The Role of PT and OT in Fall Prevention

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Why do people fall?

Research shows that a combined effect of many interacting factors increases fall risk.²

FALLS

• Lower extremity weakness
• Previous falls
• Gait & balance disorders
• Decline in vision
• Depression
• Functional & cognitive impairment
• Dizziness
• Low body mass index
• Incontinence
• Female sex
• Advanced age

Intrinsic

Extrinsic

• Polypharmacy
• Stairs
• Clutter
• Wet surfaces
• Loose rugs/carpets
• Cords
• Poor lighting
Physical Therapy/Occupational therapy

• **Assessment – Comprehensive**
  - History of falls?
  - Fear of falls?
  - Medication use?
  - Medical history
  - Strength tests
  - Mobility tests
  - Gait analysis
  - Balance tests
  - Vision
  - Cognition
  - System review
    - Neurological
    - Cardiovascular
    - Integumentary
    - Pulmonary
  - Special tests

• **Mobility Devices**
  - Prescription
  - Fitting
  - Utilization
  - Maintenance
PT/OT ASSESSMENT

- Fitness/Physical Activity
- Balance
- Vision
- Fear of Falling
- Cognition
- Mobility
What are your therapists using?

- Tinetti Balance Assessment
  - Testing static and dynamic balance
- Falls Efficacy Scale
  - A questionnaire rating confidence in completing tasks without fear of falling
- Berg Balance Scale
  - A 14 item scale testing static and dynamic balance in sit and in standing
- Time Up and Go
  - Testing dynamic balance. Testing the time it takes to stand up walk 10 feet turn walk back and sit down
- 6 minute walk test
  - Measuring the distance a person can walk in 6 minutes
PT/OT Intervention

Not only is there evidence but the evidence is overwhelming to support intervention.
PT/OT Intervention; education and training

- Rehabilitation – physical activity, strengthening, balance training,

- Compensatory Strategies – environmental adaptations, assistive technology

- Maintenance!!
Multi-Component Approach

- Involves targeting multiple areas to reduce fall risk, such as strength, mobility, balance, posture, vision, environmental modifications, medications, etc.

- Stronger level of evidence versus single component approach, such as only using exercise or home modifications.

- Results have shown decrease in falls, improvement of physical factors that predispose patient to falling, and reduced fear of falling.
Best Practice Ideas

• Consistent and daily communication
• Early identification of risk
• Thoughtful planning in changes of environment
• Physical assessment at admission and on a routine basis – catch the changes early!
• Regular vision screening – glasses!
Programs and Protocols

• There are many programs and protocols available in the research literature! This includes working with people with dementia.

• Reimbursement is not the primary limiting factor. We CAN help people maintain their function if the skills of a therapist are needed.
A Matter of Balance

- Group-based program focused on increasing falls self-efficacy, increasing confidence that falls are controllable, and increasing physical activity levels.

- Group runs 2 hour sessions for 8 weeks, and includes problem-solving discussions, role-playing, exercise, assertiveness training, individual assignments, and lectures.

- Improving falls self-efficacy $\rightarrow$ increased physical activity $\rightarrow$ reduced fall risk and potentially lower readmission rates.
Wii Fit Exergames

• Works on balance & strength by having participants shift weight on platform while performing virtual games.

• Evidence supports use of Wii fit in reducing fall risk in older adults, however needs more research with randomized controlled trials, and larger sample sizes.

• Relatively cost-effective and easy to implement in facilities.

• Motivating for patients who don’t enjoy participating in traditional exercise
Dance Interventions

• Braun (2015) conducted systematic review of dance interventions effect on physical health status of older adults.

• Results showed that dance, regardless of style, can positively influence flexibility, balance, muscle strength, and muscle endurance.

• Benefit: Cost-effective, easy to implement, supported by evidence, and could get people involved who don’t like to participate in traditional exercise programs.
Whole-Body Vibration Training

- RCT study from Alverez-Barbosa (2014) & colleagues showed that Whole-Body Vibration (WBV) training can reduce fall risk in older adults.

- Training consists of using a vibrating balance platform to challenge participants to hold their static positions for a set period of time (e.g., 1 min).

- Tseng (2016) & colleagues conducted RCT that compared WBV training to Visual-Feedback Deprived Whole Body Vibration training (VFDWBV) group, as well as control group.

- Results: Rates of hospital visits for services related to falls were 0% for both WBV training groups at 6 month follow-up.
Otago Exercise Program

- An in home falls prevention program.
- 17 strength and balance exercises
- An 8 weeks to 6 month exercise program
SAIL

Sail
Active
&
Independent
for
Life
Resources


Resources

  [http://dx.doi.org/10.1136/bmj.c2102](http://dx.doi.org/10.1136/bmj.c2102)

  [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4748931/pdf/medi-95-e2709.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4748931/pdf/medi-95-e2709.pdf)

- Sail fall prevention program

- The Otago exercise program