Frailty and the Physical Therapist: Assessment and Evidence-Based Therapy Interventions for the Frail Individual Supplemental Packet and References
Table 8. Frailty Questionnaire*

1. Weight loss: "In the last year, have you lost more than 10 pounds unintentionally (i.e., not due to dieting or exercise)?"
   - yes   - no  If yes, then frail for weight-loss criterion.

2. Exhaustion: Using the Center for Epidemiological Studies depression questionnaire, the following 2 statements are read: (1) I felt that everything I did was an effort. (2) I could not get going. The question is asked "How often in the last week did you feel this way?"
   0 = rarely or none of the time (less than 1 day)
   1 = some or a little of the time (1 to 2 days)
   2 = a moderate amount of the time (3 to 4 days)
   3 = most of the time
   Response. Subjects answering "2" or "3" to either of these questions are categorized as frail by the exhaustion criterion.

3. Walk Time:

<table>
<thead>
<tr>
<th>Cutoff for Time to Walk</th>
<th>Cutoff for Time to Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td><strong>Women</strong></td>
</tr>
<tr>
<td>Height ≤173 cm</td>
<td>Height ≤159 cm</td>
</tr>
<tr>
<td>≥7 seconds (0.65 m/sec)</td>
<td>≥7 seconds</td>
</tr>
<tr>
<td>Height &gt;173 cm</td>
<td>Height &gt;159 cm</td>
</tr>
<tr>
<td>≥6 seconds (0.76 m/sec)</td>
<td>≥6 seconds</td>
</tr>
<tr>
<td>Time ______ seconds.</td>
<td></td>
</tr>
</tbody>
</table>

If it takes the person longer than thresholds listed above, score 1 point for frail.

4. Grip Strength: (self-reported height: _______ self-reported weight: _______)

<table>
<thead>
<tr>
<th>Cutoff for Grip Strength (kg)</th>
<th>Cutoff for Grip Strength (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td><strong>Women</strong></td>
</tr>
<tr>
<td>BMI ≤24</td>
<td>BMI ≤23</td>
</tr>
<tr>
<td>≤29</td>
<td>≤17</td>
</tr>
<tr>
<td>BMI 24.1–26</td>
<td>BMI 23.1–26</td>
</tr>
<tr>
<td>≤30</td>
<td>≤17.3</td>
</tr>
<tr>
<td>≤30</td>
<td>≤18</td>
</tr>
<tr>
<td>BMI &gt;28</td>
<td>BMI &gt;29</td>
</tr>
<tr>
<td>≥32</td>
<td>≥21</td>
</tr>
</tbody>
</table>

5. Physical Activity: based on the short version of the Minnesota Leisure Time Activity Questionnaire, men with less than 383 kcal per week are frail and women with less than 270 kcal per week are frail.

Number of frailty criterion: ________ 3/5 = frail and 2/5 = pre-frail

*Data from Fried, et al.*
†BMI indicates body mass index.

Listed below are a series of Leisure Time Activities. Related activities are grouped under general headings. Please read the list and check "YES" in column 3 for those activities which you have performed in the last 12 months, and "NO" in column 2 for those you have not. Do not complete any of the other columns.

For Clinic Personnel Use Only

<table>
<thead>
<tr>
<th>ACTIVITY (1)</th>
<th>DID YOU PERFORM THIS ACTIVITY?</th>
<th>MONTH OF ACTIVITY</th>
<th>AVERAGE NUMBER OF TIMES PER MONTH</th>
<th>TIME PER OCCASION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
</tr>
</tbody>
</table>

SECTION A. Walking and Miscellaneous
- 010 Walking for Pleasure
- 020 Walking to Work
- 030 Using Stairs When Elevator is Available
- 040 Cross Country Hiking
- 050 Back Packing
- 060 Mountain Climbing
- 115 Bicycling to Work and/or for Pleasure
- 125 Dancing Ballroom, Square and/or Disco
- 135 Dancing, Aerobic, Ballet
- 140 Horseback Riding

SECTION B. Conditioning Exercise
- 150 Home Exercise
- 160 Health Club Exercise
- 180 Jog/Walk Combination
- 200 Running
- 210 Weight Lifting

