

Ageing with gusto....

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"It's a letter from the Census Bureau, informing us of our move into an older demographic."

Young at heart, slightly
older in other places!



Physical challenges

- Joint and muscle changes
- Balance
- Falls
- Osteoporosis



Joint and muscle changes

- Progressive arthritis
 - Significant irreversible damage to joints
 - Fewer bleeds, more arthritic pain
 - Decreased ROM
- Local and global weakness
 - Antigravity/core muscles inhibited by pain and disuse
 - General/global muscle weakness
 - Poor control of movement, poor posture and general decreased condition

Joint and muscle changes

- Secondary MS complaints
 - eg Low back pain
- These all impact on mobility and function



Balance

- Balance decreases with age
- People with bleeding disorders have poorer balance than age matched controls (Fearn et al 2010; Lee et al 2003; Galach et al 2007)
 - Begins in childhood
 - Altered proprioception
- Other factors such as declining vision can impact on balance and contribute to falls



Falls

- Falls are the most serious and frequent home accident among older people. They are a major reason for admission to hospital or a residential care setting, even when no serious injury has occurred
- 30% of people over 65 and 50% of those over 80 fall each year
- Older adults who fall once are two to three times as likely to fall again within a year

Falls

- 20-30% of those who fall suffer injuries that reduce mobility and independence and increase the risk of premature death
- Contributing factors include:
 - Lower limb arthritis
 - Pain
 - Decreased ROM
 - Decreased strength
 - Previous falls
 - Fear of falling
 - Environmental
- Prevention is the obvious goal



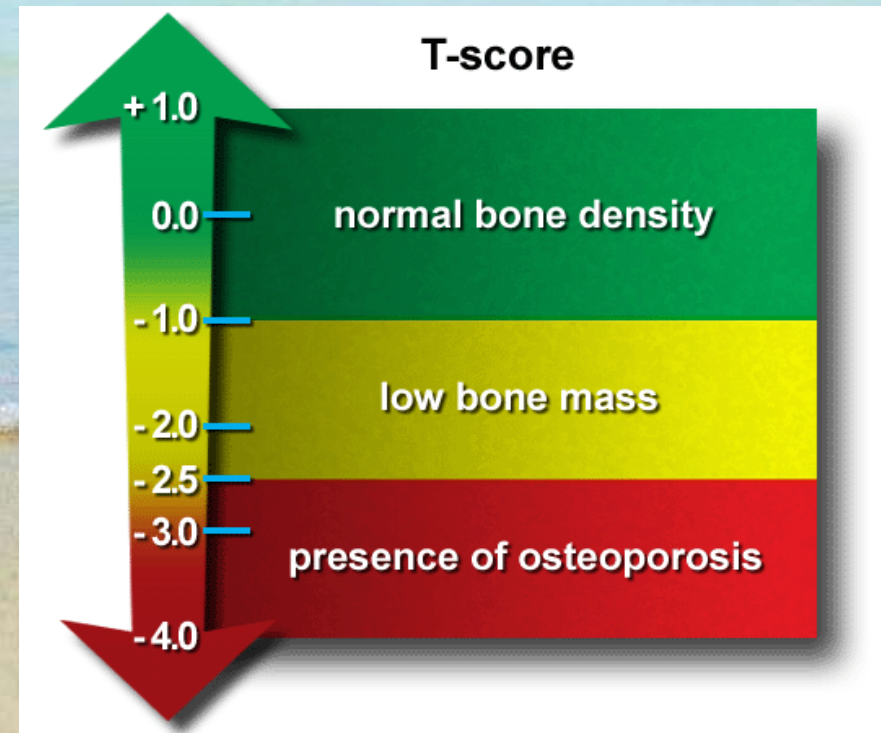
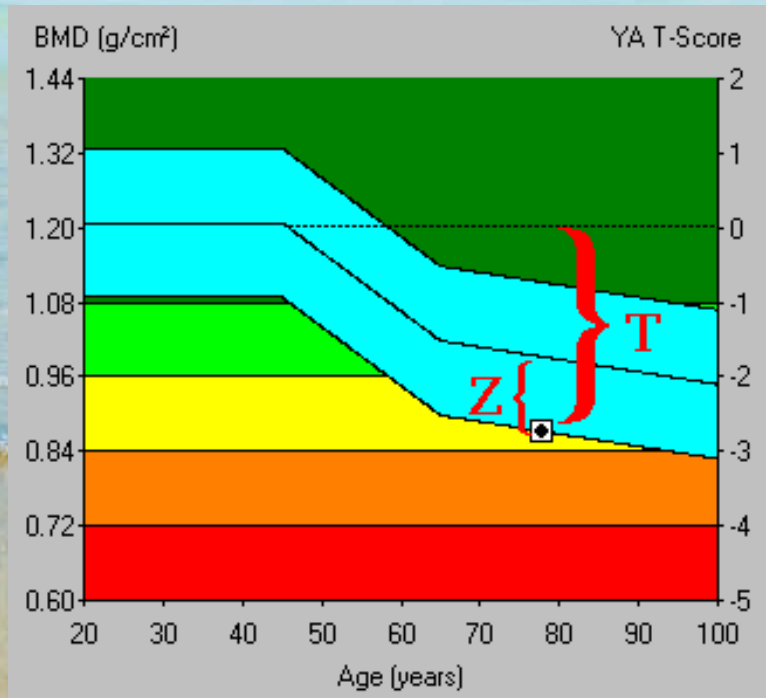
Osteoporosis

