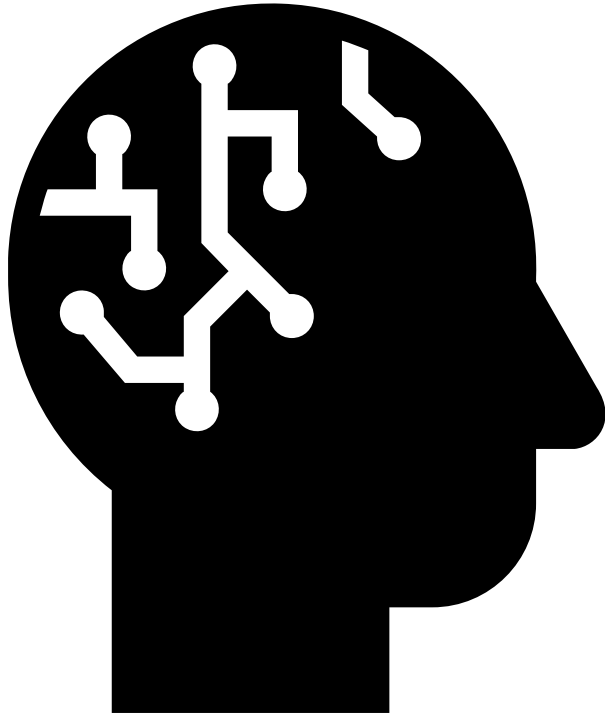


# Shifting The Focus Towards Prevention

Changing health needs for common musculoskeletal conditions presenting to clinic.

*Rebecca von Pfyffer*  
*Rebecca.keen@uqconnect.edu.au*  
*Masters Musculoskeletal Physiotherapy Candidate*

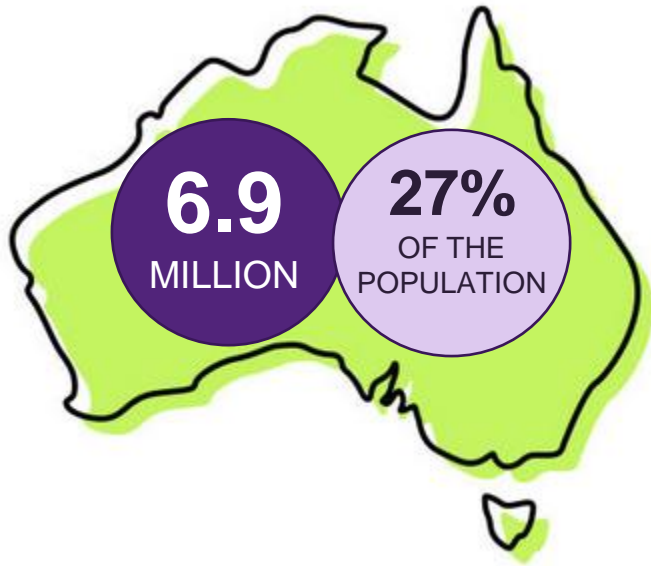
# Do we need to talk about prevention?



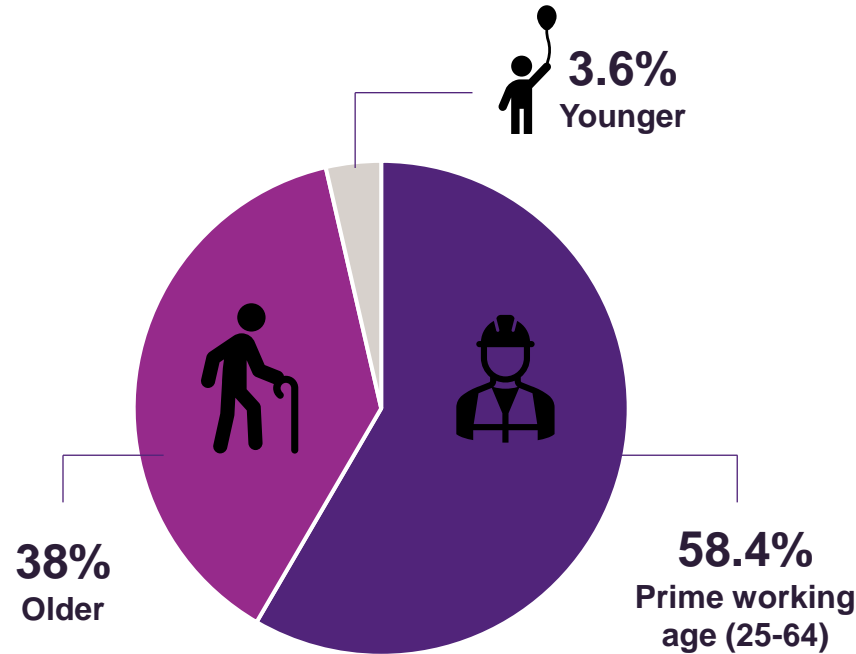
**Encourages reflection on current health practices.**