SECTION C. Water Activities
- 220 Water Skiing
- 235 Sailing in Competition
- 250 Canoeing or Rowing for Pleasure
- 260 Canoeing or Rowing in Competition
- 270 Canoeing on a Camping Trip
- 280 Swimming (at least 50 ft.) at a Pool
- 295 Swimming at the Beach
- 310 Scuba Diving

SECTION D. Winter Activities
- 340 Snow Skiing, Downhill
- 350 Snow Skiing, Cross Country
- 360 Ice (or Roller) Skating
- 370 Sledding or Tobogganing

SECTION E. Sports
- 390 Bowling
- 400 Volley Ball
- 410 Table Tennis
- 420 Tennis, Singles
- 430 Tennis, Doubles

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### Frailty and Physical Therapy

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Figure 2. Algorithm summarizing the assessment and management of falls. Reprinted with permission from the American Geriatrics Society, British Geriatrics Society, and the American Academy of Orthopedic Surgeons Panel on Falls Prevention. Copyright 2001, Blackwell Publishing.
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### Geriatric Depression Scale (short form)

**Instructions:** Circle the answer that best describes how you felt over the past week.

1. Are you basically satisfied with your life?    yes  no
2. Have you dropped many of your activities and interests?    yes  no
3. Do you feel that your life is empty?    yes  no
4. Do you often get bored?    yes  no
5. Are you in good spirits most of the time?    yes  no
6. Are you afraid that something bad is going to happen to you?    yes  no
7. Do you feel happy most of the time?    yes  no
8. Do you often feel helpless?    yes  no
9. Do you prefer to stay at home, rather than going out and doing things?    yes  no
10. Do you feel that you have more problems with memory than most?    yes  no
11. Do you think it is wonderful to be alive now?    yes  no
12. Do you feel worthless the way you are now?    yes  no
13. Do you feel full of energy?    yes  no
14. Do you feel that your situation is hopeless?    yes  no
15. Do you think that most people are better off than you are?    yes  no

**Total Score**

---

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Geriatric Depression Scale (GDS)
Scoring Instructions

*Instructions:* Score 1 point for each bolded answer. A score of 5 or more suggests depression.

1. Are you basically satisfied with your life? yes no
2. Have you dropped many of your activities and interests? yes no
3. Do you feel that your life is empty? yes no
4. Do you often get bored? yes no
5. Are you in good spirits most of the time? yes no
6. Are you afraid that something bad is going to happen to you? yes no
7. Do you feel happy most of the time? yes no
8. Do you often feel helpless? yes no
9. Do you prefer to stay at home, rather than going out and doing things? yes no
10. Do you feel that you have more problems with memory than most? yes no
11. Do you think it is wonderful to be alive now? yes no
12. Do you feel worthless the way you are now? yes no
13. Do you feel full of energy? yes no
14. Do you feel that your situation is hopeless? yes no
15. Do you think that most people are better off than you are? yes no

A score of $\geq 5$ suggests depression

*Total Score*

---

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The Warning Signs of poor nutritional health are often overlooked. Use this checklist to find out if you or someone you know is at nutritional risk.

Read the statements below. Circle the number in the yes column for those that apply to you or someone you know. For each yes answer, score the number in the box. Total your nutritional score.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have an illness or condition that made me change the kind and/or amount</td>
<td>2</td>
</tr>
<tr>
<td>of food I eat.</td>
<td></td>
</tr>
<tr>
<td>I eat fewer than 2 meals per day.</td>
<td>3</td>
</tr>
<tr>
<td>I eat few fruits or vegetables, or milk products.</td>
<td>2</td>
</tr>
<tr>
<td>I have 3 or more drinks of beer, liquor or wine almost every day.</td>
<td>2</td>
</tr>
<tr>
<td>I have tooth or mouth problems that make it hard for me to eat.</td>
<td>2</td>
</tr>
<tr>
<td>I don’t always have enough money to buy the food I need.</td>
<td>4</td>
</tr>
<tr>
<td>I eat alone most of the time.</td>
<td>1</td>
</tr>
<tr>
<td>I take 3 or more different prescribed or over-the-counter drugs a day.</td>
<td>1</td>
</tr>
<tr>
<td>Without wanting to, I have lost or gained 10 pounds in the last 6 months.</td>
<td>2</td>
</tr>
<tr>
<td>I am not always physically able to shop, cook and/or feed myself.</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Your Nutritional Score. If it’s —**

0-2  **Good!** Recheck your nutritional score in 6 months.