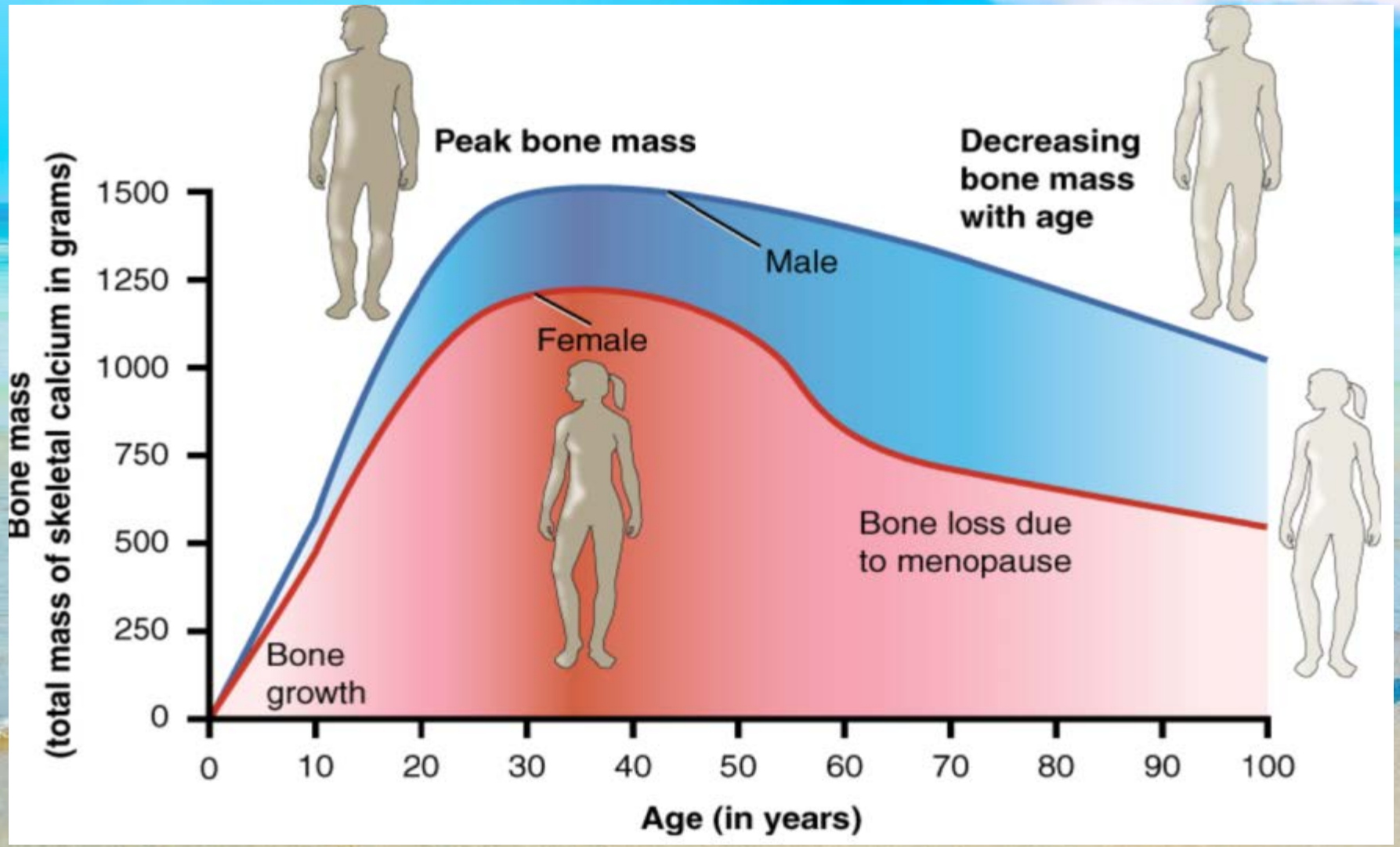
- Osteoporosis is a generalized skeletal disorder of low bone mass (thinning of the bone) and deterioration in its architecture, causing susceptibility to fracture (WHO)