# How big is this burden?

3

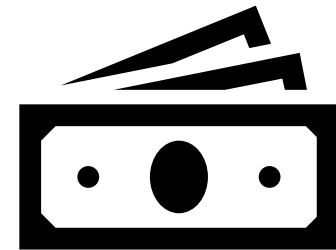


**Fig 1:** Australian Bureau of Statistics 2020–21 National health survey



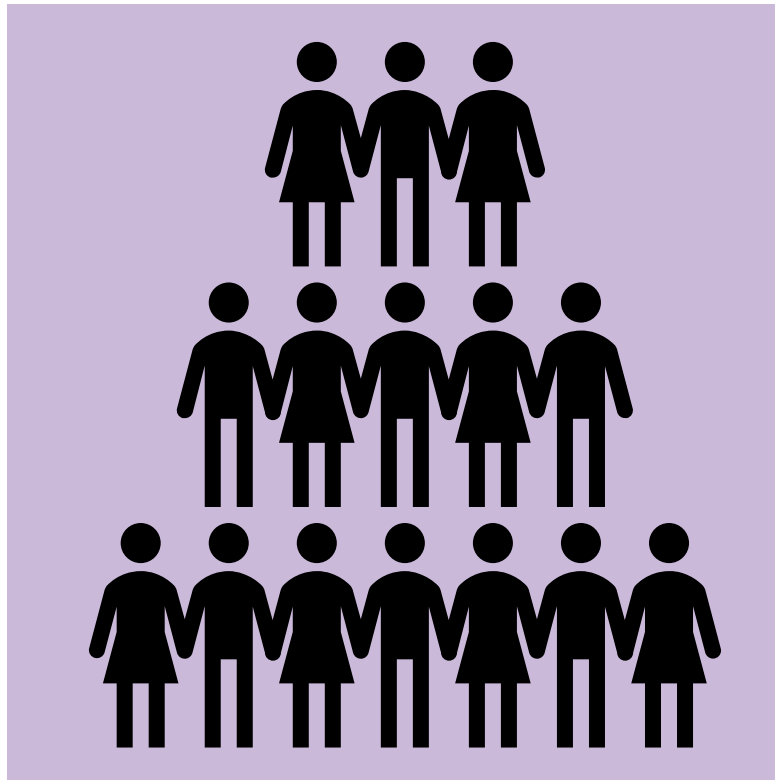
**Fig 2:** Arthritis and Osteoporosis Victoria. A Problem Worth Solving. Arthritis and Osteoporosis Victoria, Elsternwick, Victoria (2013)

