# Understanding Persistent Low Back Pain

Facts, Myths and Moving Forward

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# Land Acknowledgement

Health services across Manitoba are provided in facilities located on the original lands of First Nations, Inuit, and on the national homeland of the Red River Métis Nation.

Manitoba's health authorities respect that First Nations treaties were made on these territories, acknowledge harms and mistakes, and we dedicate ourselves to collaborate in partnership with First Nations, Inuit, and Métis peoples in the spirit of reconciliation.

# House-keeping

- Please be respectful and remember confidentiality
- No recording
- Please silence your cell phones
- You may download/print off the presentation slides at the following website:

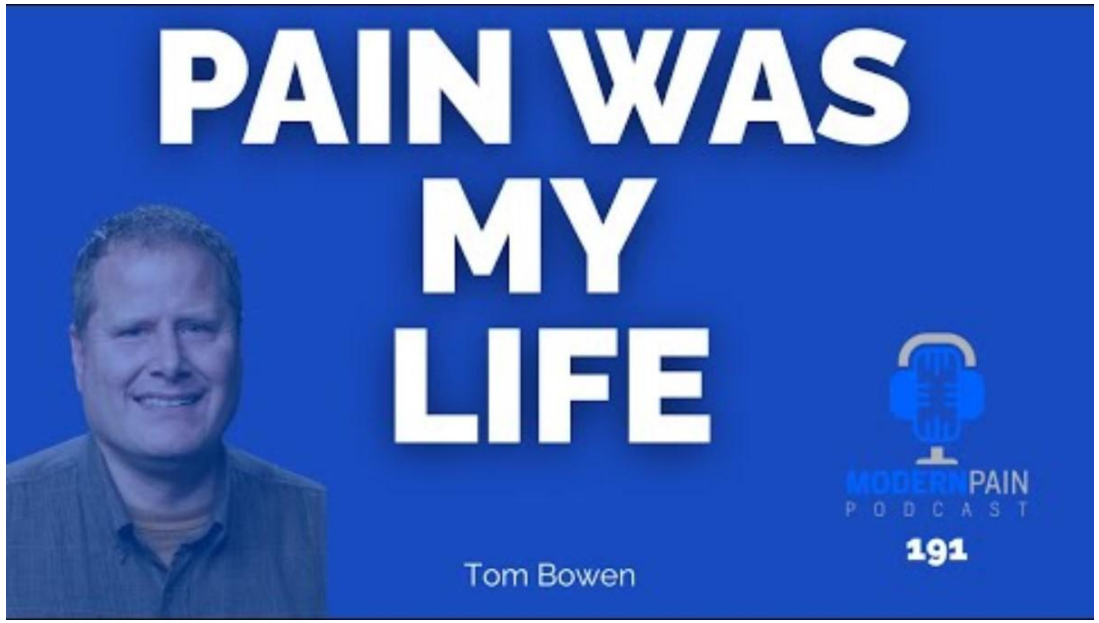
www.panamclinic.org/patient-resources

- This session provides information and recommended strategies for pain self-management that apply to *most* individuals / back pain conditions but may not meet the needs of those seeking more specific or detailed information about their unique concerns or pain condition.

# Outline and Objectives

- What is (and isn't) back pain
- Myths and misconceptions about back pain
- Shifting from "pain management" to recovery
- Where to start
- Questions

# Sound Familiar?

# What is back pain?

What's one thing you've been told about back pain that you're not sure is true?

- Prevalence/incidence:
  - Extremely common
  - 80% will experience a bout of low back pain
  - Leading cause of disability in North America
  - Rarely "serious" (requiring urgent medical intervention)

## The True Cost of Low Back Pain

**Global:** over $200 billion USD annually

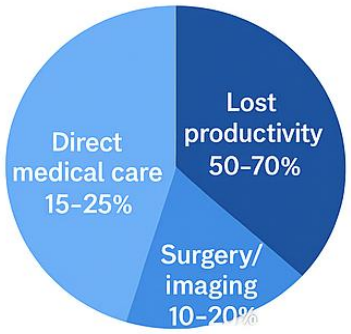
**Canada:** $2.6 billion CAD annual healthcare costs

$6–12 billion CAD annual total cost

**United States:** $100–130 billion USD annual healthcara costs

$300 billion USD annual total burden

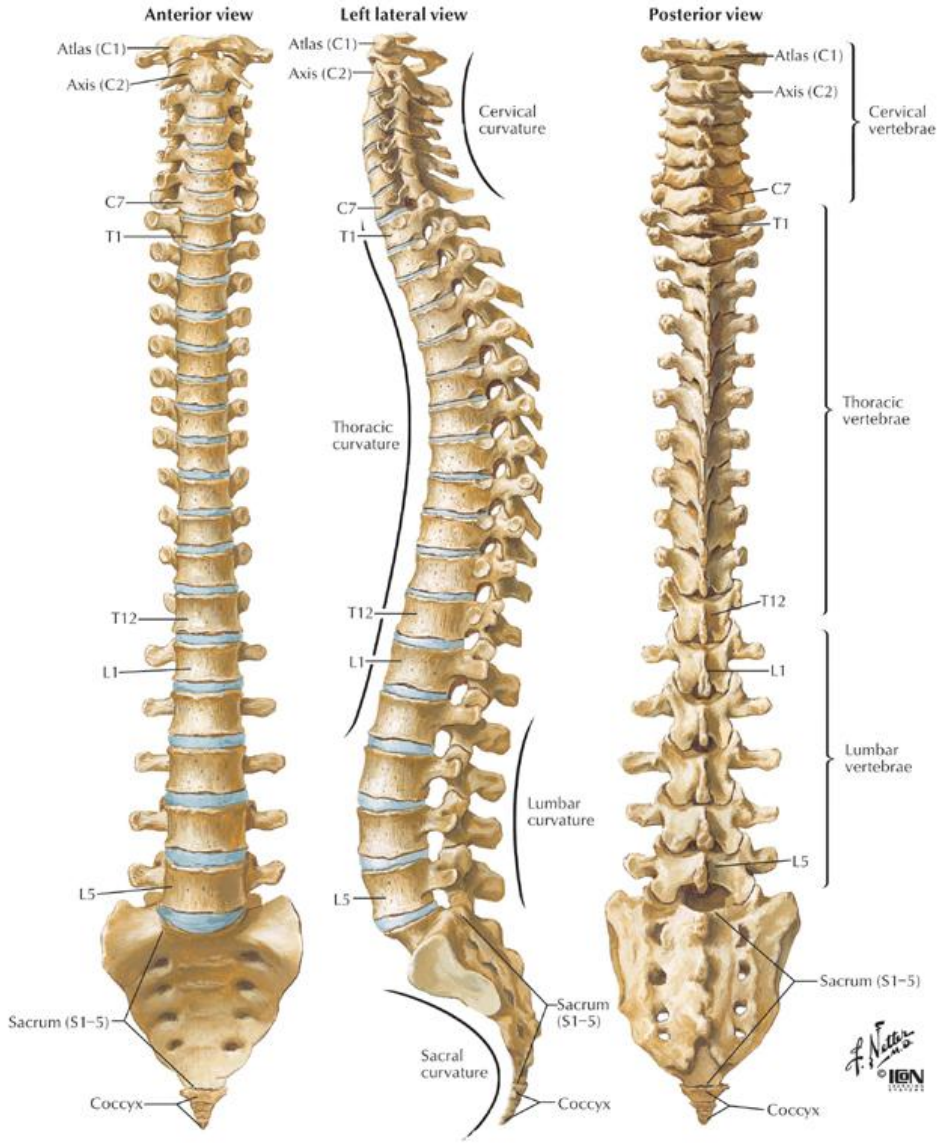
Cost Breakdown




#1 cause of disability among working-age adul

# What causes back pain?

- Types of back pain
  - Specific
    - Tumor, infection, fracture, neurological compromise
    - Often presents acutely
  - Non – specific
    - Basically, everything else
    - Often presents chronically
  - How does this change management?