Osteoporosis

- Diagnosed using DEXA scans
 - (dual-energy x-ray absorptiometry)
- T and Z scores





Osteoporosis

- Late childhood/early teens are key periods for lay down of bone
- Weight bearing exercise is essential for adequate bone mass accrual in youth.
- Bone density plateaus then begins to decline
- Loss can be accelerated by various factors
 - Diet : Need adequate amounts of calcium (at least 1,200 mg per day)
 - Vitamin D deficiency (sun exposure)
 - tobacco smoking and excessive alcohol intake

Osteoporosis

- Those with severe Haemophilia have been shown to have decreased bone mineral density (BMD) that begins in childhood (Paschou et al 2014)
- Likely decreased peak BMD from decreased weight bearing exercise and long periods of immobilisation during youth (Barnes et al 2004)
- Resultant increased incidence of osteoporosis in later life and increased fracture risk with falls

Osteoporosis

- Contributing factors: (Wallny et al 2007; Gerstner et al 2009)
 - Not on prophylaxis during youth
 - Significant arthropathy
 - Muscle atrophy
 - History of an inhibitor
 - Low BMI
 - Hep C
 - HIV



The good news....

Most of these factors can be significantly improved



RESEARCH

Joint and muscle changes

- –Physical activity has been shown to
 - Improve pain and symptoms
 - Improve joint nutrition
 - Strengthen muscles
 - Improve joint stability
 - Preserve and possibly improve joint ROM
 - Assist in weight control and therefore load on joints
 - 1kg extra weight = 4 kg of extra weight load (Messier et al 2005)
 - Improve posture and core muscle control

RESEARCH

Balance and Falls prevention

- Balance can also be improved through physical activity, and most falls can be prevented
- Exercise programs that address strength, balance, flexibility and/or endurance (2-3 of these components) significantly improve balance, and reduce the rate of falls and the number of people falling (Gillespie et al 2003)
- Specific Balance training reduces falls rates in older people (Sherrington et al 2008).

