

# Low Back Pain

## Assessment & Evidence Based Management



For A Healthy Spine

## As a health issue LBP is a priority...!

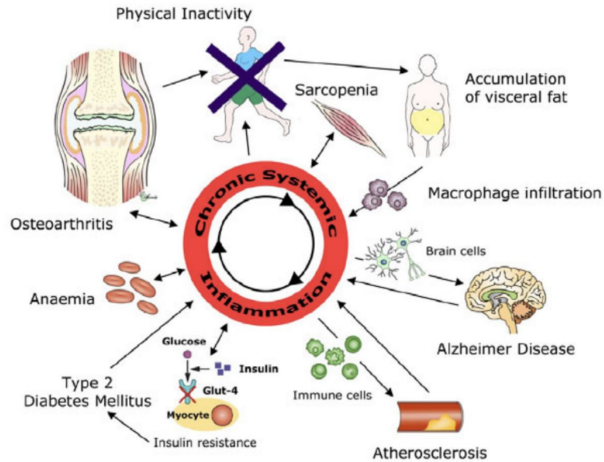


- **85% of population** will experience severe LBP
- **25%** of all workcover claims
- 5th reason for Dr visit
- > HBP & Diabetes
- > **70% people over 65** nominate **LBP chronic pain**
- Costs the healthcare system **\$20 Billion** annually

# LBP & Co-morbidity is common

Lack of physical activity due to LBP

- Increase weight
- Cardiovascular disease
- Osteoarthritis
- Mental Health
- Asthma
- Diabetes
- & other health issues...!



# Lower back & its movement...?

## Normal anatomy and movement

- 5 vertebrates
- Larger Vertebral bodies
- Disc anatomy
- **IVF at level of IVDS** (!...nerve root compression more likely)

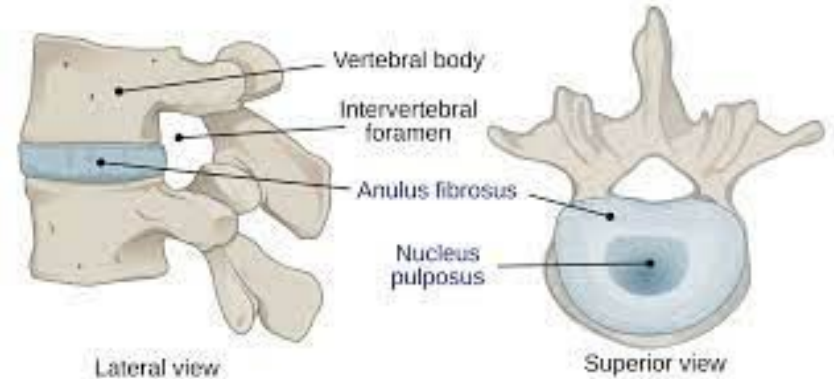
## Movement:

- Flexion/Extension: most segments
- Rotation: all segments
- Lateral flexion: relatively small at each segment in Lx spine
- **L1 & L5 meet stiffer/stable segments**



## How does the disc behaves...!

- Lumbar disc
- Strong cushion
- Absorbs shock, distributes load
- Soft centre/firm outer layer
- Like a water-balloon
- Little direct blood supply
- Heals slowly
- Can be 'pain free' even while it is not yet fully healed....!
- **Nourished via dynamic loading/stretching** (physical activity)



## A case study

55 yo Male (works as accountant)

- LBP for 4/52
- Pain: 7-9/10, occ referral to R) thigh
- **No h/o trauma, incident, injury**
- Agg: sitting, bending, leaning
- Ease: painkillers, rest

H/o: Lx injury 10yrs ago, 'lifting a pot'

- Pain running down leg
- Dr/Surgeon > MRI > L5/S1 protrusion
- Advised: **rest & 'walk amap'**
- Took 9-12 months to recover

Fitness: Football, Gym: **stopped after LBP episode**, Walks daily



# Physical Assessment

- **Flexion: stiff/pain Increase: disc!**
  - LF: stiff/pain radiating to sides: facet!
  - Single leg stand + Lx extension..pars/facet!
  - Ext: pain..listhesis/stenosis!
- Muscle: **ES, Multi (spasm)**
- Flexibility: **Hams & hip flexors tight**
- SLR: +ve at 45 deg Bil
- ASLR: painful at **5deg, 25deg with stabilisation**
- **Very stiff Tx spine**
- **Sitting posture at work**