**\$13.9 BILLION**

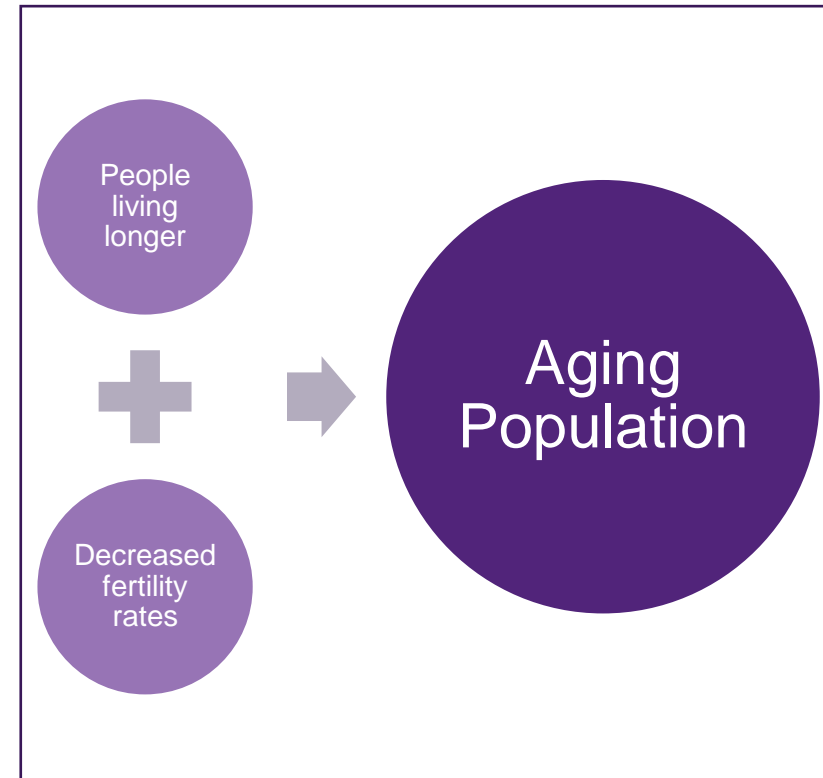


**Fig 1:** Australian Bureau of Statistics 2020–21 National health survey

# What is driving the change in health needs?

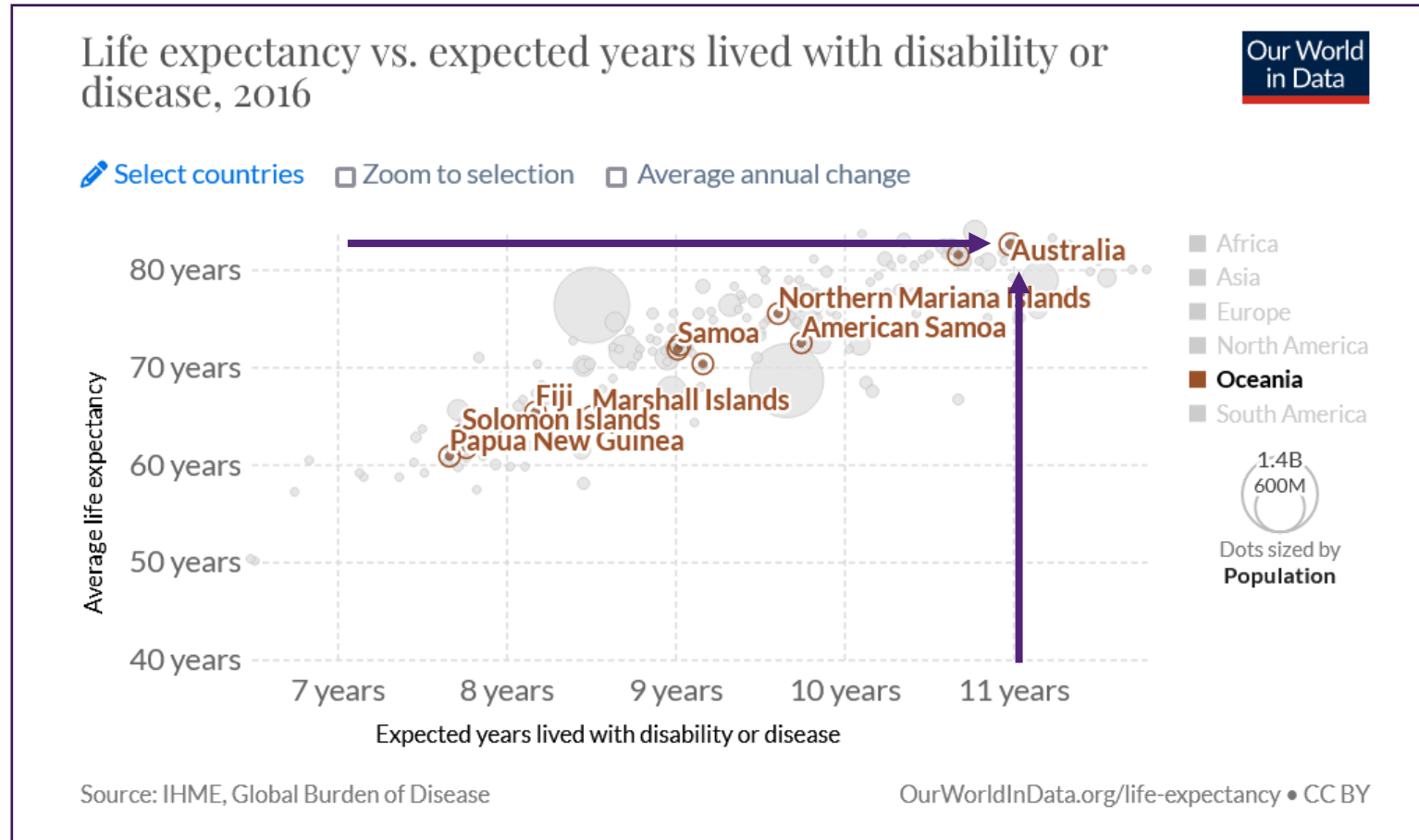


**Population Growth**



Source: Australian Bureau of Statistics. (2020)