RESEARCH

Osteoporosis

- Resistance training combined with a variety of moderate impact weight-bearing activities is most effective for increasing bone density or preventing the bone loss that occurs as we age. (Kohrt et al. 2004; Kravitz et al 2009)
- Hip fractures have been found to be as much as 38-45% lower in older adults who have been physically active in their daily life, compared to less active people (Kohrt et al 2009).
- Stronger back muscles reduce the incidence of vertebral fractures (Sinaki et al 2002)

RESEARCH

Whole body vibration (WBV)

- Mixed results - Some evidence that WBV can halt the decline in BMD/may slightly increase BMD, although some studies report no change in BMD (Totony de Zepetnek et al 2009).
- Lots of variables eg frequency, amplitude
- Some contraindications/precautions including joint replacements
- More research needed.

RESEARCH

Gravity Fit

- Decreased gravity/prolonged bed rest negatively impacts on bone and joint health and muscle activation (Dr Caroline Richardson et al; and Belavy et al 2009)
- A close link between dysfunction in the antigravity muscle system, which protects joints from injury, and the development of musculoskeletal disease patterns has been demonstrated.

RESEARCH

Gravity Fit

- Reactivating anti-gravity system shown to be beneficial for prevention of secondary MS complaints
- Dr Caroline Richardson has combined her research on core stability with space science to design an exercise model that promotes muscle, bone and joint health and applies core stability to the whole body.



RESEARCH

Gravity Fit

- Progressively increased sensory effect of Gravity, with targeted recruitment of the correct muscles, to strengthen the deep body framework
- Designed to develop strong bones, as well as strong fatigue-resistant muscles to support and stabilise the spine and other joints enhance overall muscle performance





EXERCISE
*Lean Forward
Grapevine*

TYPE
Lumbar Core

LEVEL
Advanced

TOOL
Gravity Cap



EXERCISE
Single Leg Bend & Rotate

TYPE
Lumbar Core

LEVEL
Advanced

TOOL
Thoracic Pro

RESEARCH SBM

- 10 week pilot program - Brisbane
- Group wellness program focused on core, balance, osteoporosis and falls prevention
- Specifically designed for men with bleeding disorders and significant arthropathy
- 7 participants, all with severe Haemophilia

RESEARCH SBM

- Attendance average 75%
- Patient 4 had an unrelated acute on chronic back injury after week 3
- Patient R had to withdraw after week 3 due to orthopaedic surgery
- Pre and post measures taken (re-assessed after 7 weeks)
- Initial results very encouraging

