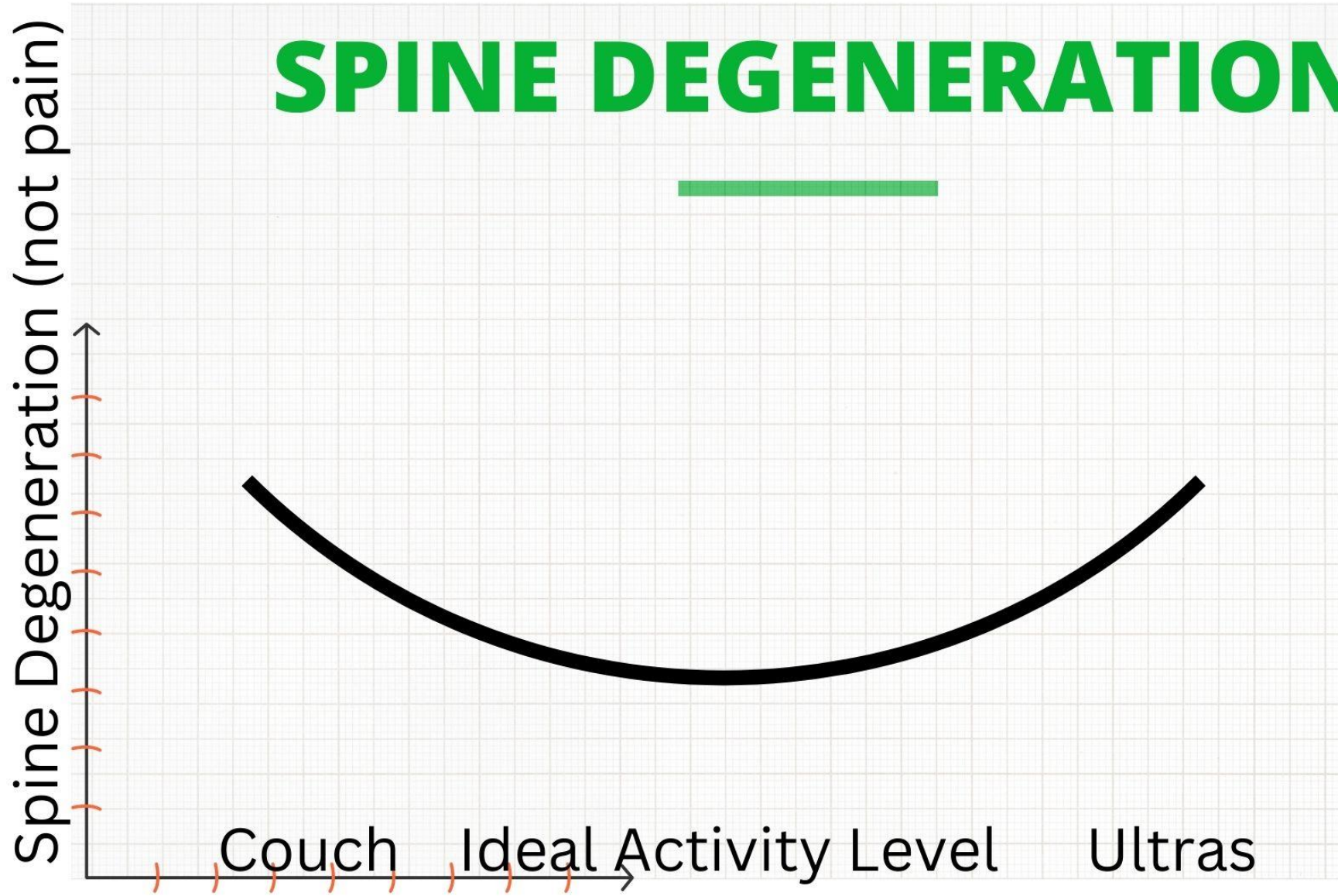
Fit Rats



- Fitter rats had less nerve injury with clinically induced low back pain
- Rats who exercised straight after injury improved in function at 3 weeks
- 5 weeks for nerve injury to recovery in rat study (faster if you mobilise the joint)



SPINE DEGENERATION



EFFECTS OF AGEING



- You don't stop brushing your hair when it goes grey
- Why would you stop exercising when the body goes grey



EFFECTS OF TRAINING



- The body is an amazing self-modifying, self healing machine
- If we cut ourselves, the body fixes it
- If we load it (with weights or walking or stretches or running) it changes and adapts





STATS



- 2-3 x per week to get muscle changes and adaptations
- It takes 6 weeks to get long term physiological changes and non-fluctuating weight loss

EFFECTS OF EXERCISE



- When your arm gets out of a cast everything is a bit stiff
- Everything is a bit sore when we start moving it again
- This is normal adaptation, stick with it

EFFECTS OF ROUTINE

Morning routine

- Humans are creatures of habits and routines
- When we are in a routine of regular fitness and physical training, generally our eating and sleeping is good too