# Rising challenge for people to live life with 'full health' (GBD 2019)



Not all pain is problematic.

Not all pain is considered important by patients.

Costa et al 2019



Caution in the consideration of preventing musculoskeletal pain

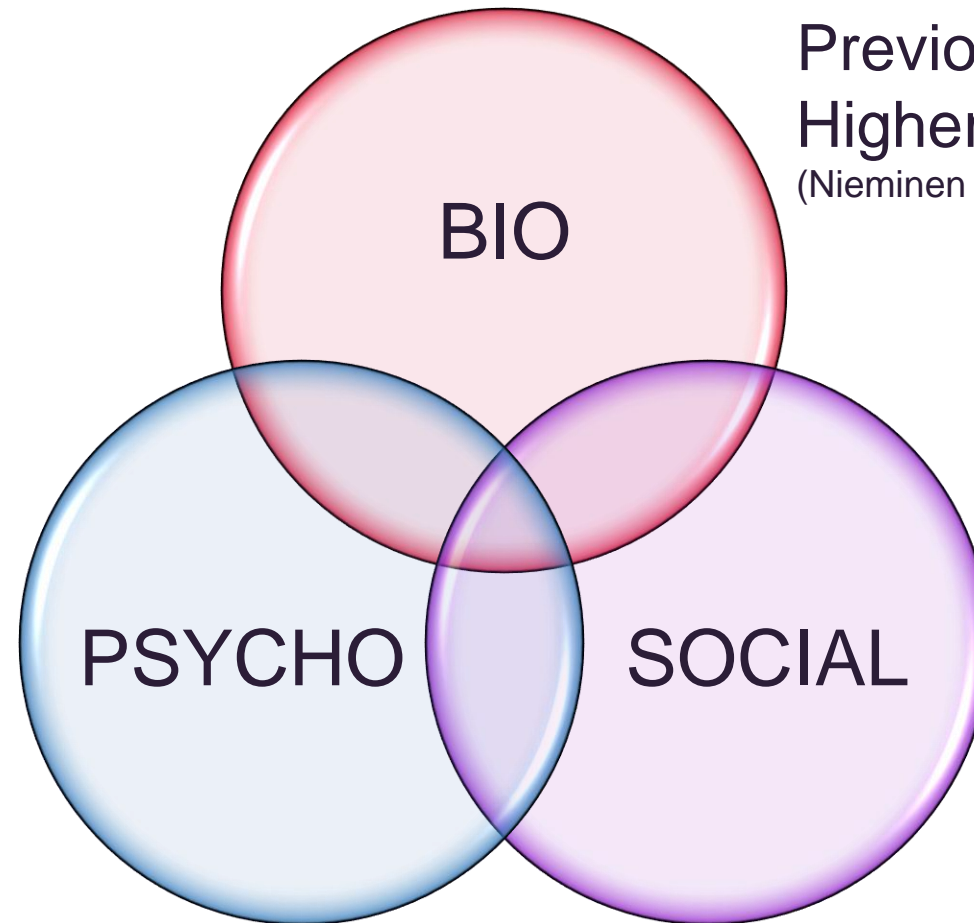
When considering prevention, the musculoskeletal presentations which we potentially should be focusing on are those:

**Where there is adverse effect on function and/or social and psychological wellbeing.**

# What do we know about secondary prevention?



Meyer et al, 2018



Previous pain episodes  
Higher pain intensity  
(Nieminen et al, 2021)

Anxiety/depression  
Fear avoidance  
Catastrophising  
(Nieminen et al, 2021)

Occupational factors  
(Mills et al, 2019)  
Lower socioeconomic  
(Janevic et al, 2017)



Validated tools to detect at risk patient

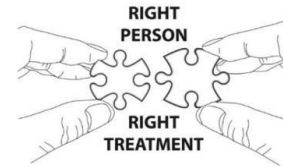
The Keele STarT MSK Tool for first contact clinicians



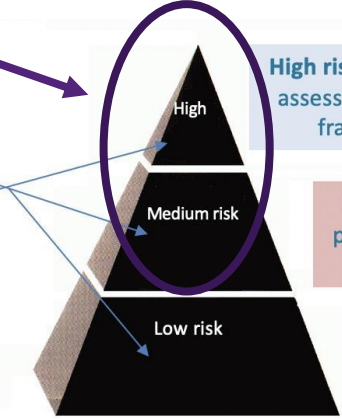
Risk Stratification Tool



Matched Treatment options



Question	Score
How long has the pain been present?	1-3
How often does the pain occur?	1-3
How severe is the pain?	1-3
Does the pain prevent you from doing your normal activities?	1-3
Does the pain prevent you from doing your work?	1-3
Does the pain prevent you from doing your usual activities?	1-3
Does the pain prevent you from doing your usual activities?	1-3
Does the pain prevent you from doing your usual activities?	1-3
Does the pain prevent you from doing your usual activities?	1-3
Does the pain prevent you from doing your usual activities?	1-3
Does the pain prevent you from doing your usual activities?	1-3
Does the pain prevent you from doing your usual activities?	1-3
Does the pain prevent you from doing your usual activities?	1-3



**High risk management** = refer for detailed biopsychosocial assessment, seek to address any co-morbidities, distress, frailty, and identify if medical options are needed

**Medium risk management** = support non-pharma physical activity, manual therapy and return-to-work options with a suitable therapist referral

**Low risk management** = de-medicalise problem advice and reassurance that prognosis is good; support self-management, simple OTC analgesia, promote non-pharma options & avoid referral or imaging

Source: <https://www.keele.ac.uk/startmsk/>

Clinical application of preventative strategies

Prevention and treatment of low back pain: evidence, challenges, and promising directions

N. Foster, J. Anema, +30 authors A. Woolf • Published 1 June 2018 • Medicine • The Lancet

	Effect in adults <sup>4</sup>	Effect in children <sup>5</sup>
Exercise and education	Effective (moderate quality)	No trials available
Exercise	Effective (low quality)	No trials available
Education	Ineffective (moderate quality)	Ineffective (moderate quality)
Back belt	Ineffective (very low quality)	No trials available
Shoe insoles	Ineffective (low quality)	No trials available
Ergonomic interventions at workplace	Ineffective (moderate quality)	No trials available
Ergonomic school furniture	NA	Effective (very low quality)

NA=not applicable.

