What causes a fall?

Medical, physical, cognitive and environmental considerations
Most falls in the elderly are due to

- the person
- the environment
- choices people make
- All of the above

Falls risk factors

- Stable vs changing
- Modifiable vs non-modifiable
- Intrinsic vs extrinsic

Falls risk factors

- e.g. Age
- e.g. Medications
- e.g. Environment
History of Falls

- More than one fall in the last 12 months
- A fall with an injury in the previous year

Medication (as a falls risk factor)

- use of > 4 medications ***
- Medicines that change brain function
  (mood, perception, conscious level) ***
- Drugs for depression ***
- Major tranquilisers ***
  (delusions, hallucinations, disordered thought)
- Minor tranquilisers (slow down brain function) ***
- Some heart medicines *
- Blood pressure medicine *
- Medicine for inflammation -
- Pain medicines -

Lord et al, 2007

*** strong evidence
** moderate evidence
* weak evidence
- no evidence
Medical Conditions

- impaired cognition ***
- Stroke ***
- Parkinson’s disease ***
- multiple chronic illnesses ***
- depression **
- neurological signs **
- incontinence **
- acute illness **
- arthritis *
- foot problems *
- dizziness *
- orthostatic hypotension *
- vestibular disorders -

Lord et al, 2007

*** strong evidence
** moderate evidence
* weak evidence
- no evidence

Vitamin D Deficiency

- Vitamin D important for bone mineralisation, and general muscle and bone health

Older adults at risk of deficiency -
- Exposed to less sunshine
- Reduced ability to synthesise vitamin D
Central integration

**SENsory**
- vision
- vestibular
- somato-sensory

**Motor**
- coordination
- strength
- range of motion
- reaction time

**Balance**

Source: Vision 2020
www.vision2020australia.org.au
**Vision (as a falls risk factor)**

- People with a vision impairment have:
  - twice as many falls
  - three times the risk of depression and
  - the risk of hip fractures increases eight fold.


**Poor eye health**

- Caused by cataracts and infections
Vestibular dysfunction

- Common cause of dizziness
- Difficult to diagnose
- Vestibular rehabilitation can be used to treat

The Lower Limb

Age related changes

- Muscle weakness
- Decreased joint range of motion
- Somatosensory changes
Foot Problems

- Painful feet including painful corns, arthritis
- bunions
- gout
- swollen ankles / feet
- toe deformities (hammer, mallet and claw toes)
- fallen arches
- ingrown toenails

Footwear
Falls in Dementia

- 60-90% of older people with dementia (twice the rate of older people without cognitive impairment)

- Approx. 3 times increased fracture risk

- Fallers with dementia are 5 times more likely to be institutionalized

Continence

- Risk factor for falls in 2 ways:
  - Episode of incontinence and subsequent potential for slipping
  - Urge incontinence may cause a person to hurry

Continence (as a falls risk factor)

- Relationship between incontinence and falls is likely to be confounded by mobility and cognition
- Urinary frequency or need for frequent assistance with toileting
- Desire to avoid an incontinent episode
Alcohol

Nutrition and Hydration
Need adequate hydration
Need good nutrition
• Low Body Mass Index (BMI)
  VS
• High Body Mass Index (BMI)
Behavioural factors

Physical Activity

Inactive ↔ Moderately active ↔ Active
Now add to that...

...The environment

What is the environment?
...the physical, social and attitudinal environment in which people live and conduct their lives (WHO, 2001)
...comprises cultural, physical, social and institutional elements (CAOT, 1997)

The environment and person centred care

comfort
safety
preferences
Falls Prevention Tip:

Falls occur because of an interaction of factors.