WHAT TREATMENT / EXERCISE IS BEST



- Painful backs become discoordinated
- Have you been told that you have a weak core
- Its probably not
- People with back pain have increased muscle contraction (hyperactivity, co-contraction and an inability to relax

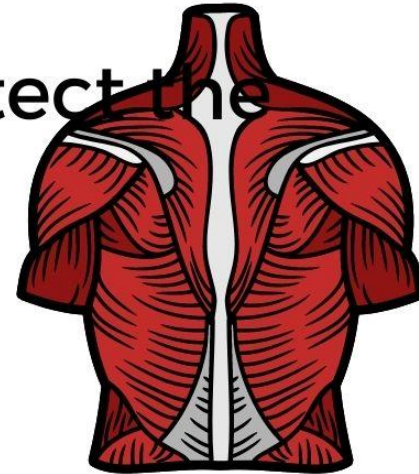
What Treatment do I need?

- If your back is hyper-flexible muscle retraining will be effective
- If your back is stiff, treatment and stretching will be effective
- If your back is dis-coordinated, muscle retraining will be effective



WHAT TREATMENT / EXERCISE IS BEST

- There are 70 muscles that control the low back
- Muscles "switch off" to try to protect the injury area



MANAGE RETURN TO ACTIVITY



- Manage your return to activity like you would with an ankle sprain or achilles injury



Persistent Pain



- When you have low back pain for more than three months, changes occur in our wiring
- Our brain becomes overprotective, overactive, hypersensitive
- It will create pain sensation with previously non-painful stimulus
- Brain imaging supports this



Persistent Pain



- Pain is a protective mechanism but rewiring can mean that pain is created by low stimulus
- Pain onset becomes a long way off tissue damage

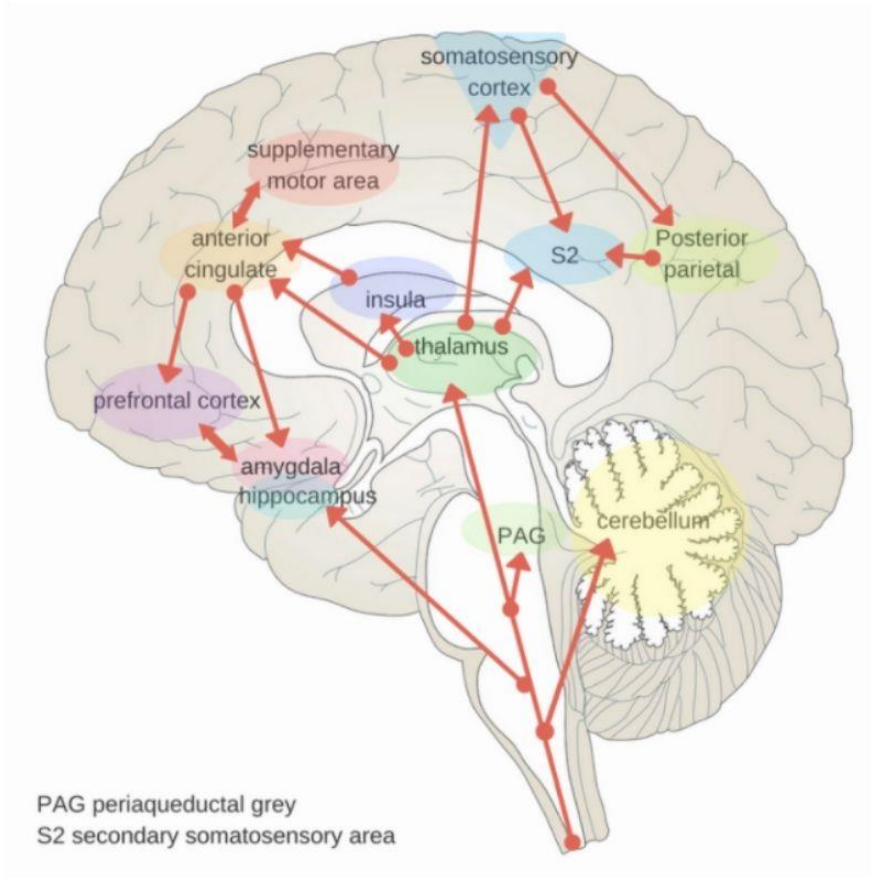




PAIN IS...