3-5  **You are at moderate nutritional risk.**

See what can be done to improve your eating habits and lifestyle. Your office on aging, senior nutrition program, senior citizens center or health department can help.

Recheck your nutritional score in 3 months.

6 or more  **You are at high nutritional risk.**

Bring this checklist the next time you see your doctor, dietitian or other qualified health or social service professional. Talk with them about any problems you may have. Ask for help to improve your nutritional health.

Remember that warning signs suggest risk, but do not represent diagnosis of any condition. Turn the page to learn more about the Warning Signs of poor nutritional health.

These materials developed and distributed by the Nutrition Screening Initiative, a project of:

- American Academy of Family Physicians
- The American Dietetic Association
- National Council on the Aging, Inc.
Modified - Physical Performance Test

Testing Protocol: Administer the test as outlined below. Subjects are given up to two chances to complete each item. Assistive devices are permitted for tasks 6 – 9.

1. Standing Static Balance
   - **Feet together:** “Stand still with your feet together as demonstrated for 10 seconds.”
   - **Semi Tandem:** “Stand with the heel of one foot placed to the side of the 1st toe of the opposite foot for 10 seconds.” Subject chooses which foot goes forward.
   - **Tandem:** “Stand with the heel of one foot directly in front of the other foot, for 10 seconds. Subject chooses which foot goes forward.

2. Chair Rise: Use a straight back chair with a solid seat that is 16” high. Ask participant to sit on the chair with arms folded across their chest. “Stand up and sit down as quickly as possible 5 times, keeping your arms folded across your chest.” Stop timing when the participant stands the 5th time.

3. Book Lift: Place a Physician’s Desk Reference Book (1988 PDR: 5.5 lbs) or other heavy book on a table in front of the patient. Ask the patient, when given the command “go” to place the book, as quickly as they can, on a shelf above shoulder level. Time from the command “go” until when the book is resting on the shelf. Starting position is with their hands at their side.

4. Put on and remove a jacket: If the subject has a jacket or cardigan sweater, ask them to remove it. If not, give the subject a lab coat. Ask the subject, on the command “go” to quickly put the coat on completely such that it is straight on their shoulders and then remove the garment completely. Time from the command “go” until the garment has been completely removed. Hint: it is more accurate to time putting on the garment, then pause (pause the stopwatch), then time taking off the garment.

5. Pick up a penny from floor: Place a penny approximately 12 inches from the patient’s foot on the dominant side. Ask the patient, on the command “go” to pick up the penny from the floor and stand up. This is to be done as quickly as they can; yet allowing for safety and comfort. Time from the command “go” until the subject is standing erect with a penny in hand. If dexterity is a problem, a pen or similar lightweight object can be used.

6. Turn 360 degrees: Ask the subject to turn 360 degrees “as quickly as you can, as you feel comfortable and safe”. Evaluate using the scale on PPT scoring sheet. Additional data: count the number of steps required.

7. 50-foot walk test: Bring subject to start on a 50 foot walk test course (25 feet out and 25 feet back) and ask the subject, on the command “go” to walk as quickly as they can to the 25-foot mark and back. Time from the command “go” until the starting line is crossed on the way back.

8. Stairs: Take vital signs. Bring subject to foot of stairs (nine to 12 steps) and ask subject, on the command “go” to begin climbing up to a total of 4 flights stairs (as quickly as they can, as they feel comfortable and safe) or until they feel tired and wish to stop. Before beginning this task, alert the subject to the possibility of developing chest pain or shortness of breath and inform the subject to tell you if any of these symptoms occur. You will walk with the subject. Time from the command “go” until the subjects’ first foot reaches the top of the first flight of stairs. Go on to record the number of flights (maximum is four) completed (up and down is one flight). Provide a chair for resting when completed, so vital signs can be taken immediately post.