**Table 1: Evidence of prevention strategies for low back pain: conclusions on effectiveness (and GRADE strength of evidence ratings) from systematic reviews**

Moderate quality evidence supports Exercise & Education

# Prevention of Low Back Pain

## A Systematic Review and Meta-analysis

Daniel Steffens, PhD; Chris G. Maher, PhD; Leani S. M. Pereira, PhD; Matthew L Stevens, MScMed (Clin Epi);  
Vinicius C. Oliveira, PhD; Meredith Chapple, BPhy; Luci F. Teixeira-Salmela, PhD; Mark J. Hancock, PhD

### Systematic Review and Meta-analysis (n=23 Randomised Clinical Trials)

<p><b>Exercise + Education vs no intervention</b></p> <p>Decreased risk of LBP episode by 45%</p> <p>No effect on sick leave</p>	<p>Moderate evidence</p> <p>Low evidence</p>	<p>Reduced risk of LBP episode at short &amp; long term follow up (1yr)</p>	<p>Effect size reduced in longer term (1yr)</p>
<p><b>Exercise alone vs no intervention</b></p> <p>Decreased risk of LBP episode by 35%</p>	<p>Low to very low evidence</p>	<p>Reduced risk of LBP episode in short term only</p>	<p>Effect size disappeared in longer term (1yr)</p>

# Education & exercise prescription varied

Education	Exercise
Information on LBP (educational booklet)	“Traditional exercise”
Anatomy & pathophysiology	Core strength & stabilisation
Lifting technique/ergonomic instruction	Active back school
Posture	Stretching
General fitness	Calisthenic exercises to stretch and strengthen the pelvic/spinal muscles
Pain management	Balance

Steffens et al, 2016

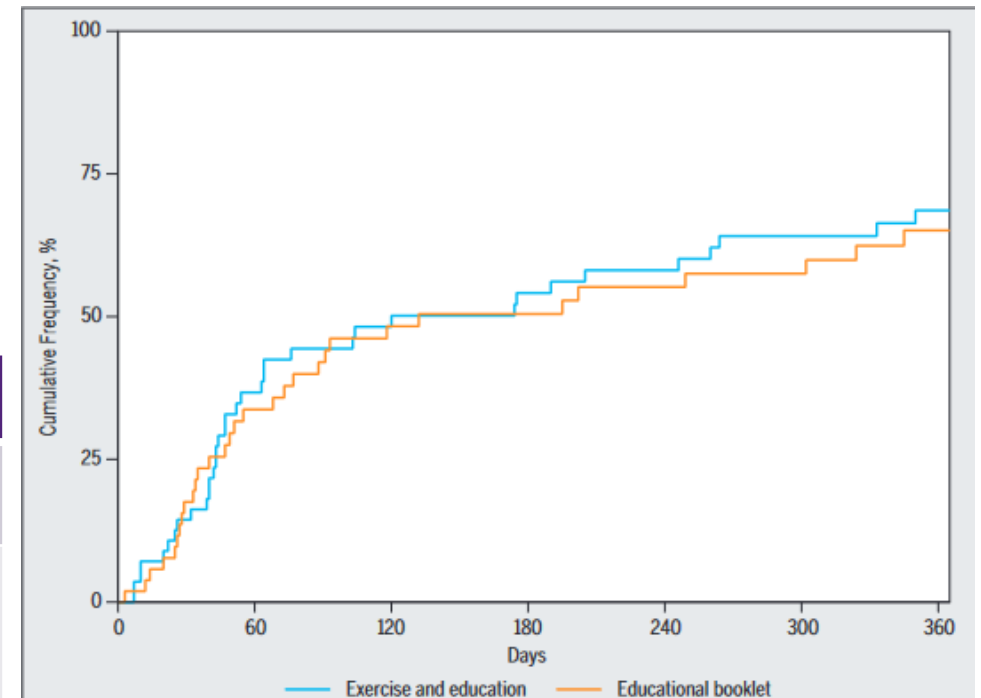
# More recent findings found no meaningful reduction in risk of recurrence compared to education

GIOVANNI E. FERREIRA, PhD<sup>1,2</sup> • CHUNG-WEI CHRISTINE LIN, PhD<sup>1,2</sup> • MATTHEW L. STEVENS, PhD<sup>3</sup>  
 MARK J. HANCOCK, PhD<sup>4</sup> • JANE LATIMER, PhD<sup>1,2</sup> • PATRICK KELLY, PhD<sup>1</sup>  
 TRISH WISBEY-ROTH, MPhysio (Sports Physio)<sup>5</sup> • CHRIS G. MAHER, DMedSc<sup>1,2</sup>