# Can we predict who will have back pain?

**TOP  MODIFIABLE RISK FACTORS**

- Obesity/High BMI
- Insomnia
- Smoking
- Psychological stress/distress
- Sedentary lifestyle
- Fear avoidance
- Low pain self-efficacy

# Can we predict who will have back pain?

## NON-MODIFIABLE RISK FACTORS

- Age
  - Most prominent in middle age
- Sex
  - Slightly more common in females
- Genetics
- Family and early life influences
  - Childhood trauma
- Previous back pain episodes
- High pain intensity following injury
- Socioeconomic status

# What about my MRI?

- Really good at finding specific causes of back pain
  - Tumor, infection, fracture, severe nerve compression
  - 1-5%
- For 95% of people with back pain, scans alone cannot explain their pain.
- Many scan findings are normal age-related changes and are found on people who are asymptomatic
  - Disc and joint degeneration, stenosis (narrowing), disc bulges
- Normal looking tissues on a scan can become very painful/sensitive
- Scans are not always recommended

| | Imaging Finding | Age | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| ASYMPTOMATIC | Disc degeneration | 37% | **52%** | **68%** | **80%** | **88%** | **93%** | **96%** |
| | Disc height loss | 24% | 34% | 45% | **56%** | **67%** | **76%** | **84%** |
| | Disc bulge | 30% | 40% | **50%** | **60%** | **69%** | **77%** | **84%** |
| | Facet degeneration | 4% | 9% | 18% | 32% | **50%** | **69%** | **83%** |
| | Spondylolisthesis | 3% | 5% | 8% | 14% | 23% | 35% | **50%** |

Brinjikji et al, 2015

# Prevalence of Radiographical Lumbar Central Canal Narrowing (Stenosis)

## Wakayama Spine Study, 2012

Included 977 people aged >40

47.5% (464 people) had moderate central canal narrowing (one-third of the canal area)

30.4% (297 people) had severe central canal narrowing (two-thirds of the canal area)

77.9% of the cohort had moderate or severe central canal narrowing

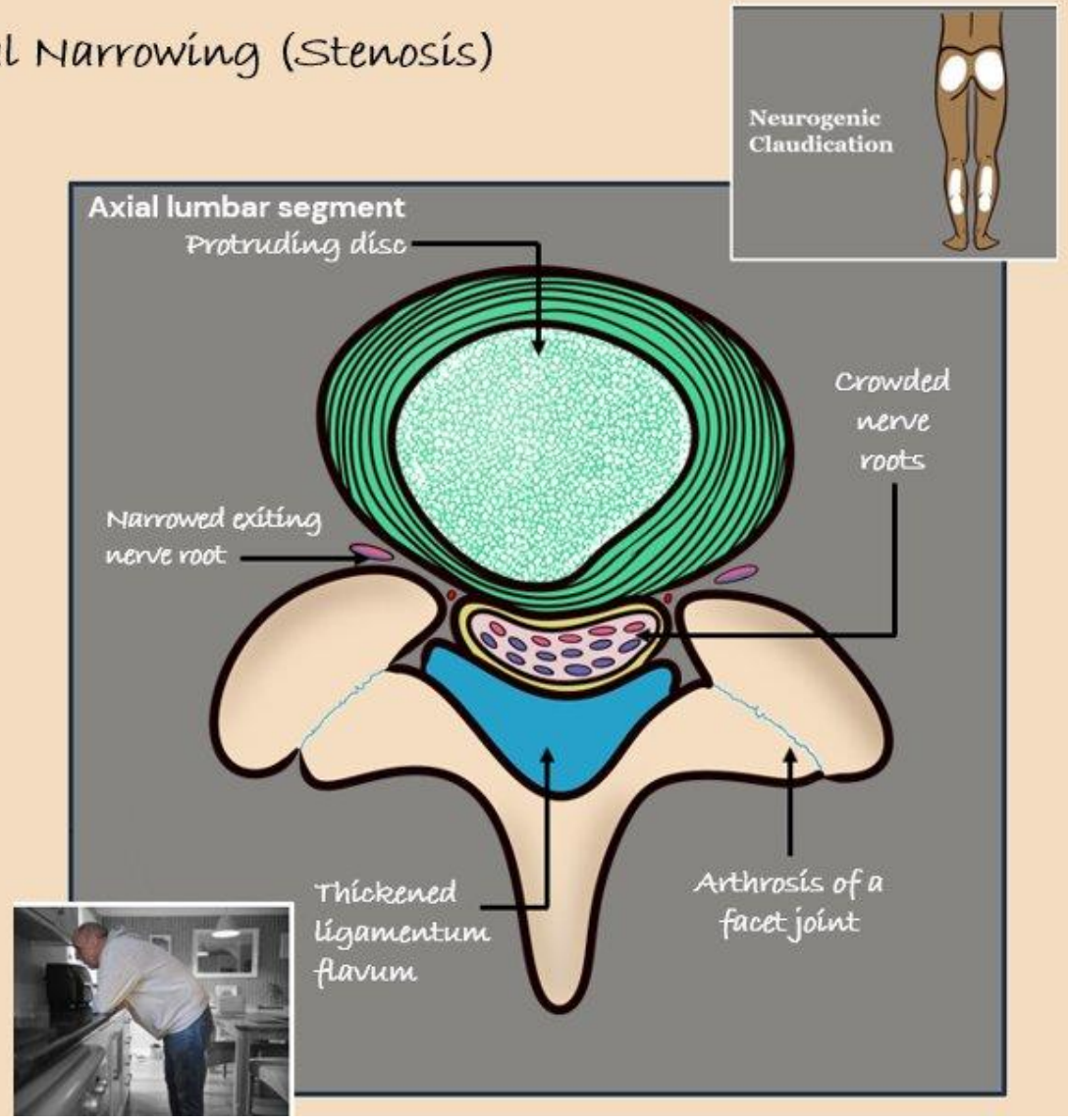
9.9% (46 people) of those with moderate narrowing were symptomatic

