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Physical Therapy for Older Adults

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Objectives

1. Describe how the physical therapist serves as a movement expert for older adults
2. Identify the role of the physical therapist within the interprofessional team
3. Refer older adults to physical therapy for mobility check-ups
4. Evaluate older adults for fall risk with STEADI

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Physical Therapy

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Physical Therapy Origins



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Physical Therapy Profession Today



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Professional Vision & Mission

Vision:

Transforming society by optimizing movement to improve the human experience.

Mission:

Building a community that advances the profession of physical therapy to improve the health of society.

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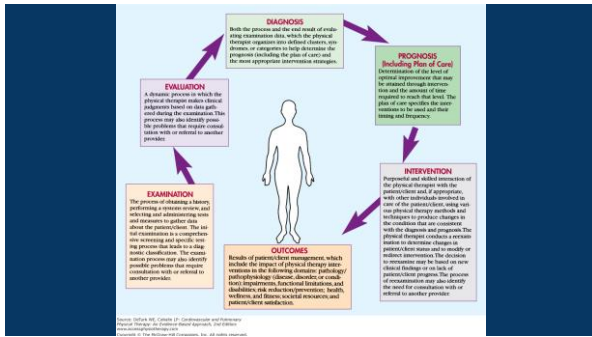
Roles of the Physical Therapist

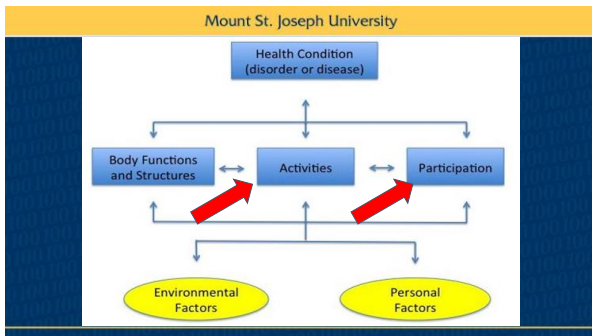


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Practice Settings of the Physical Therapist

- Hospitals and Health Systems
- Inpatient Rehabilitation
- Sub-Acute Rehabilitation
- Specialty Hospitals
- Long Term Care
- Home Health
- Hospice
- Outpatient Clinics
- Wellness/ Prevention/ Sports and Fitness
- Industrial, Workplace, or other Occupational Environments
- Local, State, and Federal Government
- Research Settings





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The Older Adult Patient

Functional Performance Threshold

- Individuals need a minimum of strength, ROM, endurance and balance to perform ADL'S
- Older adults function closer to the threshold
 - they have less reserve to "bounce back" after injury (e.g. CVA, fracture)

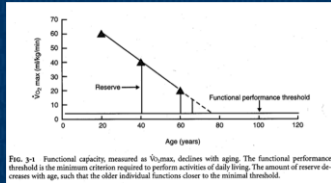


FIG. 3-4 Functional capacity measured as %max declines with aging. The functional performance threshold is the minimum criterion required to perform activities of daily living. The amount of reserve decreases with age, such that the older individual functions closer to the minimal threshold.

From Giacconi A. Geriatric Physical Therapy 2nd Edition, 2002.

Changes in Aging

- Decreased cardiac compensation and responsiveness
- Decreased lung compliance; overall increased work of breathing
- Loss of muscle fibers (sarcopenia), especially Type II
 - Decreased torque, power and endurance
- Reduced motor units
- Cartilage dehydration and fibrillation

Frailty

Fried et al 2001

Frail = 3 or more criteria - Prefrail = 2 criteria

1. Unintentional weight loss of 10# or more in the past year
2. Self-reported exhaustion 3 or more days per week
3. Muscle weakness (grip strength <23# in women, <32# in men)
4. Walking speed <.8m/sec
5. Low level of activity (270kcal in women, 383Kcal in men = sitting quietly or lying down the majority of the day)

