USC Emeriti Center Wellness Event: Physical Therapy Workshop

Today’s agenda: Introduction

- Physical therapy faculty introductions
- What does it mean to be “healthy”?
- Is “healthy aging” possible?
- Overview of the four break-out sessions (you will have time to attend three).
- Question & Answer session
Today’s agenda: Breakout sessions
Choose THREE to attend (Each session will be 30 minutes):

- CARDIOVASCULAR EXERCISE
- BALANCE TRAINING & FALLS RISK REDUCTION
- MUSCLE STRENGTHENING & FLEXIBILITY
- POSTURE & BODY MECHANICS

Today’s agenda: Conclusion

- How can a physical therapist help you age with optimal health and function?
- Question & Answer session
- Complete feedback form
Physical Therapy Faculty Introductions

Geoff Cariker, PT, DPT, GCS (geoffry.cariker@med.usc.edu)
Janelle Gilmer, PT, DPT, GCS (janelle.gilmer@med.usc.edu)
Kimiko Yamada, PT, DPT, OCS, ATC, CLT, CSCS (kimiko.yamada@med.usc.edu)
Noriko Yamaguchi, PT, DPT, GCS, CSCS (noriko.yamaguchi@med.usc.edu)

http://pt.usc.edu/

What does it mean to be “healthy”? 

World Health Organization (WHO) definition of health:

“Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”

World Health Organization
Is “healthy aging” possible?

- Bone mass peaks by approximately age 30 and then exponentially declines with age (~0.5-1% loss per year).
- Women typically experience a rapid decline in bone mass with menopause due to decreased estrogen (~1-1.5% loss per year).
- Bone loss occurs due to bone resorption being greater than bone formation, causing thinning and increased porosity of bone.
Normal muscle tissue changes with aging

- Muscle strength typically peaks at ~age 30
- Starting at ~age 50, strength declines at 15% per decade and accelerates to 30% per decade at ~age 70. (McLean and Kiel, 2015)
- Muscular power is lost ~2x as quickly as muscular strength (Skelton et al 1994)
- An increase in type II (slow twitch) fibers and a decrease in elasticity of muscle tissues are all normal tissue-level changes in muscle as we age.

Normal joint changes with aging

- Unlike in muscle or bone, there is little to no turnover in adult joint cartilage cells.
- Joint cartilage cell density can decrease up to 30% between ages 30 to 70.
- Decreased water content and changes in the cartilage matrix also contributes to thinning of articular cartilage with normal aging.
Normal cardiovascular changes with aging

- Heart size remains the same
- Heart wall thickens, leading to decreased blood flow
- Blood vessels become stiffer, leading to high blood pressure

Normal pulmonary changes with aging

- Chest wall becomes stiff
- Lungs become stiff
- Postural changes
- Decreased secretion clearance
- Decreased cough reflex
Normal balance changes with aging

- Preference to use vision (even though vision also declines with age!)
- Preference to use the hips to help with postural control and not the ankle

Postural Changes with aging

Changes in alignment:
- Decreased vertical height
- Increased hip & knee flexion
- Increased forward head posture
- Increased thoracic kyphosis (& possible increased scoliosis)
- Change in lordotic curve
- Osteoporosis/vertebral compression fractures

Changes in function:
- Altered scapular and glenohumeral joint kinematics
- Balance disturbances
- Decreased pain thresholds
- Altered respiratory capacity
- Altered temporomandibular joint kinematics

Image taken from: http://www.wastrongbones.org/Resources/Pictures/osteo.jpg
Is “healthy aging” possible?

- Normal tissue changes that occur with aging do not necessarily need to negatively impact your physical, mental, and social well-being!
- Preventing the rate of decline is key!

![Graph showing level of function over time/age with healthy lifestyle & behaviors]

Overview of Breakout Sessions

Choose THREE to attend (Each session will be 30 minutes):

- CARDIOVASCULAR EXERCISE (Dr. Cariker)
- BALANCE TRAINING & FALLS RISK REDUCTION (Dr. Yamaguchi)
- MUSCLE STRENGTHENING & FLEXIBILITY (Dr. Yamada)
- POSTURE & BODY MECHANICS (Dr. Gilmer)
CARDIOVASCULAR EXERCISE

In this session you will...

1) Perform the “Step in Place Test” to assess your functional cardiovascular fitness

2) Review the American Heart Association recommendations for cardiovascular exercise in older adults

3) Discuss strategies to create a sustainable cardiovascular fitness program.

BALANCE TRAINING & FALLS RISK REDUCTION

In this session you will...

1) Perform the “4-Stage Balance Test” and components of the Functional Gait Assessment to assess your current balance performance.

2) Review the American College of Sports Medicine recommendations for balance training in older adults

3) Discuss strategies to help create a safe and fun balance training program to reduce falls risk.
MUSCLE STRENGTHENING & FLEXIBILITY
In this session you will...
1) Perform the “Chair Stand Test” to assess your lower body functional strength and the “Chair Sit and Reach” to test your lower body flexibility.
2) Review the American College of Sports Medicine guidelines for resistance training and stretching in older adults.
3) Discuss strategies on how to incorporate muscle conditioning and flexibility training into your fitness routine.

POSTURE & BODY MECHANICS
In this session you will...
1) Learn about appropriate postural alignment in sitting and standing.
2) Perform a posture assessment and the “Back Scratch Test” for your posture.
3) Review some basic exercises to help with postural alignment, awareness, and endurance.
4) Discuss body mechanics with common daily tasks such as lifting from the floor, carrying, pushing, pulling, lowering to the floor, and getting up from the ground.
5) Discuss exercise ideas to help with you optimize your body mechanics.
Questions?

Breakout session locations

CARDIOVASCULAR EXERCISE = ROOM 108
BALANCE TRAINING & FALLS RISK REDUCTION = ROOM 104
MUSCLE STRENGTHENING & FLEXIBILITY = The Fishbowl
POSTURE & BODY MECHANICS = Kilgore Chapel
Conclusion

- How can a physical therapist help you age with optimal health and function?
- Question & Answer session
- Complete feedback form

What do physical therapists do?

The American Physical Therapy Association’s vision statement for the physical therapy profession:

"Transforming society by optimizing movement to improve the human experience."

- Physical therapists are trained to evaluate and treat physical impairments in body structure and function and limitations in functional activities in order to improve the ability of the patient to fulfill meaningful life roles.
- Physical therapists are also trained to promote health and wellness in their patients to prevent decline or disease progression and to maintain optimal function well-being.
When should you see your physical therapist?

- You are experiencing joint or muscle pain
- You feel that you have poor balance or have a fear of falling
- You notice changes in your walking or your ability to move around the house or community
  - Slower, more cautious walker or increased difficulty walking & talking or multi-tasking.
  - Increased difficulty rising from a standard height chair.
  - Increased fatigue with your usual physical activity.

Additional USC programs for you!

**Geriatric Assessment Program (GAP)**
- A multidisciplinary & comprehensive assessment for older adults through the Department of Family Medicine (year long)
- Talk to Dr. Noriko Yamaguchi for details

**Senior Fitness Testing**
- Performed yearly at the USC Physical Therapy School (end of July)
- Talk to Dr. Geoff Cariker for details

**Geriatric Community Exercise Class**
- Individualized exercise program through the USC Physical Therapy Associates (starts in September)
- Talk to Dr. Noriko Yamaguchi for details
Questions?

References


Schoeber ET. Lectures from PT 549L: Clinical Exercise Physiology. 2014.