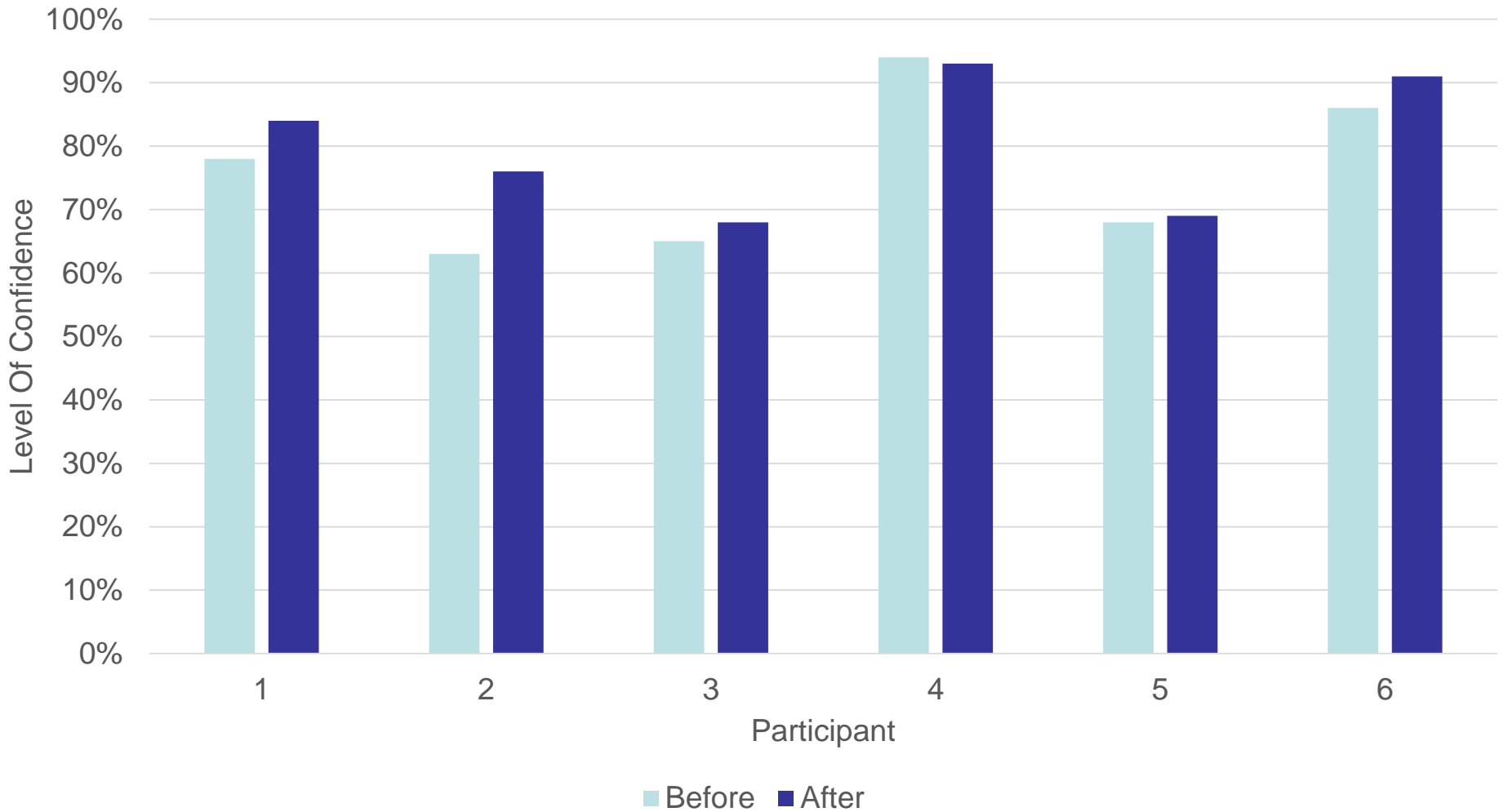


RESEARCH SBM

- 100% reported improved health behaviours
- 50% introduced balance practice at home
- 25% introduced new home strengthening exercises

