# The Annual Mobility Assessment Manual

A Guide to Implementation into Practice

Version 2

Created by the American Physical Therapy Association Academy of Geriatric Physical Therapy, Annual Mobility Assessment Task Force

APTA Geriatrics

An Academy of the American Physical Therapy Association

Manual Last Updated on January 7, 2026

# Contents

## The Purpose of the Manual

This manual is designed to be a resource for physical therapists implementing the Annual Mobility Assessment in various clinical settings. The manual provides a description of all the components of the Annual Mobility Assessment, instructions on how to review the results with participants and best practices in providing recommendations. The manual also provides a brief history of the Annual Mobility Assessment and description of the work currently being done. The manual is reviewed annually, updated as needed, and shared through the American Physical Therapy Association Academy of Geriatric Physical Therapy (APTA-G).

## History of the Annual Mobility Assessment

In February 2023, Michelle Lusardi, PT, PhD, FAPTA gave the Carole B Lewis Distinguished Lecture at the American Physical Therapy Association (APTA) Combined Sections Meeting (CSM). During her talk, she challenged the APTA-G to explore a yearly mobility wellness visit, similar to Medicare's Annual Wellness Visit. This visit would use established measures to identify individuals who are demonstrating changes in mobility and would benefit from early interventions. As part of this challenge, she encouraged the collection of "big data" to develop normative data around the measures.

Later that year, a proposal was put forward by APTA-G to form an exploratory task force on an annual mobility screen. The task force began meeting in June 2023 and in September 2023 brought forward the following recommendations

1. The Mobility Screen should be an Academy priority.
2. At this point, resources should not be spent on creating a national registry.
3. The Academy should support the development and implementation of a standardized mobility screening format.
4. The Academy should support research examining the long term benefits of the Mobility Screen.
5. The Academy should tap into the excitement of its membership and support from other organizations that champion the rights and care of older adults.
6. The Academy should provide funding and support for continued work around the Mobility Screen.

The Board of Directors approved the recommendations of the task force and work began on the screen. In August 2024 a mobility screen protocol and a research agenda was released and published on the APTA Geriatrics website.[1] Work began on a special interest paper addressing the rationale for the Annual Mobility Screen and a paper describing it's development.

In 2025, the task force renamed the Annual Mobility Screen to the Annual Mobility Assessment. This change was done to better reflect to the level of analysis and interpretation that goes into reviewing the results and providing recommendations. This was also based on recommendations from the APTA Academy of Private Practice. They shared that Medicare

does not reimburse for screens, so having screen in the title would be an automatic denial of coverage in the future.

The feasibility of the Annual Mobility Assessment protocol has been pilot tested at four sites (SC, IA, LA, WA), in both one-on-one and "round robin" formats. Participants greatly valued both the testing process and educational/counselling component. The process and resources have been "tweaked" based on these experiences and feedback to improve efficiency.

Throughout 2025 task force members conducted continuing education events at the national and regional level to promote the Annual Mobility Assessment. Four $500 grants were approved by the APTA-G to encourage the implementation of the Annual Mobility Assessment in the community.

A data repository was created in 2025 for the sharing of deidentified participants' Annual Mobility Assessment results. This repository serves as a place to create a large data set which will provide investigators a mechanism to address aspects of the Annual Mobility Assessment Research Agenda.

In 2025 a paper was published describing the development of the Annual Mobility Assessment.[2] Various research studies were started in 2025 along with the submission of research grants to study the Annual Mobility Assessment. A perspective paper is Physical Therapy Journal was published in 2026. Further manuscripts and publications will hopefully follow in 2026.

In February 2026, task force members will be conducting a pre-conference course on the Annual Mobility Assessment at APTA Combined Sections Meeting.

## Annual Mobility Assessment Task Force

The Annual Mobility Assessment Task Force has been in existence since 2023. The vision and mission of the task force are as follows.

**Vision**: Annual mobility assessment for older adults is an essential service that optimizes the experience of aging and benefits those we serve, APTA Geriatrics, and the profession by empowering older adults to move, engage, and live well.

**Mission**: APTA Geriatrics aims to establish the feasibility, efficacy, and value of promoting annual mobility wellness assessment for older adults within the profession and to consumers, other healthcare providers, and third-party payors.