17.5% (52 people) of those with severe narrowing were symptomatic

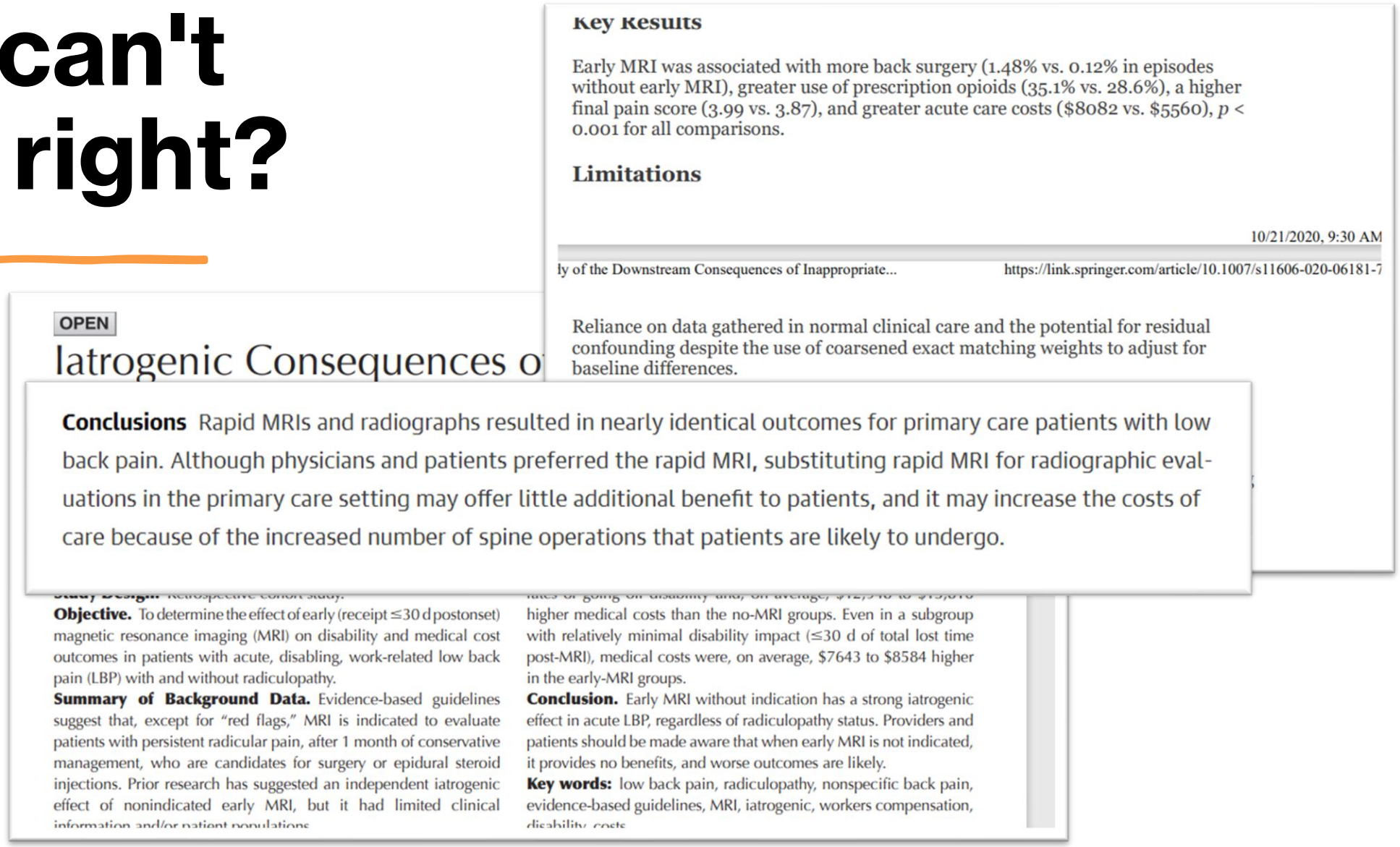
Overall, only 10% (98 people) of the cohort were symptomatic

**MRI-confirmed narrowing increases with age and has a weak association with symptoms. In the Wakayama Spine Study,** 93.1% of those in their 80s had moderate or severe radiographic stenosis

**Despite this association, the degree of narrowing does not correlate with the level of disability**



# But it can't hurt... right?



Key Results

Early MRI was associated with more back surgery (1.48% vs. 0.12% in episodes without early MRI), greater use of prescription opioids (35.1% vs. 28.6%), a higher final pain score (3.99 vs. 3.87), and greater acute care costs ($8082 vs. $5560), $p <$ 0.001 for all comparisons.

Limitations

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ly of the Downstream Consequences of Inappropriate... https://link.springer.com/article/10.1007/s11606-020-06181-7

Reliance on data gathered in normal clinical care and the potential for residual confounding despite the use of coarsened exact matching weights to adjust for baseline differences.

OPEN

Iatrogenic Consequences o

**Conclusions** Rapid MRIs and radiographs resulted in nearly identical outcomes for primary care patients with low back pain. Although physicians and patients preferred the rapid MRI, substituting rapid MRI for radiographic evaluations in the primary care setting may offer little additional benefit to patients, and it may increase the costs of care because of the increased number of spine operations that patients are likely to undergo.

**Objective.** To determine the effect of early (receipt ≤30 d postonset) magnetic resonance imaging (MRI) on disability and medical cost outcomes in patients with acute, disabling, work-related low back pain (LBP) with and without radiculopathy.

**Summary of Background Data.** Evidence-based guidelines suggest that, except for "red flags," MRI is indicated to evaluate patients with persistent radicular pain, after 1 month of conservative management, who are candidates for surgery or epidural steroid injections. Prior research has suggested an independent iatrogenic effect of nonindicated early MRI, but it had limited clinical

higher medical costs than the no-MRI groups. Even in a subgroup with relatively minimal disability impact (≤30 d of total lost time post-MRI), medical costs were, on average, $7643 to $8584 higher in the early-MRI groups.

**Conclusion.** Early MRI without indication has a strong iatrogenic effect in acute LBP, regardless of radiculopathy status. Providers and patients should be made aware that when early MRI is not indicated, it provides no benefits, and worse outcomes are likely.

**Key words:** low back pain, radiculopathy, nonspecific back pain, evidence-based guidelines, MRI, iatrogenic, workers compensation,

# So how do we make sense of this?

**NON-MODIFIABLE RISK FACTORS**

- Age
  - Most prominent in middle age
- Sex
  - Slightly more common in females
- Genetics
- Family and early life influences
  - Childhood trauma
- Previous back pain episodes
- High pain intensity following injury
- Socioeconomic status

- **MRI FINDINGS**

# Back Pain:

# Myths & Misconceptions

- **Why** does "myth-busting" matter?
- We are always learning about back pain and how best to help people living with it.
- Today's myths were **yesterday's best evidence**.
- Letting go of unhelpful ideas can free up space to focus on things that **actually DO matter**!
- Disclaimer: there can be exceptions to any rule. If this information does not match your understanding of your back pain, speak to your pain care provider about it!

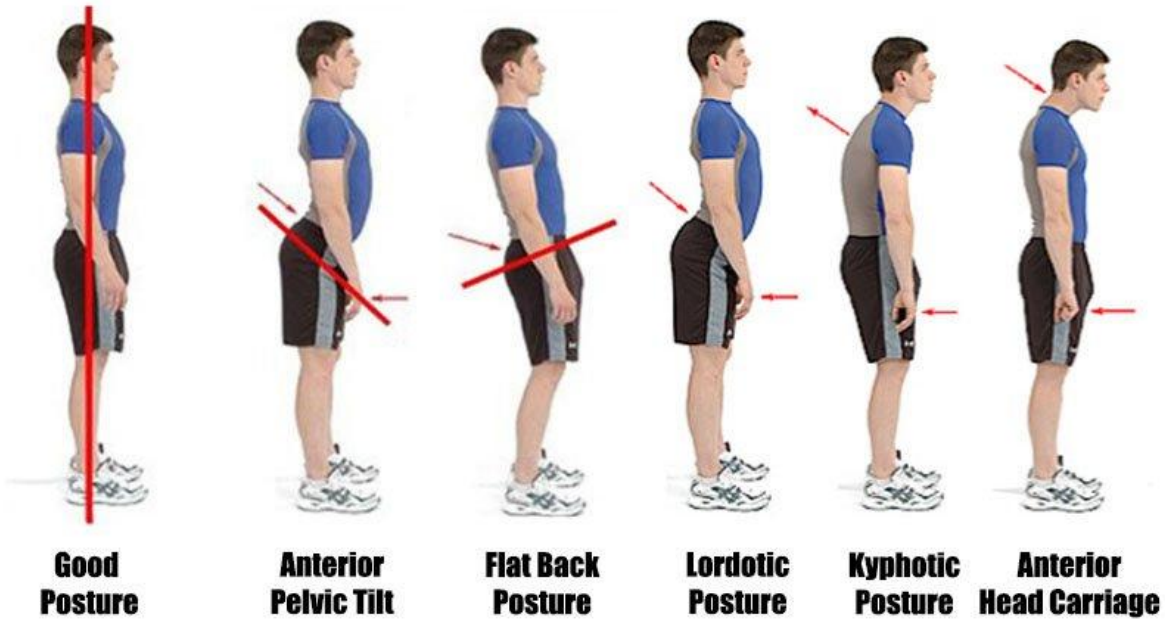
# The spine is fragile.