Frailty

Abellan et al 2008/Lopez et al 2012

0 = not frail, 5= most frail

Fatigue

Resistance (ability to climb single flight of stairs)

Ambulation (ability to walk 100m)

Illnesses (>5)

Loss of weight (>5%)



Aging, Frailty and Function

- Healthcare expenditures - average cost/person =\$10,739 (CDC/DHHS 2017 data)
- Frailty is related to quality of life, disability and falls
- Sarcopenia is a risk factor for falls
- Sedentary lifestyle is related to dependence in older adults
- Chronic disease is related to NH admission

Aging, Frailty and Function

- A 5-year study of Medicare costs indicates that older adults who are healthy but sedentary average \$6780 more in Medicare costs than those who engage in low-intensity physical activity (National Blueprint Project)
- Regular exercise in frail individuals preserves independence (Jensen et al 2004)
- Screening (balance, endurance, cognition, medications) and wellness program in older adults in assisted living preserved function and reduced falls at 1 year (Hatch and Lusardi 2010)

Why are most older adults less active?

- No perceived need for activity
- Acceptance of current level of function
 - Doing "fine"; getting older, nothing will change that
 - Changes to lifestyle are unnecessary "at my age"
 - Worries about safety with exercise
 - Fears about pain with activity
 - Perception that doctor wouldn't approve

How can a PT help?

Annual Fitness-Mobility Screens in Older Adults

- *American Heart Association (2016)* - cardiorespiratory fitness should be measured in all adults because of its relationship to chronic diseases
- *American College of Sports Medicine - Exercise is Medicine®* Call for health care providers to screen and encourage increased physical activity
- *Centers for Disease Control and American Geriatrics Society* - Screening needed for fall prevention

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Annual Check-up with a PT

- Health Promotion IS a part of physical therapy practice
 - Experts in restoration of function and independence
 - Relationship builders - extended individual patient time
- Preventative health examinations by a PT focus on mobility, balance, and ambulation
- Key to "buy-in" is to link physical activity/mobility with something tangible like not falling, staying at home, being social, being a part of family activities (e.g. grandchildren)

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Annual Check-up with a PT

- Physical activity screening can contribute to continued confidence and motivation (*Resnik et al 2005, Stathokostas 2017*)
- Can be a part of a Comprehensive Geriatric Assessment/ Medicare (B) Annual Wellness visit (*Jang et al 2016*)
- Justification for providing PT in older adults with chronic conditions provided by case law (*Jimmo vs. Sebelius 2013*)

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The Adult Functional Independence Test (A-Fit)

Older adults who participated in screening:

- Were highly satisfied
- Could implement the recommendations
- Thought screen was unique
- 58% said they would participate annually, 36% unsure (*Putthoff 2019/ Lalin&Lewis 2017*)

Test Component	Threshold for Deficits	Percent/Percentage Who Had Deficits
Postural control		
Center of Gravity—distance of back of head to wall when standing	≤40.0 cm	13(20%)
Right leg support wall	≤2 fingers	6(9%)
Thoracic/Lumbar Spine—number of investigator's finger that fits between lowest rib and hip crest		
Handy Strength		
Shoulder Flexion—Active Brachii Test	≥4 in for males or ≥4 in for females on either side	13(20%)
Wrist Flexion—Active Brachii Test	≥8 in	16(24%)
Balance control		
Unilateral Function—Standing with right head turn up and		
left and vice versa		
Static Balance—Single leg stance	Dizziness or loss of balance during testing	6(9%)
Dynamic Balance—Function walking open eyes and then eyes closed	Unable to hold either side for ≥20 s	18(26%)
	Unable to walk 20 m with open eyes or take 5 error free steps with eyes closed	25(37%)
General Mobility		
Stand Up and Go—30 sec get seated	≥10 s	1(2%)
	≤10 sec	1(2%)
Endurance		
6-Minute Walk Test	Use of age- and gender-based normative values	32(11%)
Strength		
ank strength—Hand grip dynamometer assessment	Use of age- and gender-based normative values	13(20%)
Shoulder External Rotator Strength—Dynamometer assessment	Use of age- and gender-based normative values	28(40%)
Plantar Flexor Strength—Single leg heel raise	Use of age- and gender-based normative values	12(17%)
	Use of age- and gender-based normative values	1(2%)
Lower extremity strength—30 s Sit-to-Stand Test	Use of age- and gender-based normative values	3(4%)
Abdominal Strength—Prone planks	Unable to hold for ≥25 s	17(24%)
Back Strength—Back extension	Unable to hold for ≥20 s	25(36%)