As of December 2025, task force members include the following APTA-G members:

| Name | Place of Employment |
|---|---|
| Emma M. Baillargeon, PT, DPT, PhD | Northwestern University<br>Chicago, IL |
| Michelle G. Criss, PT, DPT, PhD | Chatham University<br>Pittsburgh, PA |
| Jason Dring, PT, DPT | George Washington University<br>Washington DC |
| Sterling Eckert, PT, DPT | Angelo State University<br>San Angelo, TX |
| Sheryl Flynn PT, PhD | Blue Marble Health<br>Altadena, CA |
| Victoria Hamby, PT, DPT | University of Louisiana Monroe<br>Monroe, LA |
| Mary Horoshak, PT, DPT | Augustana University<br>Sioux Falls, SD<br>Presbyterian Homes & Services<br>Arden Hills, MN |
| Brigid Lucas, PT, DPT | Medical University of South Carolina<br>Charleston, SC |
| Michelle M. Lusardi, PT DPT PhD FAPTA | Sacred Heart University (Emeritus faculty)<br>Fairfield CT |
| Patricia Noritake Matsuda, PT, PhD, DPT | University of Washington<br>Seattle, WA |
| Joseph Podurgiel, PT, DPT | Maine Strong Balance Centers<br>Saco, ME |
| Michael L Puthoff, PT, PhD – Task Force Chair | St. Ambrose University<br>Davenport, IA |
| Julie Rekant, PT, DPT, PhD | University of Maryland<br>Baltimore, MD |

| | |
|---|---|
| David Taylor, PT, DPT | Mercer University<br>Atlanta, GA |

Previous task force members include the following.

| **Name** | **Place of Employment** |
|---|---|
| Cheyenne Brown, PT, DPT | Forsyth Medical Center<br>Winston-Salem, NC |
| Paras Goel, PT, DPT, MBA, MEd | California |
| Sharada Sripathi Govindu, PT, DPT | University of California Irvine Health<br>Orange, CA |
| Katherine June, PT, DPT | Lincoln Memorial University<br>Knoxville, TN<br>Mission Hospital<br>Asheville, NC |
| Dalerie Lieberz, PT, PhD | The College of St. Scholastica<br>Duluth, MN |

## Resources for the Annual Mobility Assessment

There are various resources beyond this manual to help with the implementation and support of the Annual Mobility Assessment.

### APTA-G Website

All the forms, instructions, normative data, and other useful documents can be found on the APTA-G website at https://aptageriatrics.org/annual-mobility-assessment/. This website is used as location to share the most up to date information on the Annual Mobility Assessment. This is open access and available to all.

### APTA-G Community Page

The Annual Mobility Assessment Community page is a place to ask questions, share resources, and connect with others who are using the Annual Mobility Assessment. Members have posted sample exercise programs, shared pictures of their events, Microsoft forms and Excel sheets to help with data collection, and promotional materials. This is a members only benefit for APTA-G. Members can find the Community page at https://aptageriatrics.thinkific.com/products/communities/Annual-Mobility-Assessment

### Current Publications

Lusardi MM, Hamby V, Eckert S, Dring J. Development of an annual mobility screen for preclinical mobility limitation: Test selection and interpretation guidelines. *Journal of the American Geriatrics Society.* 2025. 10.1111/jgs.19521

Criss MG, Dring J, Eckert S, Puthoff ML. Perspective from the APTA Academy of Geriatric Physical Therapy: The Need for Annual Mobility Assessment for Aging Adults. *Physical Therapy.* 2026. In press.

## Overall Goals of the Annual Mobility Assessment

The goals of Annual Mobility Assessment are to:

1. quickly and accurately identify community living older persons with preclinical and overt mobility limitation
2. quickly and accurately identify those at risk for functional decline, falls, and other adverse health outcomes, and,
3. using best practices in behavioral science, provide individualized interpretation of test results and recommendations for follow-up care based on normative data by gender and age.

### Identifying Preclinical Mobility Limitations

Mobility limitation has traditionally been described as having difficulty walking several blocks (1/4 mile) or managing one flight of stairs.[3] A recent consensus conference and scoping review defined preclinical mobility limitation (PCML) as a transitional stage and early indicator that disablement has begun.[4] Signs of PCML include subtle changes in functional performance (e.g., taking longer to complete tasks, minor almost imperceptible modifications of task completion strategies, greater effort and fatigue during task performance, among others). Many factors contribute to difficulty moving around and engaging in functional activities in later life: the cumulative and interactive impact of age-related physiological changes and habitual level of activity over one's lifetime[5], environmental characteristics and demands (complexity, accessibility, etc.)[6], and the impact of both acute and chronic health conditions.[7] Research suggests that, for persons with PCML, interventions to improve mobility and increase activity level will sustain function and slow rate of functional decline.[8] Identification of those with PCML is an important and necessary endeavor.[4]

Physical Therapists, as movement specialists, are uniquely qualified to assess for early indicators of mobility difficulties.[9,10] The Annual Mobility Assessment protocol assists physical therapists in taking a leadership role in assessing mobility and risk of functional decline.[11] Functional decline is clearly associated with difficulty performing ADLs, impaired mobility, and risk of falls.[12,13] Such decline also impacts a person's quality of life, mental health, risk of isolation, comorbidity burden, and risk of cognitive decline.[12] Early identification of mobility decline is likely to lead to interventions to improve function and reduce the rate of decline and risk of negative health outcomes.