<table>
<thead>
<tr>
<th>Scoring:</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>32/36 - 36/36</td>
<td>not frail</td>
</tr>
<tr>
<td>25/36 - 31/36</td>
<td>mild frailty</td>
</tr>
<tr>
<td>17/36 - 24/36</td>
<td>moderate frailty</td>
</tr>
<tr>
<td>&lt; 17/36</td>
<td>unlikely to be able to function in the community</td>
</tr>
</tbody>
</table>


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## Modified - Physical Performance Test

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10s.</td>
<td>10s.</td>
<td>□ 10s.</td>
<td>□ 4</td>
<td></td>
</tr>
<tr>
<td>10s.</td>
<td>10s.</td>
<td>□ 3-9.9s.</td>
<td>□ 3</td>
<td></td>
</tr>
<tr>
<td>10s.</td>
<td>10s.</td>
<td>□ 0-2.9s.</td>
<td>□ 2</td>
<td></td>
</tr>
<tr>
<td>□ 0-9s.</td>
<td>Un able</td>
<td>Un able</td>
<td>□ 0</td>
<td></td>
</tr>
</tbody>
</table>

### Time | Scoring values | Score
---|----------------|--------
| ≤ 10s. | 10s. | 0-9s. | Unable |
|       |      |       |       |

<table>
<thead>
<tr>
<th>2. Chair rise</th>
<th>≤ 11 sec = 4</th>
<th>11.1--14 sec = 3</th>
<th>14.1--17 sec = 2</th>
<th>&gt;17 sec = 1</th>
<th>unable = 0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≤ 2 sec = 4</td>
<td>2.1--4 sec = 3</td>
<td>4.1--6 sec = 2</td>
<td>&gt;6 sec = 1</td>
<td>unable = 0</td>
</tr>
<tr>
<td>3. Lift a book and put it on a shelf</td>
<td>≤ 10 sec = 4</td>
<td>10.1--15 sec = 3</td>
<td>15.1--20 sec = 2</td>
<td>&gt;20 sec = 1</td>
<td>unable = 0</td>
</tr>
<tr>
<td></td>
<td>≤ 2 sec = 4</td>
<td>2.1--4 sec = 3</td>
<td>4.1--6 sec = 2</td>
<td>&gt;6 sec = 1</td>
<td>unable = 0</td>
</tr>
<tr>
<td>4. Put on and remove a jacket</td>
<td>≤ 10 sec = 4</td>
<td>10.1--15 sec = 3</td>
<td>15.1--20 sec = 2</td>
<td>&gt;20 sec = 1</td>
<td>unable = 0</td>
</tr>
<tr>
<td></td>
<td>≤ 2 sec = 4</td>
<td>2.1--4 sec = 3</td>
<td>4.1--6 sec = 2</td>
<td>&gt;6 sec = 1</td>
<td>unable = 0</td>
</tr>
<tr>
<td>5. Pick up a penny from floor.</td>
<td>≤ 10 sec = 4</td>
<td>10.1--15 sec = 3</td>
<td>15.1--20 sec = 2</td>
<td>&gt;20 sec = 1</td>
<td>unable = 0</td>
</tr>
<tr>
<td></td>
<td>≤ 2 sec = 4</td>
<td>2.1--4 sec = 3</td>
<td>4.1--6 sec = 2</td>
<td>&gt;6 sec = 1</td>
<td>unable = 0</td>
</tr>
<tr>
<td>6. Turn 360 degrees</td>
<td>Discontinuous steps = 0</td>
<td>Continuous steps = 2</td>
<td>Unsteady (grabs, staggers) = 0</td>
<td>Steady = 2</td>
<td></td>
</tr>
<tr>
<td>7. 50-foot walk test.</td>
<td>≤ 15 sec = 4</td>
<td>15.1--20 sec = 3</td>
<td>20.1--25 sec = 2</td>
<td>&gt;25 sec = 1</td>
<td>unable = 0</td>
</tr>
<tr>
<td>8. Climb one flight of stairs.</td>
<td>≤ 5 sec = 4</td>
<td>5.1--10 sec = 3</td>
<td>10.1--15 sec = 2</td>
<td>&gt;15 sec = 1</td>
<td>unable = 0</td>
</tr>
<tr>
<td>9. Climb stairs.</td>
<td>Number of flights of stairs up and down (maximum 4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TOTAL SCORE

<table>
<thead>
<tr>
<th>9-item score</th>
<th>/36</th>
</tr>
</thead>
</table>

---

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Berg Balance Scale

1. SITTING TO STANDING
INSTRUCTIONS: Please stand up. Try not to use your hand for support.
( ) 4 able to stand without using hands and stabilize independently
( ) 3 able to stand independently using hands
( ) 2 able to stand using hands after several tries
( ) 1 needs minimal aid to stand or stabilize
( ) 0 needs moderate or maximal assist to stand

