Prevention of falls and fractures as you age past the menopause

Falls are the main cause of fractures or broken bones at any age.

Risk of falling is increased with age, number of medical conditions (3 or more), number of medications (4 or more), small or large body size, vision or hearing decline, vestibular problems (middle ear balance organ problems), poor balance, stroke, diabetes, Parkinson's disease and dementia. With every additional medical condition diagnosed before the age of 60, the risk of falling increases by 8%. After the age of 60, this increases to 35% with every additional medical condition such as high blood pressure, asthma or arthritis[1].

Risk of fracture is increased with a history of a fall, and/or low bone density (osteopenia or osteoporosis)2.

Balance and bone density decline significantly between the age of 40 and 60 and this age usually coincides with menopause. Some sobering statistics are that:

- 1 in 5 women will fall each year before they reach 60
- After 65 years 1 in 3 will fall each year
- Women over 80, 1 in 2 will fall each year
- 1 in 2 women 50 and over will suffer a broken bone (fracture) due to a fall in their remaining life-time.

Balance Screening Test

- Inability to retain balance when standing on two feet on a firm foam cushion for 30 seconds with eyes closed is highly predictive of falls 2,3 and indicates need for full assessment of balance by a physiotherapist and referral for management.

NB. Safety issue: Anyone of any age might lose balance on this test and so stand very close and be prepared to catch the person being assessed during the test.

Bone Density Test

- DXA scan of proximal femur [hip] and lumbar spine are the most effective in diagnosing low bone density. (Heel [calcaneus] bone scans sometimes available at pharmacies are not reliable in diagnosing osteoporosis).

Recommendations for reducing fall risk

- Change in lifestyle to ensure diet is supportive of good health and will reduce likelihood of acquiring diabetes, heart disease and other nutrition related disorders.
- Increase level of physical activity and reduce sedentary time as this has been linked to prevention of chronic diseases such as diabetes and heart disease.
- Take up an exercise program that focuses on balance e.g. Tai Chi, Pilates or a specific balance strategy training program. Evidence only supports exercise programs that include a balance training component in reducing falls [4,5].
- The ability to see edges clearly and to see in poor lighting, declines significantly by 60, so regular eye tests and correction of vision are very important to prevent a fall.

Recommendations for controlling bone loss (osteopenia or osteoporosis)

- Change in lifestyle to ensure diet has a minimum of 1200 mg of calcium daily to reduce likelihood of osteoporosis. Vitamin D and calcium supplements to diet.
- Ensure adequate Vitamin D levels from sun or supplements as needed for bone building.
- Increase level of physical activity and reduce sedentary time as this has been linked to prevention of osteoporosis.
- Take up a novel exercise program that requires speed of muscle contraction, loads the bones and focuses on muscles that attach to bones near where most fractures occur to maximise bone building effect. Eg Pilates, Tai Chi, physiotherapist led balance training that challenges limits of stability control, progressing resisted exercise6. Minimal or no effect on bone was found in exercise programs that only concentrated on building bone[7].
- Combining the recommendations for improving balance and bones is the best approach to preventing falls and fractures as you age.

References:

1 Nitz JC, Low Choy NL (2008). 'Falling is not just for older women' Climacteric 11; 6, 461-466

2 Nitz JC, Stock L, Khan A. (2012) "Health-related predictors of falls and fractures in women over 40. Osteoporosis International DOI:10.1007/s00198-012-2004-z

3 Low Choy NL, Brauer SG, Nitz JC: (2007). Timed stance – a tool for screening age-related differences in balance. Australasian Journal on Ageing 26; 1, 29-34.

4 Sherrington C, Whitney JC, Lord SR, Herbert RD, Cumming RG, Close JCT. Effective exercise for the prevention of falls: A systematic review and meta-analysis. J Am Geriatr Soc 2008;56: 2234-2243

5 Fu S, Low Choy NL, Nitz JC. (2009) Controlling balance decline across the menopause using a specific balance strategy training program. Climacteric 12; 2, 165-176

6 Hourigan SR, Nitz JC, Brauer SG, O'Neill S, Wong J, Richardson C (2008): Positive effects of exercise on falls and fracture risk in osteopenic women. Osteoporosis International 19; 1077-1086

7 Howe TE, Shea B, Dawson LJ, Downie F, Murray A, Ross C, Harbour RT, Caldwell LM, Creed G. Exercise for preventing and treating osteoporosis in postmenopausal women. Cochrane Database of Systematic Reviews 2011; 7: Art. No.: CD000333. DOI: 10.1002/14651858.CD000333.pub2.