



Australia, like most Western countries are faced with an 'aging' population. This trend has heightened the focus of falls prevention in the health industry so much so that the 1st Australian Falls Prevention conference was held in Sydney last month. The conference marks the high priority this incidence is to health professionals and the medical system. However, it is not only older adults who benefit from balance training. Like many ailments, prevention is better than cure so balance training is important for all of us to avoid injury and to maintain function.

## What is balance?

Balance refers to the vertical alignment of the body during movement. Optimal balance requires the least amount of muscle work to maintain posture and minimise the stress on the overall body structure. This requires multiple systems to interact automatically and without error to provide accurate information to our nervous system. Our brains continually process information sent from sensory receptors in the eyes, inner ears, joints, muscles and skin about the strength, force, timing and speed of movement all of which is critical information for maintaining balance.

Our sense of balance can be affected by several factors including medication or a medical condition. Our bodies are also less able to maintain or correct balance if the muscles are weak. The advancement of technology and increase in automated processes of our current environment has lessened physical activity as part of our daily functioning. This has meant, for many of us, more time sitting and less movement which in turn reduces flexibility, placing more strain on the lower back.

## How does balance help prevent falls and injury?

Increased balance means increased stability. You are able to 'right' yourself more easily and quickly when you become unbalanced.

## Balance and rehabilitation

Strength, flexibility, and endurance are crucial to maintaining balance and preventing falls. Even if your basic perception of balance is good, you can still be at risk for falls if your muscles are weakened or stiff, or if you tire easily. Older adults - particularly those with osteoporosis, have very legitimate concerns about falling and often restrict their physical activities to prevent such a mishap. Ironically, lack of exercise only makes it more likely that a fall will occur.

Fortunately, physical therapy can help you learn to cultivate and maintain higher levels of strength, flexibility, and endurance in a way that still feels safe and secure. Research indicates that the risk of falling in older adults can be reduced dramatically when specific exercises, activities, and interventions are prescribed by physical therapists. There are instances, however, in which physical therapy alone may not be appropriate. If you have an inner ear disorder, for example, you will need to consult a physician.

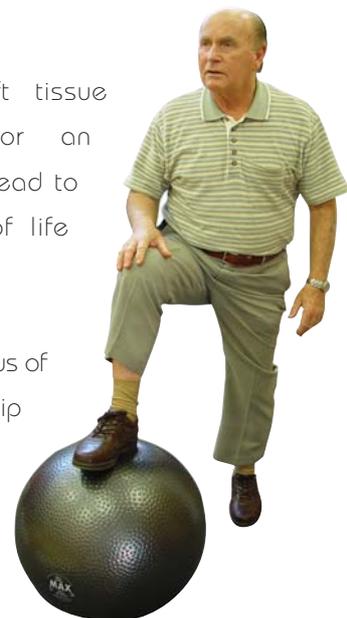


### Important for all ages

Everybody should challenge their balance skills to reduce risk of injury and falls however, people over the age of 65 are at greater risk of obtaining an injury from a fall. One third of people over the age of 65 fall each year. (Queensland Government, QLD Health 2003) Many of these falls are serious enough to require medical attention or hospitalisation. The most common cause of falls are from environmental hazards such as slippery floors and loose rugs.

### Effects of falls

Falls can lead to broken bones or soft tissue damage which can be disastrous for an elite athlete or the elderly. Falls can also lead to diminished health, mobility and quality of life especially in the elderly.



In terms of morbidity and mortality, the most serious of these fall-related injuries is fracture of the hip. Elderly people recover slowly from hip

fractures and are vulnerable to post-operative and bed rest complications. In many cases, hip fractures result in death and of those who survive, many never regain complete mobility. Another consequence of falling is the "long lie" - remaining on the ground or floor for more than an hour after a fall. The long lie is a marker of weakness, illness and social isolation and is associated with high mortality rates among the elderly. Time spent on the floor is associated with fear of falling, muscle damage, pneumonia, pressure sores, dehydration and hypothermia. Falls can also result in restriction of activity and fear of falling, reduced quality of life and independence. Even falls that do not result in physical injuries can result in the "post-fall syndrome" – a loss of confidence, hesitancy, tentativeness with resultant loss of mobility and independence. It has been found that after falling, 48% of older people report a fear of falling and 25% report curtailing activities.

Finally, falls can also lead to disability, decreased mobility which often results in increased dependency on others and hence an increased probability of being admitted to an institution. Falls are commonly cited as a contributing reason for an older person requiring admission to a nursing home. (Falls and Balance Research Group, Prince of Wales Medical Research Institute)

### In 1998, falls related injuries resulted in:

- 45,069 episodes of in-patient hospital care; and
- 1,014 recorded deaths (Cripps & Carman 2001).

*One thousand and fourteen elderly people were recorded as dying from accidental falls in Australia in 1998.* (Australian Institute for Health and Welfare, 2001)

### Optimise your balance and reduce risk of falls

- Minimise obstacles in the home
- Exercise on an unstable platform such as a mediBall, duraDisc or wobble board
- Maintain regular exercise to strengthen muscles and maintain flexibility
- Review and discuss effects of your medication with your doctor