2. STANDING UNSUPPORTED
INSTRUCTIONS: Please stand for two minutes without holding on.
( ) 4 able to stand safely for 2 minutes
( ) 3 able to stand 2 minutes with supervision
( ) 2 able to stand 30 seconds unsupported
( ) 1 needs several tries to stand 30 seconds unsupported
( ) 0 unable to stand 30 seconds unsupported

3. SITTING WITH BACK UNSUPPORTED BUT FEET SUPPORTED ON FLOOR OR ON A STOOL
INSTRUCTIONS: Please sit with arms folded for 2 minutes.
( ) 4 able to sit safely and securely for 2 minutes
( ) 3 able to sit 2 minutes under supervision
( ) 2 able to sit 30 seconds
( ) 1 able to sit 10 seconds
( ) 0 unable to sit without support 10 seconds

4. STANDING TO SITTING
INSTRUCTIONS: Please sit down.
( ) 4 sits safely with minimal use of hands
( ) 3 controls descent by using hands
( ) 2 uses back of legs against chair to control descent
( ) 1 sits independently but has uncontrolled descent
( ) 0 needs assist to sit

5. TRANSFERS
INSTRUCTIONS: Arrange chair(s) for pivot transfer. Ask subject to transfer one way toward a seat with armrests and one way toward a seat without armrests
( ) 4 able to transfer safely with minor use of hands
( ) 3 able to transfer safely definite need of hands
( ) 2 able to transfer with verbal cuing and/or supervision
( ) 1 needs one person to assist
( ) 0 needs two people to assist or supervise to be safe

6. STANDING UNSUPPORTED WITH EYES CLOSED
INSTRUCTIONS: Please close your eyes and stand still for 10 seconds.
( ) 4 able to stand 10 seconds safely
( ) 3 able to stand 10 seconds with supervision
( ) 2 able to stand 3 seconds
( ) 1 unable to keep eyes closed 3 seconds but stays safely
( ) 0 needs help to keep from falling

7. STANDING UNSUPPORTED WITH FEET TOGETHER
INSTRUCTIONS: Place your feet together and stand without holding on.
( ) 4 able to place feet together independently and stand 1 minute safely
( ) 3 able to place feet together independently and stand 1 minute with supervision
( ) 2 able to place feet together independently but unable to hold for 30 seconds
( ) 1 needs help to attain position but able to stand 15 seconds feet together

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8. REACHING FORWARD WITH OUTSTRETCHED ARM WHILE STANDING
INSTRUCTIONS: Lift arm to 90 degrees. Stretch out your fingers and reach forward as far as you can. (Examiner places a ruler at the end of fingertips when arm is at 90 degrees. Fingers should not touch the ruler while reaching forward. The recorded measure is the distance forward that the fingers reach while the subject is in the most forward lean position. When possible, ask subject to use both arms when reaching to avoid rotation of the trunk.)
( ) 4 can reach forward confidently 25 cm (10 inches)
( ) 3 can reach forward 12 cm (5 inches)
( ) 2 can reach forward 5 cm (2 inches)
( ) 1 reaches forward but needs supervision
( ) 0 loses balance while trying/requires external support

9. PICK UP OBJECT FROM THE FLOOR FROM A STANDING POSITION
INSTRUCTIONS: Pick up the shoe/slipper, which is place in front of your feet.
( ) 4 able to pick up slipper safely and easily
( ) 3 able to pick up slipper but needs supervision
( ) 2 unable to pick up but reaches 2-5 cm (1-2 inches) from slipper and keeps balance independently
( ) 1 unable to pick up and needs supervision while trying
( ) 0 unable to try/needs assist to keep from losing balance or falling

10. TURNING TO LOOK BEHIND OVER LEFT AND RIGHT SHOULDERS WHILE STANDING
INSTRUCTIONS: Turn to look directly behind you over toward the left shoulder. Repeat to the right
( ) 4 looks behind from both sides and weight shifts well
( ) 3 looks behind one side only other side shows less weight shift
( ) 2 turns sideways only but maintains balance
( ) 1 needs supervision when turning
( ) 0 needs assist to keep from losing balance or falling