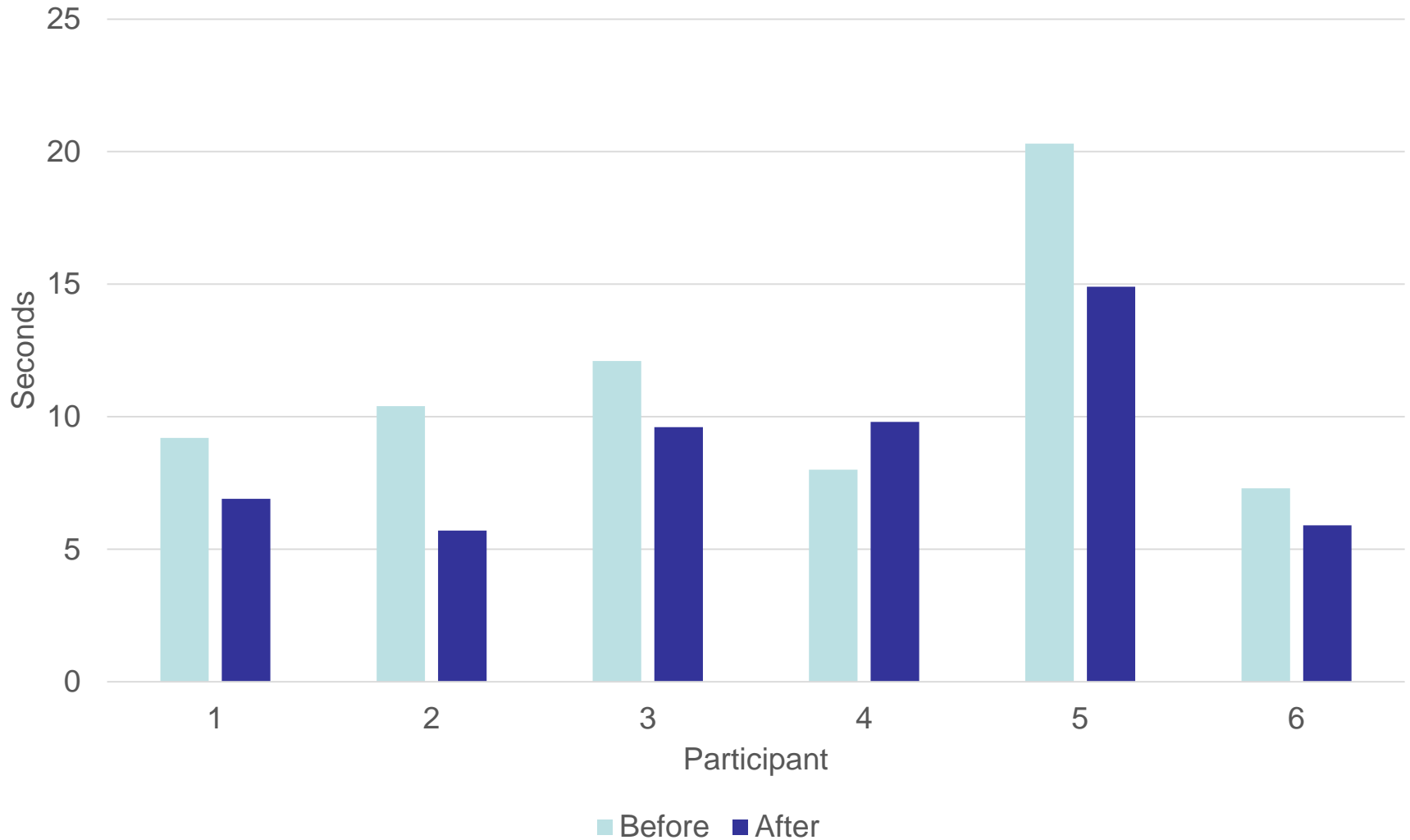


ACTIVITIES SPECIFIC BALANCE CONFIDENCE SCALE



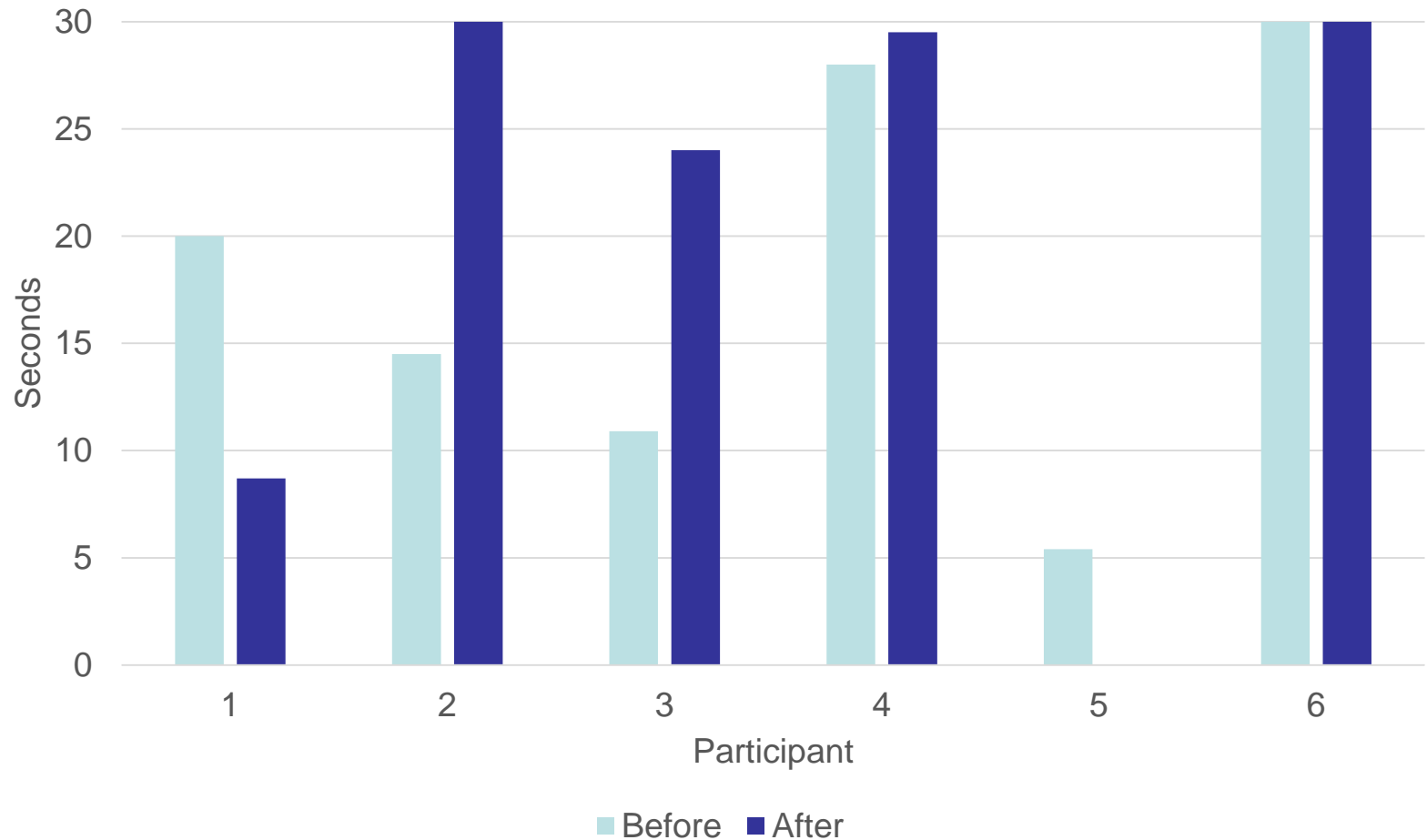
- All participants reported improved balance confidence with ADL's
- <67% is predictive of falling . 2 participants moved from the at risk category to a lower level of falls risk

TIMED UP & GO



- 2 participants moved from below normal into the normal range for their age
- All improved except Participant 4 which reflects his acute flare up of LBP

SINGLE LEG STANDING (EYES OPEN)



- NB All participants passed with 2 feet, eyes open, at pre-test
- 2 participants moved from below normal for single leg stance, to normal for their age
- Participant 1's results seem to be an anomaly (tester error?)

Application....



Application


- Participate in regular physical activity throughout life
- Use muscles and take joints through range
 - ‘Use it or Lose it’!
- Challenge balance
- Do weight bearing exercise and resistance training to build bone and prevent fracture
- Be informed
 - eg ‘Your home safety checklist’ WA or ‘Stay on your feet’ Qld, OP Australia website