When should I refer to a physical therapist?

1. Mobility issues (bed mobility, transfers, gait)
 - o Ambulation <100m
 - o Can't climb flight of stairs
 - o Gait speeds < .8 to 1m/s
2. Balance issues (turns, picking up objects, changing conditions)
 - o STEADI tool - determined "at risk"
 - o Any history of falls or almost falls

When should I refer to a physical therapist?

3. Older adults that are overweight/obese but also have significant co-morbidities
 - o Waist circumference >35 women, >40 men
 - o BMI > 24
4. Patients who are sedentary (little to no activity beyond ADLs) or or lightly active (exercise 1-3 days a week)
5. Patients with chronic disease that can affect safe mobility
 - o e.g. Osteoporosis, Diabetes, CAD, COPD

When should I refer to a physical therapist?

5. Driving assessments
6. Nurse observes reduced participation, especially related to mobility
7. Patients who express a desire to improve function/mobility; want exercise recommendations; are concerned about aging changes

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CDC Centers for Disease Control and Prevention
 CDC® | Springfield, Massachusetts

STEADI - Older Adult Fall Prevention

STEADI Initiative for Health Care Providers

Stopping Elderly Accidents, Deaths & Injuries

Falls are not an inevitable part of aging. There are specific things that you, as their healthcare provider, can do to reduce their chances of falling. STEADI's tools and educational materials will help you to:

- Identify patients at low, moderate, and high risk for a fall;
- Identify modifiable risk factors; and
- Offer effective interventions.

Resources

Materials for Providers: Assessments, fact sheets, case studies, and additional clinical tools.

Training and Continuing Education: Training and resources to help providers put fall prevention strategies into practice.

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TRAINING

CEs available for nurses

Training & Continuing Education

Falls are a common and serious health threat to adults 65 and older. Every year, more than 1 in 4 older adults falls, but more than half of those who fall don't tell their healthcare provider. The Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative was developed in response to this growing health threat. STEADI offers training and resources to help healthcare providers put fall prevention strategies into practice.

Pharmacist Training | **Provider Training** | Webinar

STEADI Older Adult Fall Prevention Online Training for Providers

Providers you can make fall prevention part of your clinical practice with this training and learn to screen patients 65+ for falls, identify risk factors, and offer interventions.

- Continuing Education (CME, CNE, CEU, CECH, CPH) available for this free interactive course.
- Log in to CDC TRAIN or create an account on CDC TRAIN, then search for "STEADI".

Go to CDC TRAIN

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STEADI screening questions

- Do you feel unsteady when standing or walking?
- Do you worry about falling?
- Have you fallen in the past year?
 - if YES, how many times? were you injured?