11. TURN 360 DEGREES
INSTRUCTIONS: Turn completely around in a full circle. Pause. Then turn a full circle in the other direction.
( ) 4 able to turn 360 degrees safely in 4 seconds or less
( ) 3 able to turn 360 degrees safely one side only 4 seconds or less
( ) 2 able to turn 360 degrees safely but slowly
( ) 1 needs close supervision or verbal cuing
( ) 0 needs assistance while turning

12. PLACE ALTERNATE FOOT ON STEP OR STOOL WHILE STANDING UNSUPPORTED
INSTRUCTIONS: Place each foot alternately on the step/stool. Continue until each foot has touch the step four times.
( ) 4 able to stand independently and safely and complete 8 steps in 20 seconds
( ) 3 able to stand independently and complete 8 steps in > 20 seconds
( ) 2 able to complete 4 steps without aid with supervision
( ) 1 able to complete > 2 steps needs minimal assist
( ) 0 needs assistance to keep from falling/unable to try

13. STANDING UNSUPPORTED ONE FOOT IN FRONT
INSTRUCTIONS: Place one foot directly in front of the other. If you feel that you cannot place your foot directly in front, try to step far enough ahead that the heel of your forward foot is ahead of the toes of the other foot.
( ) 4 able to place foot tandem independently and hold 30 seconds
( ) 3 able to foot ahead independently and hold 30 seconds
( ) 2 able to take small step independently and hold 30 seconds
( ) 1 needs help to step but can hold 15 seconds
( ) 0 loses balance while stepping or standing

14. STANDING ON ONE LEG
INSTRUCTIONS: Stand on one leg as long as you can without holding on.
( ) 4 able to lift leg independently and hold > 10 seconds
( ) 3 able to lift leg independently and hold 5-10 seconds
( ) 2 able to lift leg independently and hold ≥ 3 seconds
( ) 1 tries to lift leg unable to hold 3 seconds but remains standing independently.
( ) 0 unable to try of needs assist to prevent fall

( ) TOTAL SCORE (Maximum = 56)
6-Minute Walk Test

Description: The 6-Minute Walk test is a measure of endurance.

Equipment: stopwatch, rolling tape measure, track/loop walkway

Instructions: Monitor vital signs before and after each test if indicated. Assure patient safety throughout the test. Give the same verbal instructions each time. "When I say 'go', I want you to walk around this [track]. Keep walking until I say 'stop' or until you are too tired to go any further. If you need to rest, you can stop until you feel ready to go again. I am interested in measuring how far you can walk. You can begin when I say 'go'." Time the subject for 6 minutes, then say 'stop'. Measure the distance walked.

Stop testing based on the following criteria:
1. C/o angina symptoms (chest pain or tightness)
2. Any of the following symptoms:
   a. Light-headedness
   b. Confusion
   c. Ataxia, staggering unsteadiness
   d. Pallor
   e. Cyanosis
   f. Nausea
   g. Marked dyspnea
   h. Unusual fatigue
   i. Signs of peripheral circulatory insufficiency
   j. Claudication or other significant pain
   k. Facial expressions signifying distress
3. Abnormal cardiac responses
   a. Systolic blood pressure drops > 10 mmHg
   b. Systolic blood pressure rises < 250 mmHg
   c. Diastolic blood pressure rises to > 120 mmHg
   d. Heart rate drops more than 15 beats per minute (given the subject was walking the last minutes of the test versus resting)

Notify physician if test is terminated for any of the above reasons

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender (N)</th>
<th>Mean</th>
<th>SD</th>
<th>Normal Range (2SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-69</td>
<td>Male (15)</td>
<td>572</td>
<td>92</td>
<td>388-756</td>
</tr>
<tr>
<td></td>
<td>Female (22)</td>
<td>538</td>
<td>92</td>
<td>354-722</td>
</tr>
<tr>
<td>70-79</td>
<td>Male (14)</td>
<td>527</td>
<td>85</td>
<td>357-697</td>
</tr>
<tr>
<td></td>
<td>Female (22)</td>
<td>471</td>
<td>75</td>
<td>321-621</td>
</tr>
<tr>
<td>80-89</td>
<td>Male (8)</td>
<td>417</td>
<td>73</td>
<td>271-563</td>
</tr>
<tr>
<td></td>
<td>Female (15)</td>
<td>392</td>
<td>85</td>
<td>222-562</td>
</tr>
</tbody>
</table>