# The spine is resilient and adaptable.

- Spinal structures, like discs and vertebrae, don't regularly "go out" - and don’t need to be put back in place.
- Like most tissues in the body, spinal structures adapt to stresses over time.
- Changes like disc bulges and other findings on medical scans are common and not always painful.
- Key Takeaway: **Most activity and exercise do not worsen degenerative changes but CAN help reduce symptoms.**

# My back pain is caused by "poor" posture.

I need to fix my posture to fix my pain.



# There is no "bad" posture, but changing posture can help!

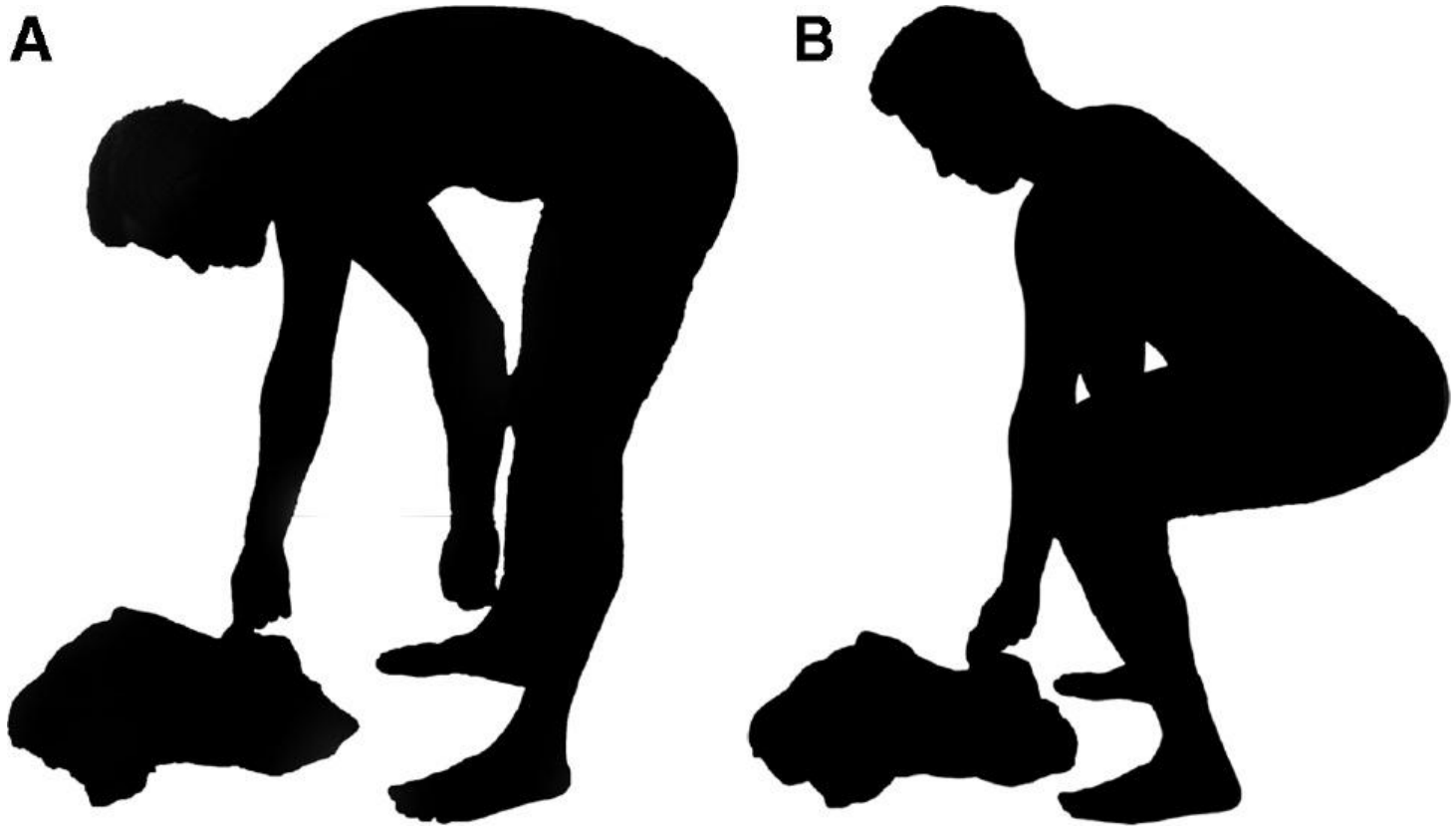
- Most maligned postures are simply *relaxed* postures
- *Sustained* relaxed postures can become uncomfortable
- Changing posture can certainly help alleviate pain
- Key Takeaway: **We should be able to assume many different postures for different activities**

# I need to protect my back!

I need to be careful of how I lift.

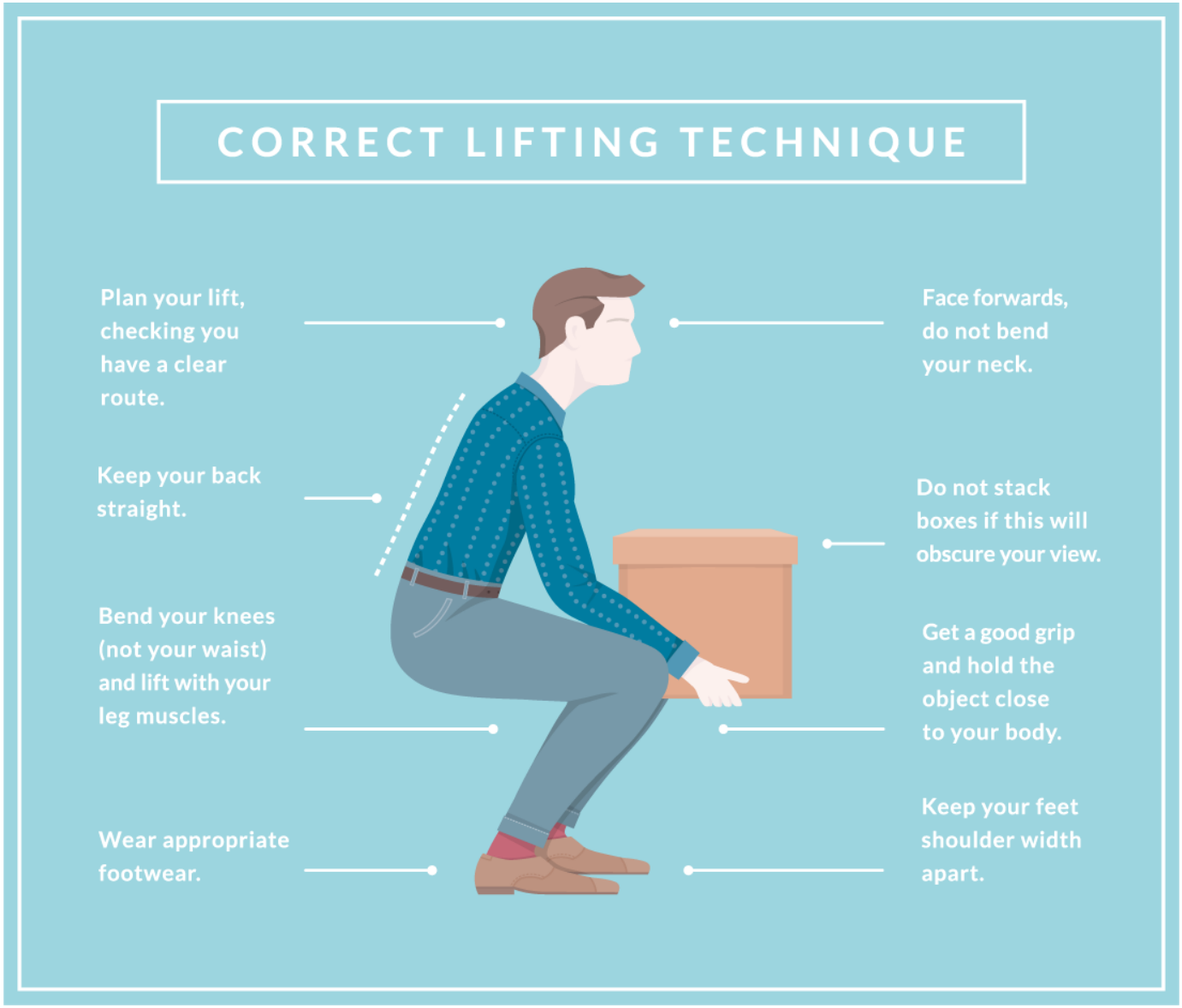
# Do I need to protect my back?