At risk if YES to any question

Patient fills out or healthcare provider interviews

At risk if ≥ 4

If <4 ask if the patient fell in the last year, if YES, at risk

Circle "Yes" or "No" for each statement below		Why it matters	
Yes (2)	No (0)	I have fallen in the past year.	People who have fallen once are likely to fall again.
Yes (2)	No (0)	I use or have been advised to use a cane or walker to get around safely.	People who have been advised to use a cane or walker may already be more likely to fall.
Yes (1)	No (0)	Sometimes I feel unsteady when I am walking.	Unsteadiness or needing support while walking are signs of poor balance.
Yes (1)	No (0)	I steady myself by holding onto furniture when walking at home.	This is also a sign of poor balance.
Yes (1)	No (0)	I am worried about falling.	People who are worried about falling are more likely to fall.
Yes (1)	No (0)	I need to push with my hands to stand up from a chair.	This is a sign of weak leg muscles, a major reason for falling.
Yes (1)	No (0)	I have some trouble stepping up onto a curb.	This is also a sign of weak leg muscles.
Yes (1)	No (0)	I often have to rush to the toilet.	Rushing to the bathroom, especially at night, increases your chance of falling.
Yes (1)	No (0)	I have lost some feeling in my feet.	Numbness in your feet can cause stumbles and lead to falls.
Yes (1)	No (0)	I take medicine that sometimes makes me feel light-headed or more tired than usual.	Side effects from medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I take medicine to help me sleep or improve my mood.	These medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I often feel sad or depressed.	Symptoms of depression, such as not feeling well or feeling slowed down, are linked to falls.
Total		Add up the number of points for each "yes" answer. If you scored 4 points or more, you may be at risk for falling. Discuss this brochure with your doctor.	

This checklist was developed by the Center for Health Equity Research Education and Promotion and is a validated risk self-assessment tool (Rubenstein et al., J Safety Med, 2011; 42:344-350). Adapted with permission of the authors.

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If at risk, refer to a physical therapist

We can evaluate using common tests like

1. Timed up and go
2. 30 second chair rise
3. 4 stage balance test
4. Gait speed

...and intervene with a planned program using community resources and other healthcare professionals

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Gait Speed (10m walk test)

A vital sign:

- **How fast you walk predicts how long you live**
 - o Gait speed had a consistent predictive survival effect across age and gender (the faster you walked, the longer you lived)
 - o 9 year survival rates: $<.6m/sec = 26\%$, $>1.0m/sec = 76\%$
 - o Those who walked $<.6m/sec$ were not independent
 - o Virtually no individual who walked >1.0 m/sec was dependent
 - o Walking at less than $1m/sec$ seems to be a natural cutoff for health and function and is a great goal (at minimum) for healthy older adults

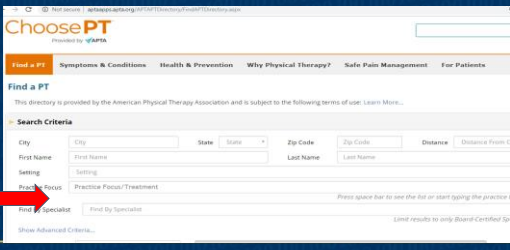
(Studenski et al 2003, 2008, 2011)

Practical Considerations

Referral to PT Services

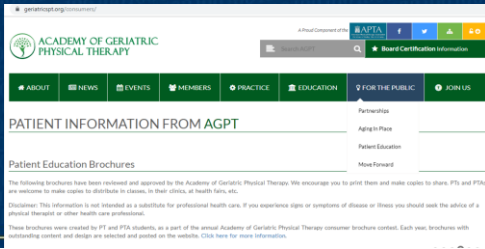


Finding a PT



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PT Referral Resources



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Limitations to Referrals



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PT's and the Interprofessional Team



Options for Additional Services

- Cash Based Clinics
- Pro-Bono Services
- Telehealth Services
- Non-Therapy Options
 - Community Health and Prevention Services



<http://www.shutterstock.com/1000000000/1000000000>

Concluding Thoughts



Thank you!
Questions?

Additional Resources

1. Chodzko-Zajko, W. J. (2014). *ACSM's exercise for older adults*. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins.
2. World Health Organization. *International Classification of Functioning Disability and Health (ICF). Classification 2018*: <http://www.who.int/classifications/icf/en/>. Accessed March 10, 2018.
3. Centers for Disease Control (CDC). *STEADI: older adult fall prevention*. <https://www.cdc.gov/steady/index.html>. Updated January 31, 2019. Accessed August 2, 2019.