- Pain is made up of the physical component, but also a psychological component (how you're feeling) and a social / environmental component

PAIN PROCESSING



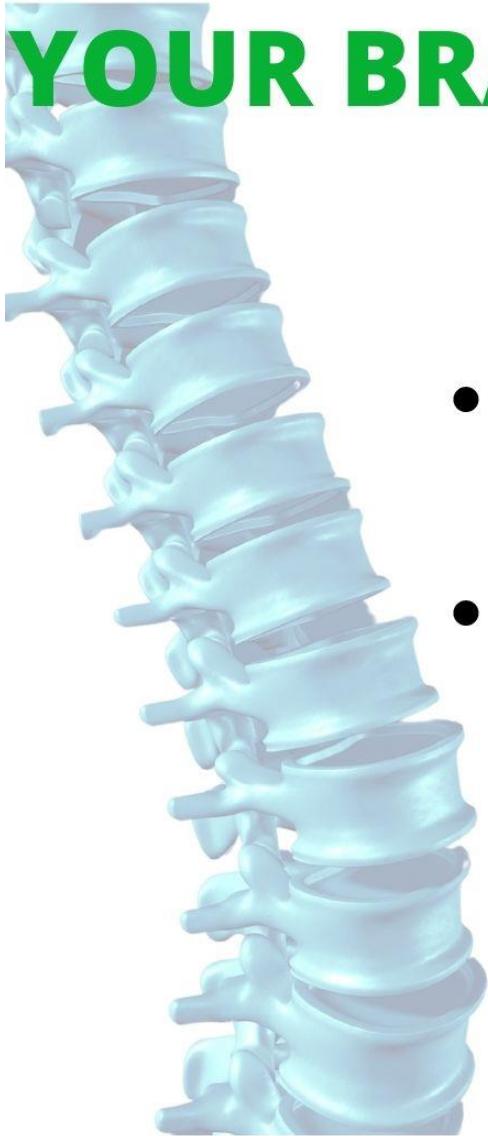


PAIN IS UNIQUE TO YOU

- The pain you feel is completely unique to you and is an experience based on what is going on in your body (sprained ankle), mind (stress from work, grief from a family bereavement) and social / environment (lack of access to information, medical facilities)

YOUR BRAIN DECIDES HOW MUCH PAIN

- Pain is an opinion, it does not always reflect reality
- Your brain decides when you need to be protected and when you don't



IT TAKES INTO ACCOUNT EVERYTHING

- Your brain is always making judgement calls
- You've got a sprained ankle but you can run away from a bear





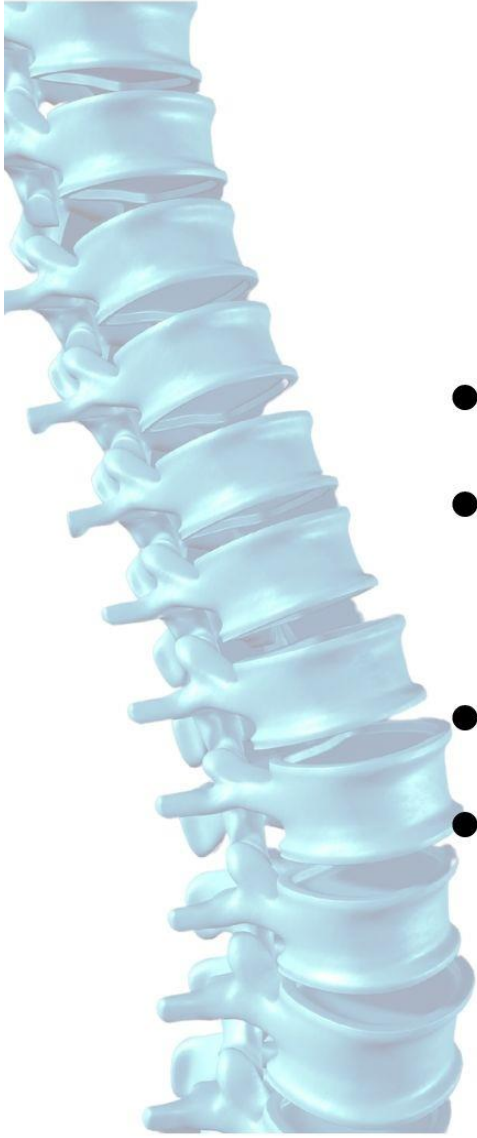
IT IS A PROTECTIVE MECHANISM

- Pain is a good thing
- All pain is stored as a memory - don't put your tongue in a coke can, don't walk on glass, don't stick your finger in the monkey's cage

REWIRING



- This sounds scary, but it's not
- The brain and nerves can be reprogrammed, rewired, and completely reversed



How do I do this?

- Pain is a very subjective experience
- If we tell the brain it's bad, it sends relevant pain messages
- If we tell the brain its ok, its ok
- Athlete with DOMS vs YDU with DOMS



REINTERPRET THE PAIN

- Reinterpreting pain as a harmless sensation (warmth, stiffness, discomfort, tightness) can override our higher control centres to stop our amygdala freaking out
- What? There is a stabbing in my back



YOU'RE THE BOSS - TELL IT WHAT'S HAPPENING

- I can feel my ligaments really stretching today from my stretch
- I can really feel the blood bringing all the healing products to the area
- I need to cool my back down, its feeling quite warm from the movement I've been doing
- The sensations in my back today are strong because...

Takeaways

- Every cell in your body is capable of change until the day you die
- Treatment for stiffness, stability or motor control
- Treat your back like you would an achilles
- Disempower the amagdala