- How would you rate the level of risk for this person's back? (A)
- How about this person? (B)



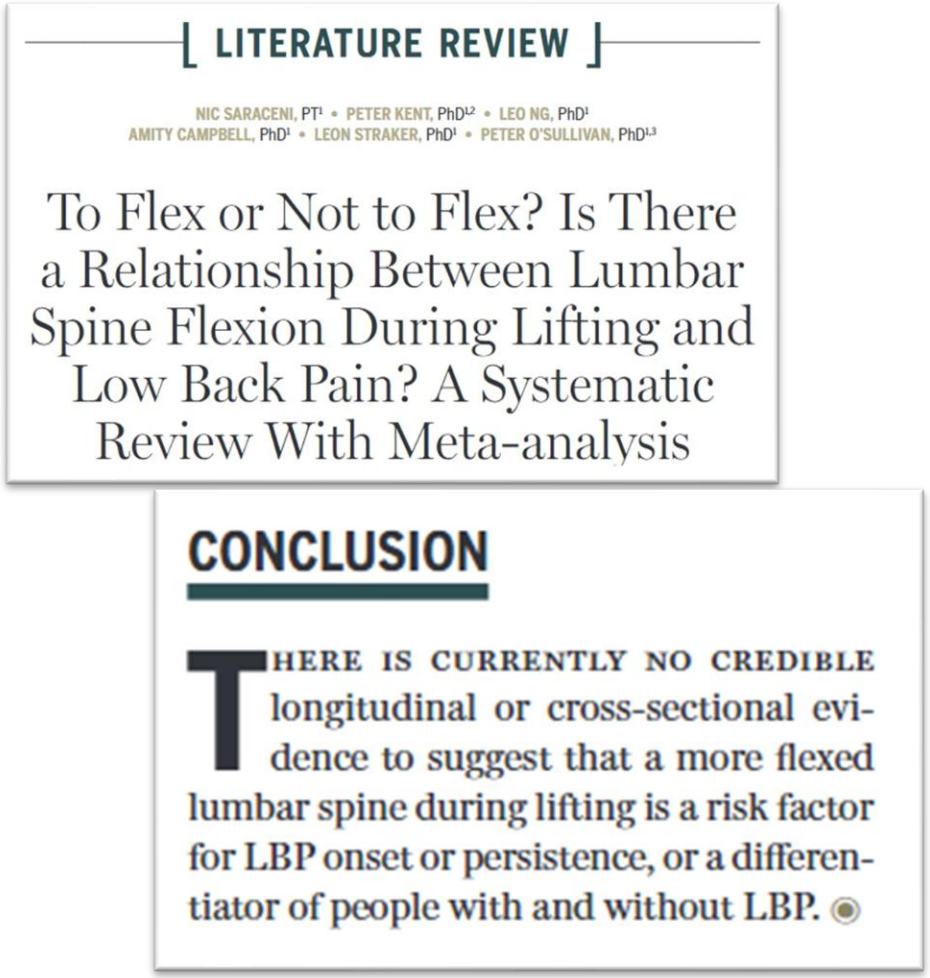
# "Safe" lifting technique: where does it come from?

- Cadaver studies in the 1960s
- Prominent gurus in the 2000-2010s, e.g. Stuart McGill
- Most occupational health and safety training today!



# Lifting with a rounded back does not cause injury!

- It turns out: the evidence simply does not support that bending is a risk factor!
- *In vivo* studies fail to show a risk difference between straight vs. round back.
- Biomechanical studies fail to show a difference in spinal loads.
- Finally, there is no relationship between lifting technique and injury risk in occupational studies.



LITERATURE REVIEW

NIC SARACENI, PT[1] • PETER KENT, PhD[1,2] • LEO NG, PhD[1]
AMITY CAMPBELL, PhD[1] • LEON STRAKER, PhD[1] • PETER O'SULLIVAN, PhD[1,3]

To Flex or Not to Flex? Is There a Relationship Between Lumbar Spine Flexion During Lifting and Low Back Pain? A Systematic Review With Meta-analysis

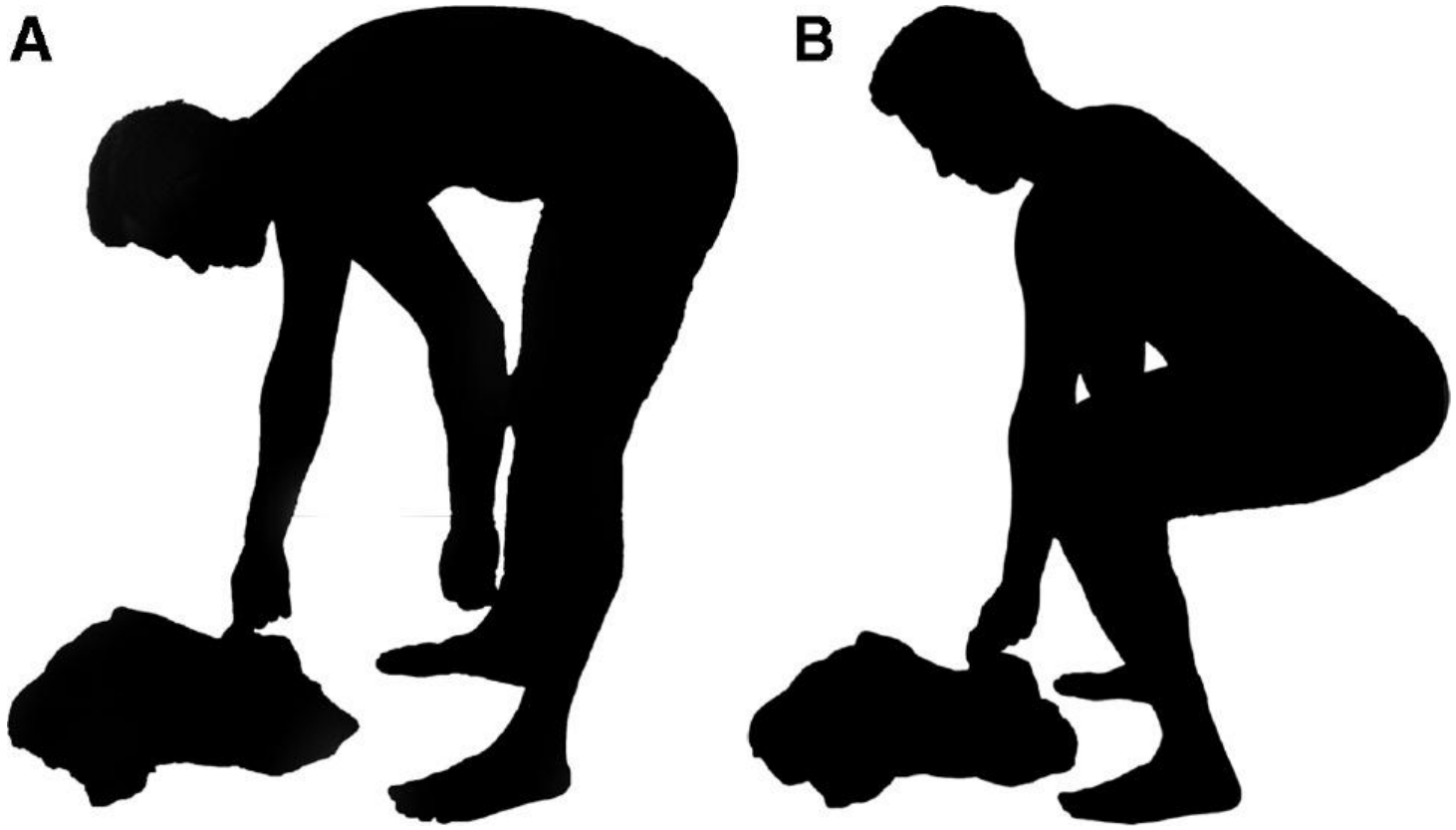
CONCLUSION

THERE IS CURRENTLY NO CREDIBLE longitudinal or cross-sectional evidence to suggest that a more flexed lumbar spine during lifting is a risk factor for LBP onset or persistence, or a differentiator of people with and without LBP.