STAY ACTIVE

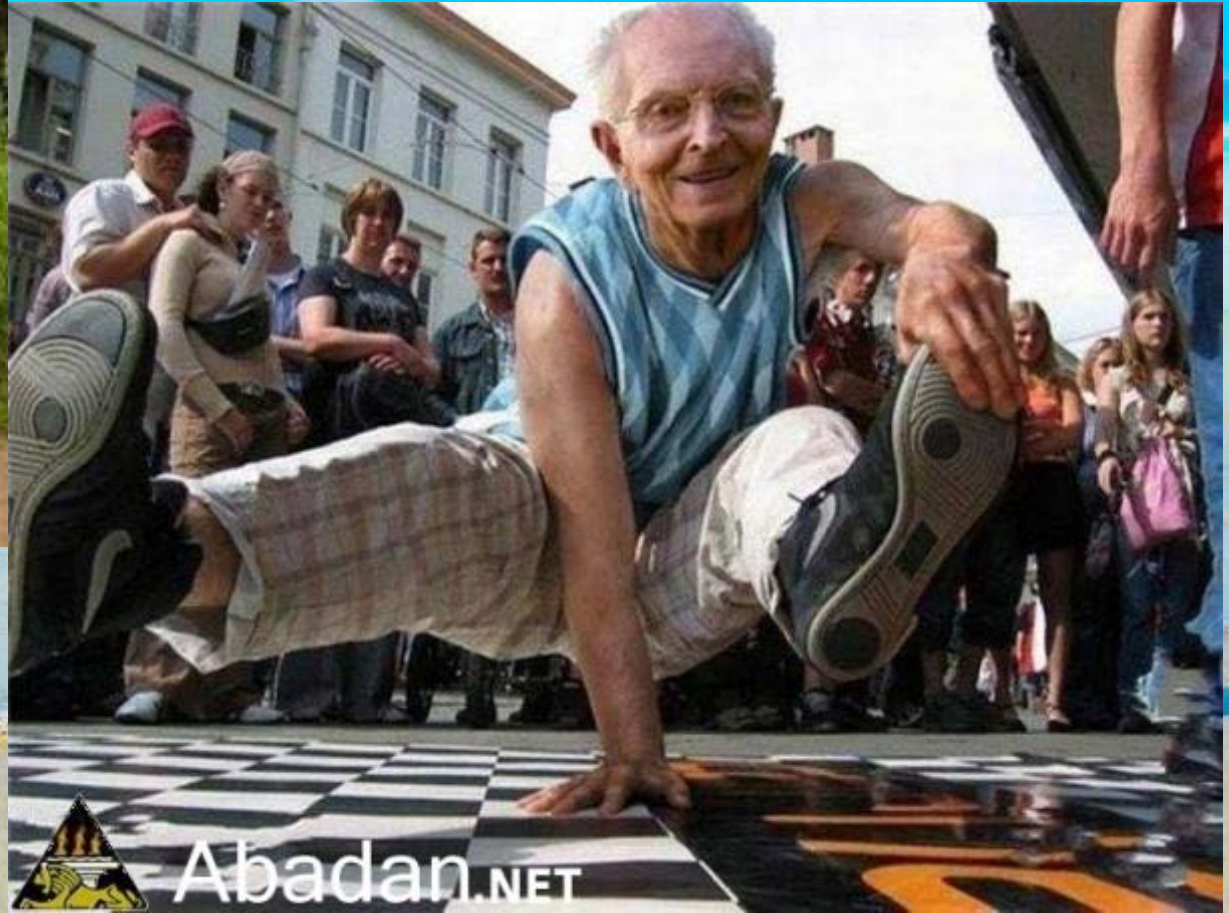
- Incidental activity
 - Challenge yourself in daily living
 - Pull/push/carry/use the stairs
 - Manipulate environment to encourage healthy habits eg car, don't use the remote



STAY ACTIVE

- Purposeful activity
 - Walking (pedometer/goals/with a friend)
 - Balance programs eg SBM
 - Tai Chi (class or DVD)
 - Pilates
 - Hydrotherapy
 - Be creative! Find something you enjoy! Get out and enjoy life!
 - Consider new initiatives eg GravityFit/WBV
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Never forget to be young at heart!
Challenge yourself and try new things!



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SBM

STRONG BLOODY MEN