PHYSIOTHERAPY ACROSS THE LIFESPAN

WEEK ONE PREVENTING FALLS IN OLDER PEOPLE

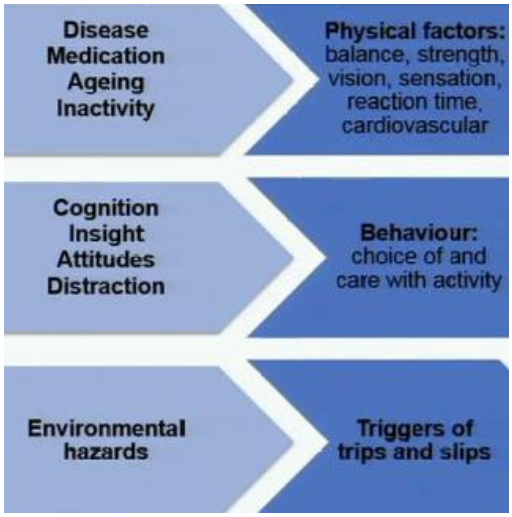
Physiology of Falls

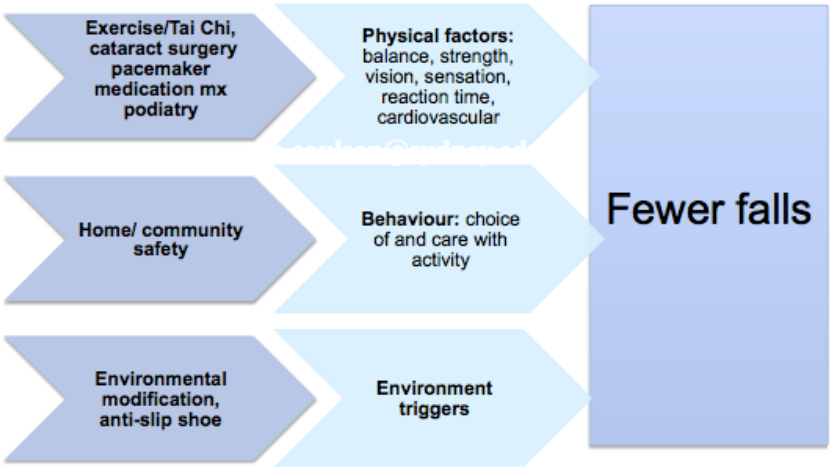
An aging population:

- By 2056, 23-25% Australians aged 65+
- Falls are a common problem
  - 1 in 3 community dwellers over 65 fall
  - 1 in 2 residential aged care fall
  - 1 in 14 hospital admissions fall
- Impact of falls:
  - Injuries
  - Decreased confidence
  - Decreased activity levels
  - Decreased independence
  - Decreased community participation
  - Residential aged care admission

When do falls occur:

- Falls happen when an individuals physiology cant cope with a task being undertaken and/or the environment in which the task is being undertaken
- Interaction between physiology, behavior and environment
- People with better physical function fall in more challenging environments/ activities
- People with impaired physical function will fall in less challenging environments/ activities
- Exercise in later life will help prevent falls
- Causes of falls:
  - Trip
  - Balance
  - Slip
  - Unsure
  - Weak legs
  - Dizzy
  - Faint





Physiology of falls:

- Tests to measure susceptibility to falls:
  - Proprioception
  - Contrast sensitivity
  - Quadriceps strength
  - Reaction time
  - Sway on floor and foam
- Falls assessment summary:
  - Falls are not random events
  - Can be predicted and understood
  - Tests of motor function and questions about past falls and medication use
- Assessment tools can:
  - Be used in different population groups
  - Help understand causes of falls
  - Predict future falls
  - Prescribe evidence based interventions

Evidence for Falls Prevention

Different study designs for different clinical questions:

1. Effects of intervention
   - What is the effect of this therapy/ prevention strategy
   - RCT
2. Feelings and experiences
   - What do older people commonly think and feel about falls
   - Qualitative study
3. Diagnosis
   - How do I interpret results of this diagnostic test
   - Comparison with "gold" standard
4. Prognosis
   - What is this persons prognosis
   - Prospective cohort study

Exercise:

- Meta-analysis: 17% fewer falls in exercise than control participants
- Meta-analysis: 20% fewer falls in exercise participants

Balance:

- Ability to maintain projection of body's COM within manageable limits of BOS or in transit to new BOS
  - Ability to remain upright or control movements of COM
  - Necessary for safe performance of tasks
- High challenge to balance:
  - Exercise in standing involving:
    1. Controlled movements of body
    2. Feet close together
    3. Minimal arm support
- Systematic review results:
  - Greater effects from exercise programs that challenged balance and involved 3+ hours exercise per week