Saraceni et al. (2020)

# Both lifting techniques can be useful (and safe)!

- Sometimes, it's more efficient to lift with your back.
- Other times, we want to use our legs.
- Key Takeaway: **Progressive exercise programming can help us to build up strength and tissue tolerance in all spinal postures.**

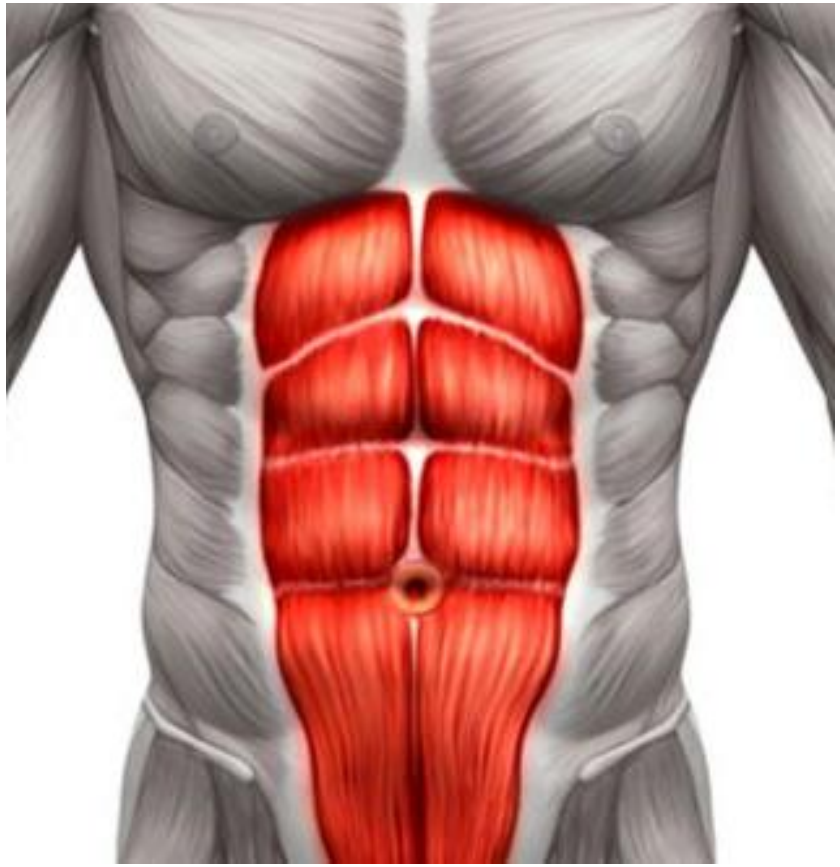


# I need to do "core" exercises!

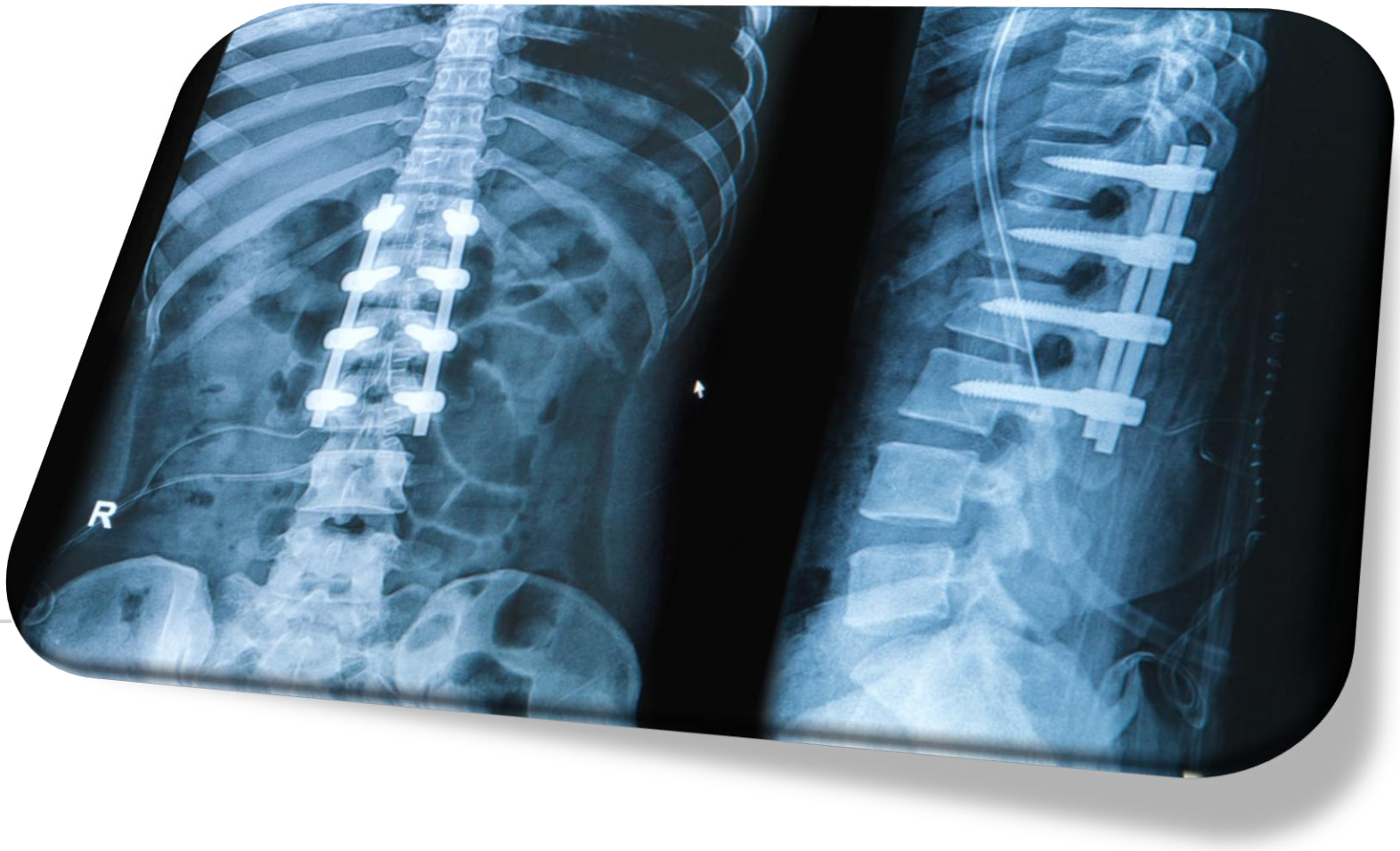
(And I feel guilty when I don't!)

