

Physical fitness assessment for Older Adults Promoting Healthy Aging Through Safe and Effective Exercise

Intended Learning Outcome

- To describe the importance of physical fitness for older adults (65+ years)
- To identify the benefits: Mobility, independence, fall prevention, chronic disease management
- To identify the key components of fitness assessment and training

Why Assess Older Adults Physical Fitness?



Identify strengths and limitations



Establish baseline fitness levels



Personalize exercise programs



Monitor progress and adjust interventions

Components of Physical Fitness Assessment

Cardiorespiratory Endurance (e.g., 6-Minute Walk Test)

Muscular Strength & Endurance (e.g., Chair Stand Test, Handgrip Strength)

Flexibility (e.g., Sit-and-Reach Test)

Balance & Mobility (e.g., Timed Up-and-Go Test, Single-Leg Stance)

Body Composition (e.g., BMI, Waist Circumference)

1. Cardiorespiratory Endurance

- Aerobic capacity is crucial for daily activities like walking, climbing stairs, and reducing fatigue.

Tests:

- **6-Minute Walk Test (6MWT):** Measures distance walked in 6 minutes. Normative values vary by age and gender (e.g., 400–700 meters for healthy older adults).

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Equipment: Stopwatch, measuring tape, cones (for walk tests).

2. Muscular Strength and Endurance

- Strength preserves independence (e.g., carrying groceries, standing from a chair).
Tests:
- **30-Second Chair Stand Test:** Counts full stands from a seated position. Norms: 12–17 reps (60–69 years), 10–15 reps (70+ years) 712.
- **Arm Curl Test (30 seconds):** Uses dumbbells (5 lbs for women, 8 lbs for men). Norms: 14–21 curls (60–69 years) 16.
- **Handgrip Strength:** Dynamometer measures overall strength and predicts frailty 11.
Equipment: Chair (17" height), dumbbells, dynamometer.

3. Flexibility

- Maintains range of motion for tasks like bending or reaching.

Tests:

- **Chair Sit-and-Reach Test:** Measures lower-body flexibility (distance from toes).
Norms: -5 to +5 cm for men, +2 to +8 cm for women 16.
- **Back Scratch Test:** Assesses shoulder flexibility (distance between fingers).
Norms: -10 to +5 cm 13.
Equipment: Ruler, chair.

4. Balance and Mobility

- Prevents falls, the leading cause of injury in older adults 49.

Tests:

- **Timed Up-and-Go (TUG):** Time to rise, walk 8 feet, and return. Scores: <10 sec (low risk), >14 sec (high risk) 1116.
- **Single-Leg Stance Test:** Hold balance for ≥ 10 seconds; <5 sec indicates risk 4.
- **Berg Balance Scale:** 14-item scale (sitting, standing, reaching) 6.

Equipment: Stopwatch, chair, tape measure.

5. Body Composition

- Obesity or sarcopenia impacts mobility and metabolic health.

Tests:

- **BMI & Waist Circumference:** BMI 18.5–24.9 kg/m²; waist <35" (women), <40" (men) 713.
- **Bioelectrical Impedance (BIA):** Estimates muscle vs. fat mass (if equipment available).



**SENIOR FITNESS TEST
(FULLERTON
FUNCTIONAL FITNESS
TEST)**



BERG BALANCE SCALE



**30-SECOND CHAIR
STAND TEST**



GAIT SPEED TEST



**BORG RATING OF
PERCEIVED EXERTION
(RPE)**

Exercise Principles for Older Adults

FITT-VP Principle:

Frequency: 3–5 days/week (aerobic), 2–3 days/week (strength)

Intensity: Moderate (e.g., Borg RPE 4–6/10)

Time: 20–30 min/session (adjust based on ability)

Type: Aerobic, strength, flexibility, balance

Volume & Progression: Gradual increases

ACSM recommendation; 2015

Training Recommendations

- **Aerobic Exercise:** Walking, swimming, cycling
- **Resistance Training:** Light weights, resistance bands
- **Flexibility:** Yoga, dynamic stretches
- **Balance Training:** Tai Chi, heel-to-toe walk
- **Neuromotor Exercises:** Coordination drills

Safety Considerations

- Medical clearance if needed
- Warm-up and cool-down
- Avoid high-impact or high-risk movements
- Monitor for dizziness, pain, or shortness of breath
- Hydration and proper footwear

Adaptations for Common Conditions

- **Arthritis:** Low-impact exercises, ROM activities
- **Osteoporosis:** Avoid forward bending, focus on posture
- **Hypertension:** Monitor intensity, avoid straining
- **Diabetes:** Monitor blood glucose, balance activity with meals

Case study

- **Mrs. Evelyn Carter (Age 72)**
 - **Health Status:** Mild arthritis, slightly overweight, occasional dizziness.
 - **Lifestyle:** Mostly sedentary; stopped driving recently due to poor night vision.
 - **Primary Concerns:**
 - "I feel unsteady when walking, especially on uneven sidewalks."
 - "I want to keep living independently but worry about falling."
 - "I miss socializing since my friends moved away."
- Design an exercise program for Mr Carter after physical fitness assessment.

References

- ACSM Guidelines for Older Adults
- National Institute on Aging (NIA) Exercise Guides.
- Cossio-Bolaños, Marco, et al. "Functional fitness benchmark values for older adults: a systematic review." *Frontiers in Public Health* 12 (2024): 1335311.

Thank You