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Timed “Up and Go”*

Directions:
The timed “Up and Go” test measures, in seconds, the time taken by an individual to stand up from a standard arm chair (approximate seat height of 46 cm, arm height 65 cm), walk a distance of 3 meters (approximately 10 feet), turn, walk back to the chair, and sit down. The subject wears their regular footwear and uses their customary walking aid (none, cane, walker). No physical assistance is given. They start with their back against the chair, their arms resting on the armrests, and their walking aid at hand. They are instructed that, on the word “go” they are to get up and walk at a comfortable and safe pace to a line on the floor 3 meters away, turn, return to the chair and sit down again. The subject walks through the test once before being timed in order to become familiar with the test. Either a stopwatch or a wristwatch with a second hand can be used to time the trial.

Instructions to the patient:
“When I say ‘go’ I want you to stand up and walk to the line, turn and then walk back to the chair and sit down again. Walk at your normal pace.”

Variations:
You may have the patient walk at a fast pace to see how quickly they can ambulate. Also you could have them turn to the left and to the right to test any differences.


TIMED REPEATED CHAIR RISE x 5 (SIT-to-STAND)
Description: Measures the ability of person to rise from a chair repeatedly. Repeated chair rise test requires lower limb strength, range of motion, balance, and endurance. For the sit-to-stand test with five repetitions subjects are asked to rise from a standard height (43 cm) chair without armrests, five times, as quickly as possible with their arms folded across their chest.
Equipment: Stopwatch and standard height chair.
Tester Notes: Check that the client can successful perform a single chair rise before you test repeated chair rise.
Instructions: I’d like you to fold your arms across your chest and when I say go, I want you to stand up and sit down as quickly as you can five times in row.

Record the time from the command “go” until the participant is in the final seated position, and the number of completed chair rises (0-5)

Cut point Greater than 15 sec indicator for fall risk
The Groningen Activity Restriction Scale (GARS)

Overview: The Groningen Activity Restriction Scale (GARS) is a general disease-independent instrument for measuring disability. It can be used to monitor a patient over time and to identify potential interventions. The authors are from the University of Groningen in The Netherlands.

Statements about Activities of Daily Living (ADL) - Can you fully independently:

(1) dress yourself?
(2) get in and out of bed?
(3) stand up from sitting in a chair?
(4) wash your face and hands?
(5) wash and dry your whole body?
(6) get on and off the toilet?
(7) feed yourself?
(8) get around in the house (if necessary with a cane)?
(9) go up and down the stairs?
(10) walk outdoors (if necessary with a cane)?
(11) take care of your feet and toenails?

Statements about Instrumental Activities of Daily Living (IADL) - Can you fully independently:

(12) prepare breakfast or lunch?
(13) prepare dinner?
(14) do "light" household activities (for example, dusting and tidying up)?
(15) do "heavy" household activities (for example, mopping, cleaning the windows, and vacuuming)?
(16) wash and iron your clothes?
(17) make the beds?
(18) do the shopping?

<table>
<thead>
<tr>
<th>Response (based on what the patient is able to do)</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes I can do it fully independently without any difficulty</td>
<td>1</td>
</tr>
<tr>
<td>Yes I can do it fully independently but with some difficulty</td>
<td>2</td>
</tr>
<tr>
<td>Yes I can do it fully independently but with great difficulty</td>
<td>3</td>
</tr>
</tbody>
</table>
No I cannot do it fully independently. I can only do it with someone’s help. 4
No I cannot do it at all. I need complete help. 4

where:

- The point assignment for needing complete help was originally 5 points but was switched to 4 because only a few patients selected this response. There may be an argument to keep it at 5 points.
- The response is based on what the patient is able to do rather than what s/he usually does.

total score = SUM(points for all 18 items)

Interpretation:

- minimum score: 18
- maximum score: 72
- The higher the score the greater the disability.

References:

References

6. Diener DD, Mitchell JM. Impact of a Multifactorial Fall Prevention Program upon Falls of Older Frail Adults Attending an Adult Health Day Care Center. Topics in Geriatric Rehabilitation 2005;21(3):247-257

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