# "Core" exercises are just one option!

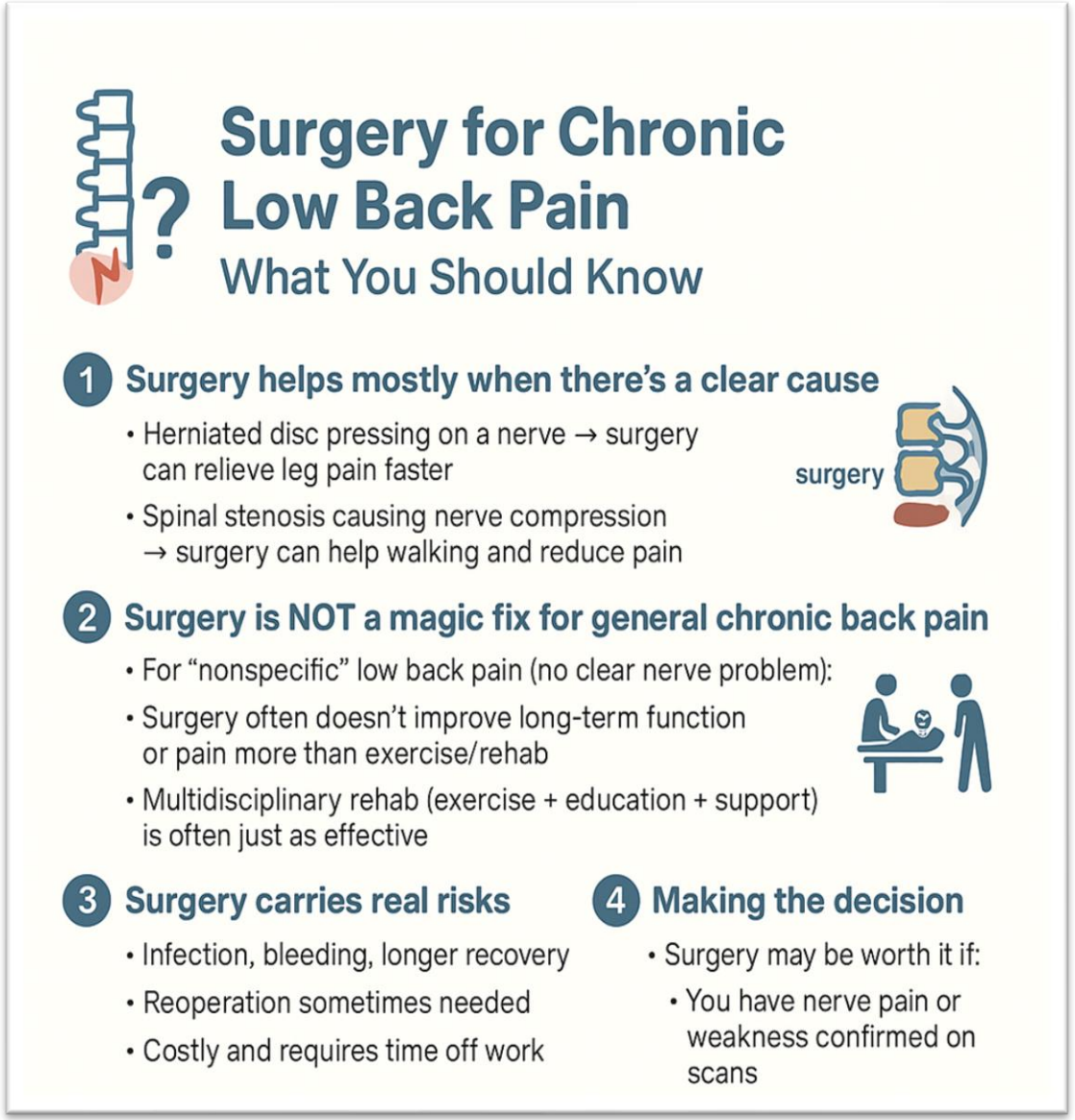
- Trunk stabilization exercises (and many other exercises) can help with pain, even if strength does not change.
- People with back pain tend to have *overactive* core muscles, which is part of a protective response
- Having strong trunk muscles is great but *no more important than any other part of the body.*
- Key Takeaway: **Strengthening the full body through general resistance training can be just as effective for managing back pain, while having greater potential to improve other aspects of physical function and health.**



# I need spinal surgery to fix my back pain.



# Does surgery help back pain?



# Great... Now what??

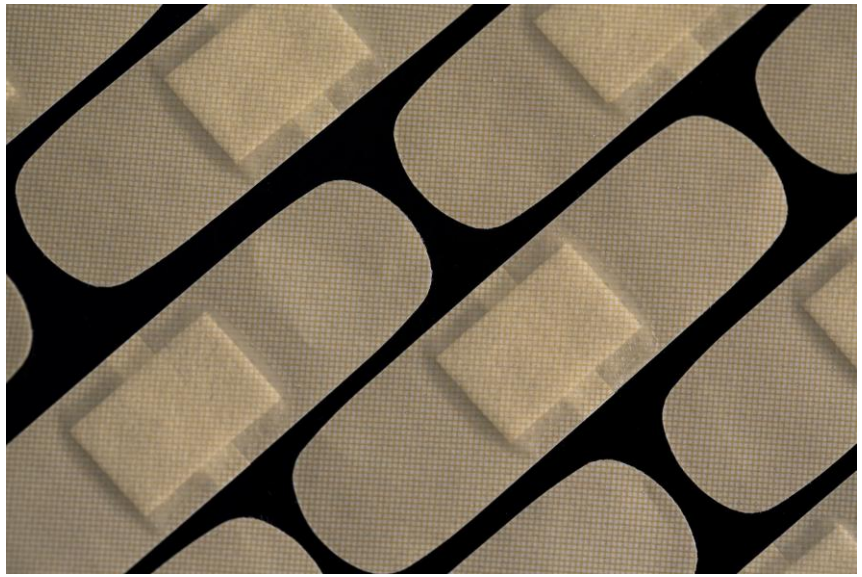
HOW DO WE START MOVING TOWARDS THE PATH TO RECOVERY?

WHAT DOES HELP?

WHAT DOES RECOVERY ACTUALLY LOOK LIKE?

# What does the evidence say?

# Short Term Treatments



- **Many back pain treatments can provide short-term relief. These include:**
  - Medications
  - Injections
  - Massage, joint manipulation, and other hands-on therapies
  - Acupuncture/dry needling
  - Heat or ice
  - Rest or supportive bracing
- These treatments may alleviate pain temporarily, but it is not because they are making "structural" changes

*"The nervous system is easily tricked but more difficult to convince"*

# Long Term Treatments

**First-Line, Non-Pharmacologic Treatments: (Strong Evidence)**

- **Exercise Therapy** (all types effective; choose patient-preferred)
  - Core/strengthening, aerobic, yoga, Pilates, tai chi, motor control exercises.
  - Best long-term results when tailored and ongoing.
- **Patient Education & Reassurance**
  - Focus on pain neuroscience, self-management, and maintaining activity.
  - Helps to reduce uncertainty and ultimately aids in health behavior change.
- **Cognitive-Behavioral Therapy (CBT) & Other Psychological Interventions**
  - CBT, Acceptance and Commitment Therapy (ACT), mindfulness-based therapy.
  - Especially effective when psychological distress is present.
- **Multidisciplinary Rehabilitation**
  - Combining physical + psychological + occupational support.
  - Recommended for people with persistent disability or work impact.

