

- Fall Prevention
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- Objectives
- Review what a fall is
- Review Falls statistics
- Discuss risk factors for falling
- Discuss clinical practice guidelines to identify and manage risk of falling in community dwelling adults
- Recognize functional tests to determine level of risk for falling
- Enhance knowledge of fall prevention education
- What is a fall....

Coming to rest on the ground or lower level not caused by an external event or an acute overwhelming event. (3)

Unintended non-medical event resulting in a person finding themselves on a lower surface (4)

- Falls Statistics
- 30-40% of people aged 65+ fall (3)
- ½ of falls result in injury of which 10% are serious (3)
- Injury rates increase as age does (3)
- \$30 billion spent annually in medical costs (1,3)
- Leading cause of injury and fatal injury in the elderly
- Worldwide second leading cause of accidental death and leading cause of trauma related hospital admissions
- Prevalence
- By 2030 1 in 5 Americans will be 65 years old or older
- Baby boomers = 1/3 of population will be over the age of 55
- 2-3x more likely to have a fall if one has already fallen

- Due to increase in fear of falling which indirectly causes restriction of activity (2,3)
- Increased risk if an individual has chronic or developmental conditions (4)
- Less than ½ of older adults that fall talk to their healthcare provider about it (3)
- Susceptibility of falling
- Natural aging process causes:
 - Reduced postural response
 - Diminished sensory acuity
 - Impaired musculoskeletal, neuromuscular and cardiopulmonary systems

(2)

- Intrinsic causes of falls
 - Decline in physical mobility
 - Being sedentary
 - Poor nutrition
 - Lack of socialization
 - Secondary deconditioning
 - Improper assistive device use
 - Vision and hearing impairments
 - Fear of falling/low self-efficacy
 - Medications
 - Poly-pharmacy
 - Side effects
 - Co-morbidities
 - HTN, vertigo, CVA, MI, PD, MS, visual impairments, cognitive deficits etc.
- (2,3,4)
- Extrinsic causes of falls
 - Clutter in the home

- Stairs
- Trip hazards
- Wet floors
- Lack of grab bars
- Poor lighting
- Narrow doorways
- Throw rugs
- ramps
- Escalators and elevators
- Crowded areas

(3,4)

- Non-Modifiable Risk Factors
- Age > 65
- History of falls
- F>M
- Decreased sensation in feet
- Chronic disease
- Low cognition/distractibility
- Financial limitations for resources
- White> hispanic or African American
- Modifiable Risk factors
- Nutrition and hydration
- Physical Inactivity
 - Leads to:
 - Balance impairments

(4)

- LE and core weakness
 - Postural deficits
 - Unsteady gait
- Decreased endurance and increase in fatigue
- Negative impact on mood and motivation
 - Fear of falling
 - Decline in quality of life
- Injuries
- Prevention
- Falls can be prevented with proper screening and tailored interventions (1)
- Clinical practice guidelines for physical therapists have been developed (1)
- Organizations exist to promote falls education
 - CDC
 - STEADI (stopping elderly accident, deaths & injuries)
 - USPSTF (US preventative service task force)
 - NICE (national institute for health and care institute)
 - ABG (american geriatric society)
- Clinical Practice Guidelines
- Screen every patient over 65 whether or not they have fallen in the past few months (1)
- Refer out as appropriate
- Educate
- Proper screening can reduce falls risk by 24% (3)
- Screen
- Identification of falls history within the past 12 months (1)
 - Context of fall

- Time of day
 - Did injury occur
 - Activity of time of fall
 - Frequency
- Question the patient about their perception of difficulty with walking or balance (1,3)
 - Do you feel unsteady when walking?
 - Do you worry about falling?
- A Negative Screen is when:
 - The patient reports 1 fall without injury and does not have gait or balance problems (3)
- A Positive Screen is when:
 - The patient reports multiple falls regardless of balance and gait impairments (1)
 - The patient reports one fall, and a balance or gait impairment is observed (1)
- Multifactorial Assessment
- Medications review
 - Especially psychoactive, diuretics, anti-hypertensives and anti-inflammatory drugs (3)
 - Tend to cause sedation and alters the sensorium (3)
- Systems review
 - Depression, OA, osteoporosis, cardiovascular disease, vitamin D deficiency, urinary function, vision
 - Check BP
- Discuss personal factors
 - Physical activity, ADLs, family support/social support, home environment
- Evaluate strength, ROM, flexibility, balance, gait, footwear, neurological function, cognition, vestibular system, posture (1)
- Functional Outcome Measures
- Goals for older adults at risk of falling

- Reduce risk of fall and injury
- Maintain highest level of functional mobility and independence
- Ensure on-going follow-up
- Interventions: HEP
 - Individualized based on impairments found during the evaluation
 - Encourage patient to walk, participate in Tai Chi

Examples:

- Ankle DF/PF
- Heel raise
- Side stepping along kitchen counter
- Vestibular exercises
- Bridges
- Clamshells
- Postural correction
- Interventions: In Clinic

Individualized based on impairments found on evaluation

Examples:

- Kneeling balance
- quadruped
- Eyes open and closed
- Perturbations and compliant surfaces
- Church pew and tandem rocking
- Resisted walking
- Posture
 - Paloff press

- Pull downs
- Thoracic mobility
- Pec stretch
- Chair stands
- Go outside!
- Patient Education
- Falls safety checklist
- How to fall safely
- How to get up from a fall
- Community resources
- References

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2. Lusardi MM, Fritz S, Middleton A, et al. Determining Risk of Falls in Community Dwelling Older Adults: A Systematic Review and Meta-analysis Using Posttest Probability. *J Geriatr Phys Ther.* 2016;40(1):1-36.
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