Strength and Balance: Theory Behind the Exercises

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Chapter 3A
Impaired Balance:
What are the consequences?

- Increased risk for falls
- Reduced functional independence
Balance Changes Due to Increasing Age

1) Motor systems
2) Sensory systems
3) Cognitive systems
Motor Systems

- Controls all voluntary movements
- Part of our Nervous System

As we age:

- ↓ muscle response
- ↓ ability to adjust to responses
- ↑ uncertainty of responses
- ↑ dependence on arms
Sensory Systems

- Knowing where the body is in space and the direction of motion
- Also part of our nervous system
- ↓ function in vision, hearing and touching
- ↓ taste and smell
Cognitive Systems

- Balance requires your attention
- ↓ overall attention capacity
- ↓ ability to allot required attention when performing multiple tasks
Components of a SAIL class

- Warm Up
- Aerobics
- Balance exercises (Mandatory)
- Strength exercises (Mandatory)
- Stretching and Education

WABSS
Warm-Up

- Gradually increases circulation
- Gradually increases heart rate
- Prepares the body for more vigorous exercise
- Reduces the risk of injury
- (In older adults, sudden vigorous work can strain the heart)
Aerobics

- Increases the heart rate and breathing rate for an extended period of time.
- “Cardiovascular” because it makes the heart and blood system work harder.
- Recommendations:
  - 30 minutes, moderate intensity, 5 days/week
  - Or
  - 20 minutes, vigorous intensity, 3 days/week
Balance Exercises (Mandatory)

- Dynamic balance exercises followed by static balance exercises
- Allows heart rate to gradually decrease
  (abrupt ending of strenuous exercise can strain the heart)
- Reduces risk of injury due to falls
- Maintains independence
Strength Exercises (Mandatory)

*Muscle strength and endurance decline significantly with advancing age.*

- Slows bone loss; delays onset of osteoporosis
- Decreases likelihood of fractures due to osteoporosis
- Decreased risk of falling
  (stronger muscles = improved balance)
Strength Exercises (Mandatory)

- Increased activity level
  (stronger muscles = increased energy)
- Improves flexibility
  (weight training uses full range of movement)
- Controls weight
  (exercise burns calories)
- Lose inches
  (tighter muscles = trimmer body)
Stretching and Education

*Changes in elasticity and compliance of connective tissue as we age, lead to decreased flexibility and range of motion.*

- Maintaining good flexibility is an important part of remaining independent
- Helps to reduce chronic pain in joints and muscles
- Recommendation: 10-30 seconds for each stretch and 3-4 repetitions for each stretch
Stretching and Education, cont.

- Older adults actually read written information
- Older adults need general health, health care, and falls prevention information
- Falls prevention information can be difficult to find
- 79% of older adults will make changes to reduce their risk of falling if given the correct information from a professional
THANK YOU