# Lifestyle Improvements

- **Weight management** – obesity is a strong risk factor (MR studies 2024–2025).
- **Improving sleep quality** – insomnia is strongly linked to CLBP outcomes.
- **Smoking/alcohol reduction** – both strongly associated with higher risk and worse prognosis.
- **Physical activity promotion** – maintaining daily movement is protective.
- **Stress management**

# We have options!

# Pain Management

**"Nothing works for everybody, but something works for everybody"**

- Often confused as THE treatment/fix
- Massage, adjustments, TENS, ultrasound, mobilizations, acupuncture, inversion table, block therapy, stretching, heat, ice, medication, injections, meditation, breathing, rest, taping, bracing, foam rolling
- Not specific to your CONDITION
- More specific to the individual

# Specific Approach

## Targeted interventions

**You don't need *fixing* before you start *doing*... because the *doing* is the *fixing*!**

**-Greg Lehman**

- Graded activity
  - What is missing in your life?
  - Do you want to get back to it?
- Graded exposure
  - What movement/activity/position hurts your back?
  - Can we specifically get better at that?
- The treatment approach is specific to YOU
- It is not specific to your CONDITION

# Non-Specific Approach

## Lifestyle factors

**Can I just get healthier?**

- Think about the modifiable risk factors
  - Improved sleep
  - Weight loss
  - Stress reduction
  - Smoking cessation
  - More physical activity, less sedentary time

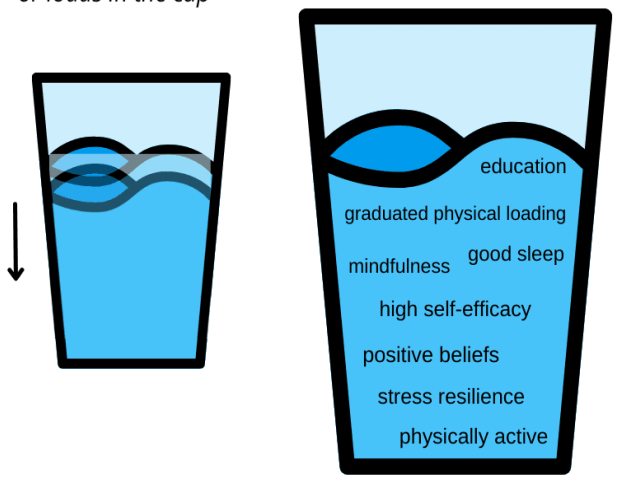
# Integrated Approach

How full is your cup?

## What can we do?

*1.Decrease some of the stressors or loads in the cup*

*2.Build a BIGGER cup*



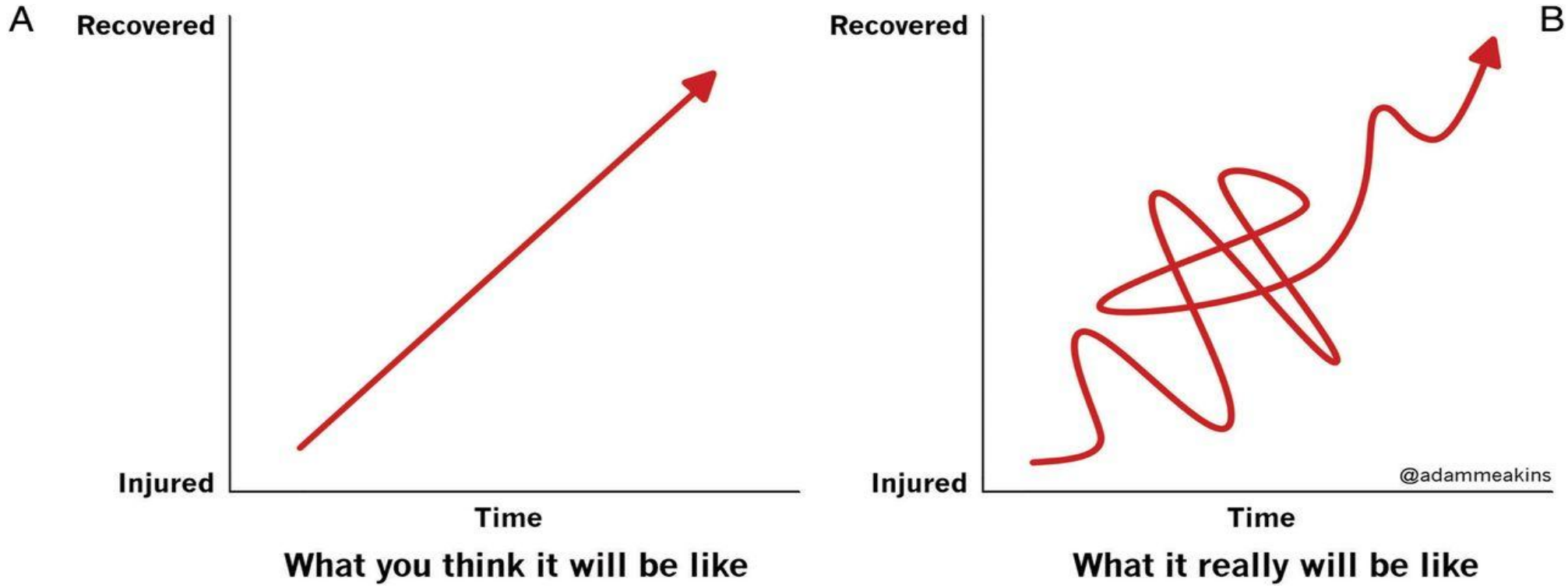


Potential **CONTRIBUTORS**

When your cup **overflows** you might have **pain**

function 101
CHIRO + PHYSIO

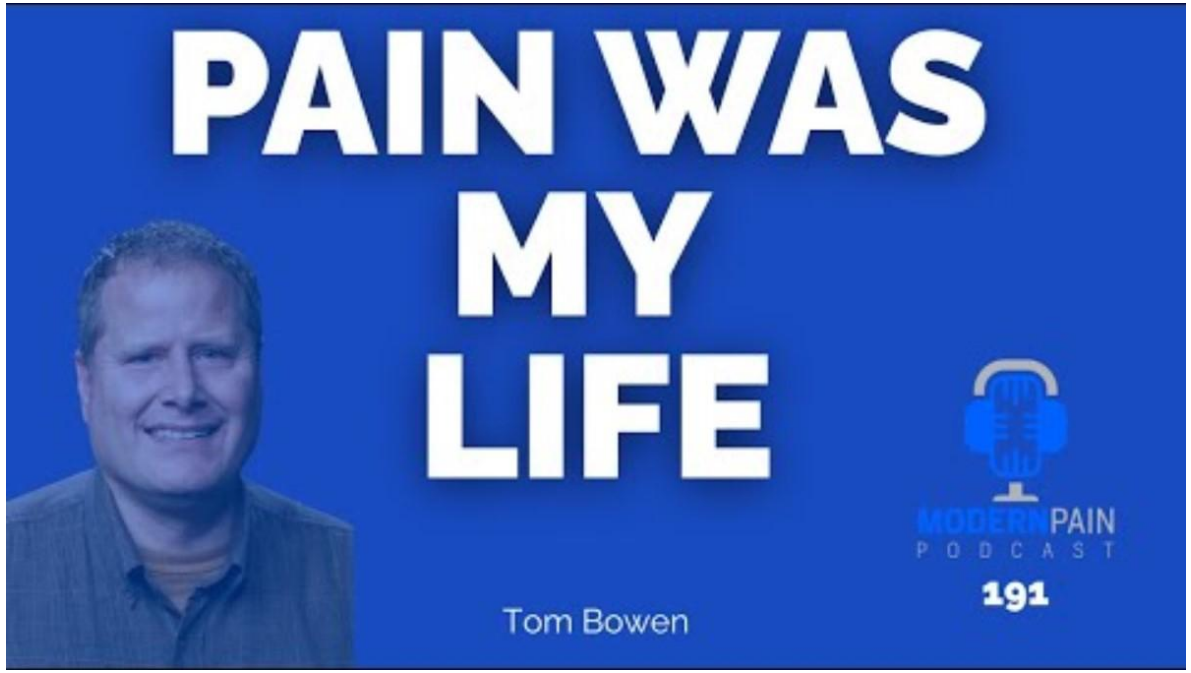
# What does recovery look like?



# What does recovery look like?

- Improved function with the same amount of pain
- Less intense flare ups
- Less frequent flare ups
- Shorter duration of flare ups
- Less reliance on pain medication
- Better sense of control over pain/flare ups
- Less fear of flare ups
- Improved quality of life
- Less pain

# What do patients say?




# Questions

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