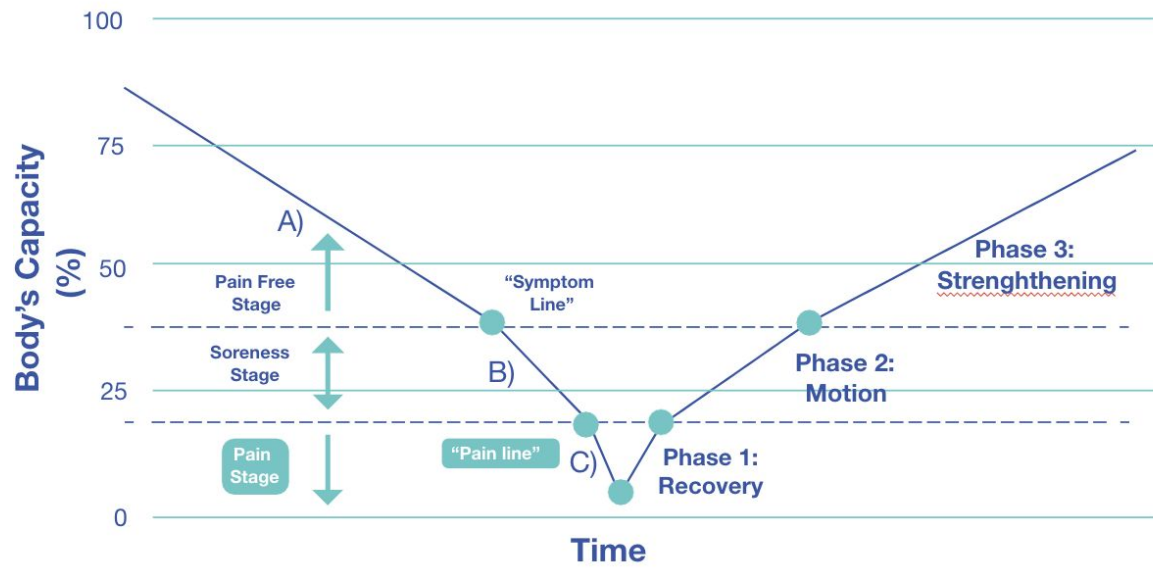
# Goals of conservative treatment

- **Patient Education: understand the problem** (Lepri et al. 2023, Mckenzie 2021)
- **Improve blood circulation/DN** (Bazzaz-Yamchi et al. 2021)
- **Stretch tight muscles** (Batool et al. 2022, Halbertsma et al. 2001, Tamartash et al. 2023)
- **Reduce spinal stiffness** (Halbertsma et al. 2001, Mckenzie 2020, Mckenzie 2021)
- **Reduce neural symptoms** (Neto et al. 2016)
- **Strengthen Core muscles** (Sengul et al. 2021, Stuber et al. 2014, Yu et al. 2023)
- **Full body strength** (Prat-Luri et al. 2023)
- **Posture correction, Workstation** (Kripa & Kaur 2021, Mckenzie 2021)



# Three Phases of Spine Rehab/Strengthening

1. Prepare the body + relieve the symptoms
2. Targeted strengthening + symptoms free
3. Active strengthening + lifestyle changes



## Phase 1: Prepare the body

- **Education: posture correction in sitting/ADL** (Ibrahim et al. 2023, Lepri et al. 2023, Mckenzie 2021)
- **Dry needling to improve blood circulation** (Bazzaz-Yamchi et al. 2021)
- **Mobilisation loosen up Tx/Lx** (Halbertsma et al. 2001, Mckenzie 2020, Mckenzie 2021)
- **Gentle Mckenzie HEP** (Mckenzie 2020, Mckenzie 2021)
- **Brace & taping**



## Phase 2: Targeted Strengthening/Stretching

- **Stretch tight muscles (Hams/hip flexors)** (Batool et al. 2022, Halbertsma et al. 2001, Tamartash et al. 2023)
- **Self SLR/Neural mobilisation** (Neto et al. 2016)
- **Strengthen Core muscles** (Sengul et al. 2021, Stuber et al. 2014, Yu et al. 2023)
- **Functional training (squat, lunges, etc)** (Nwodo et al. 2022, Prat-Luri et al. 2023)



## Phase 3: Active Strength + Lifestyle

- Full body strength (Prat-Luri et al. 2023)
- Posture correction, Workstation (Kripa & Kaur 2021, Mckenzie 2021)
- Motor control ex, Clinical Pilates, Yoga, Swimming (Ibrahim et al. 2023)
- Stretch regime before/after Gym (Nwodo et al. 2022)
- Active Lifestyle (break-up sitting)



# Summary

- Patient Understanding is vital
- 'Just walking' is not enough
- Core strength + functional strengthening is important
- Stay active in all phases of recovery, especially in early phases..!
- Strength & flexibility of your spine & whole body



# References:

Tamartash H., Bahrpeyma F. & Dizaji M.M. (2023). The Effect of Remote Myofascial Release on Chronic Nonspecific Low Back Pain With Hamstrings Tightness. *Journal of sport rehabilitation*, 1-8. <https://doi.org/10.1123/jsr.2022-0141>

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Lumbar Spine. Part A: The Mckenzie Institute: Centre for Postgraduate Study in Mechanical Diagnosis and Therapy (2020)

Cervical and Thoracic Spine. Part B: The Mckenzie Institute: Centre for Postgraduate Study in Mechanical Diagnosis and Therapy (2021)

Polestar Pilates 2014, Polestar Pilates: Professional Education, Comprehensive Levels 1-3, Comprehensive Levels 4-6, Teaching to heal through movement.

Low Back Pain Prevalence and Related Workplace Psychosocial Risk Factors: A Study Using Data From the 2010 National Health Interview Survey

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Salik Sengul Y., Yilmaz A., Kirmizi M., Kahraman T. & Kalemci O. (2021). Effects of stabilization exercises on disability, pain and core stability in patients with non-specific low back pain: A randomized controlled trial. *Work (Reading, Mass.)*, no pagination. <https://doi.org/10.3233/WOR-213557>

Yu Z., Yin Y., Wang J., Zhang X., Cai H. & Peng F. (2023). Efficacy of Pilates on Pain, Functional Disorders and Quality of Life in Patients with Chronic Low Back Pain: A Systematic Review and Meta-Analysis. *International Journal of Environmental Research and Public Health*, 20(4), no pagination. <https://doi.org/10.3390/ijerph20042850>

# Thank You

What information do you need...?

How can we help Further..?

## Useful Links:

Therapia Physiotherapy & Pilates:

<https://www.therapia.com.au/>

Lower back pain-related blogs:

<https://www.therapia.com.au/conditions-we-treat/lower-back-pain/>

Therapia Blogs:

<https://www.therapia.com.au/blogs/>