Exercise Is Medicine, But Perhaps Not for Preventing Low Back Pain: A Randomized Trial of Exercise and Education to Prevent Low Back Pain Recurrence

## Randomised Controlled Trial (n=111)

<b>Objective</b>	Exercise & Education vs Educational Booklet
<b>Results</b>	No greater reductions in the risk of recurrence of pain.
<b>Limitations</b>	Low adherence (55%), shorter duration program



# Exercise type & dose may matter

An individualised self-management exercise and education program did not prevent recurrence of low back pain but may reduce care seeking: a randomised trial

Tarcisio F de Campos <sup>a</sup>, Natasha C Pocovi <sup>a</sup>, Chris G Maher <sup>b</sup>, Helen A Clare <sup>c</sup>, Tatiane M da Silva <sup>d</sup>, Mark J Hancock <sup>a</sup>

## Randomised Controlled Trial (n=262)

<b>Objective</b>	Low cost, flexible McKenzie based self-management program vs minimal intervention control
<b>Results</b>	No worthwhile reductions in risk of activity limiting LBP episode but may reduce care seeking due to LBP.
<b>Limitations</b>	Shorter duration program, unsupervised, lower intensity

# Regular exercise may also have a protective effect against pain

The impact of exercise intended for fitness or sport on the prevalence of non-specific neck pain in adults: A systematic review

Josh Ireland, Peter Window, Shaun P. O'Leary 

## Systematic Review (18 studies)

Regular exercise intended for fitness or sport was associated with reduced prevalence of neck pain in adults

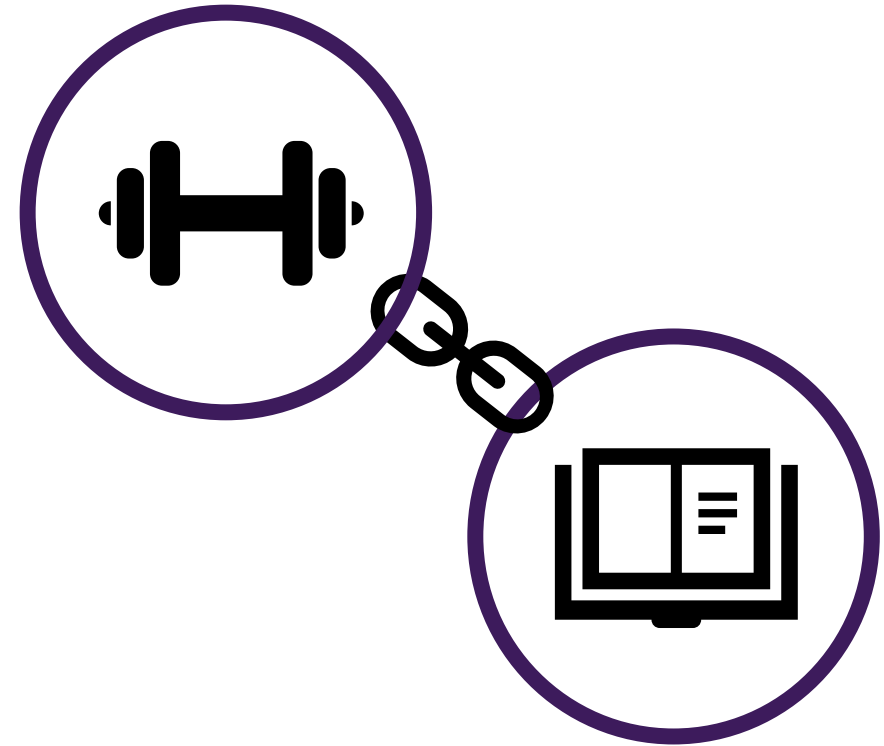
Fair to good quality evidence

Higher total exercise duration each week significantly associated with reduced neck pain prevalence

# Shifting our focus towards prevention...



Anticipating these changing health needs



Exercise + Education



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