## Populations for the Annual Mobility Assessment

The Annual Mobility Assessment was designed for individuals aged 55 years and older. This population was chosen based on literature showing that those in their 50's with lower levels of physical fitness and mobility were more likely to have mobility issues. Through early detection, future PCML and mobility losses could be prevented.

The measures within the Annual Mobility Assessment have been tested and validated in this population and in most cases, there is normative data for these age groups. While the Annual Mobility Assessment could be used in individuals younger than 55, there will likely be a ceiling effect in many of the outcome measures. There are other appropriate assessment tools and for the population younger than 55.

While the Annual Mobility Assessment testing protocol may be useful in monitoring change in function within other older adult populations (e.g., those residing in long term care or assisted living facilities; those hospitalized with serious illness, surgery, or trauma; those with history of neurological conditions that impact mobility; those with cognitive decline of all kinds), it is important to note that the normative values used to interpret performance are based on community-living samples.

## Connection of the Annual Mobility Assessment to the Geriatric 5Ms

*Mobility* is one of the five key components of the Geriatric 5Ms, an integrative bio-psychosocial model for decision making in patient-centered geriatric health care. The other components include *Mind/Mentation*, *Medication*, *Multi-complexity* (multimorbidity, social support, resources, and living environment) and, most importantly, what *Matters Most* to the aging individual.[14,15] The Movement Framework for Older Adults, another ongoing APTA-G initiative, integrates the 5Ms into the APTA's Patient/Client Management Model of clinical reasoning, using them as a "lens" to identify appropriate tests/measures, identify facilitators and barriers within each 5M component, define a physical therapy mobility-related diagnosis and prognosis, and build a prioritized a plan of care driven by goals led by Matters Most to the individual.[16]

The task force believes that Annual Mobility Assessment can be a key tool in fulfilling the goal of prioritizing health aging, creating age friendly environments, and ensuring older adults have access to care. First and most obviously, the Annual Mobility Assessment is concerned with *mobility* and assesses key tasks through both self-report (PCML questioning about stairs, floor transfers, community mobility as well as falls) and performance (walking, chair transfers, dual task, and obstacle negotiation and directional stepping). As clinicians, PTs can take the performance data collected and combine it with indicators of *multi-complexity* from the intake forms to make recommendations. Most importantly, therapists should link the recommendations to *what matters most* to the person in front of us, using motivational interviewing skills and brief action planning.

## Mindset for the Annual Mobility Assessment

As physical therapists start to implement the Annual Mobility Assessment, they need to view these encounters differently than a typical physical therapy episode of care. Factors to consider include:

- Physical Therapy as Preventive Care – Some individuals may have never been to a physical therapist and others only when they are hurt or injured. During the Annual Mobility Assessment, we need to communicate and project a message that physical therapists have value identifying issues early and providing preventive services. We also need to promote the benefits of the profession so if a person needs follow up assessment and interventions, they want to see another physical therapist in the future.

- Standardization – The Annual Mobility Assessment follows a standardize approach to the questions asked and the assessments completed. It is designed to be done the same way for each person.

- Time – Ideally the Annual Mobility Assessment should take no more than 30 minutes, but there is a learning curve for practitioners, especially in how to discuss the results and make recommendations. It is important to stay on task during performance of the Annual Mobility Assessment.

- Limited Follow Up – In most situations, the participant will not return to therapy for another year or maybe not all. The therapist needs to think about what you can accomplish in one session and what the participant can reasonably act on.

- Recommendations – Recommendations need to be simple with some guidance on how to advance/progress them after some time. The recommendations need to be something the person can do with limited feedback. The educational resources, handouts, and activity-related recommendations of the education/counseling component of the Annual Mobility Assessment are likely more impactful than the testing protocol itself.

## Components of the Annual Mobility Assessment

The Annual Mobility Assessment involves multiple components. Participants fill out an intake form prior to the start of the session. Performance testing is conducted and then the results are reviewed. Recommendations are made based on the participant's goals. Each component is described below.

### How Long Should the Annual Mobility Assessment Take to Complete?

The task force's goal was to develop a tool that could be completed in 30 minutes or less. Pilot work done using a one on one testing format has shown that participants complete the intake form in about 7 minutes. Reviewing the intake form and completing the physical performance tests takes approximately 10-15 minutes. Following the proposed method of discussing results and providing recommendations (described later in the manual) takes approximately 10-15 minutes. Pilot work using a round robin format can take a little longer than 30 minutes depending on the number of individuals being tested concurrently and the set-up of the event.

Task force members would stress that the Annual Mobility Assessment is different from a typical physical therapy visit. The therapist needs to triage the participant and stay focused on assessing mobility and providing some guidance based on the results. Pilot work found that therapists have the most difficulty staying on schedule during the review of results and in counseling/making recommendations.

Physical therapists are encouraged to practice the Annual Mobility Assessment prior to community wide implementation, especially in the review of results and recommendations.

### Intake Form

The Intake Form collects self-report information around overall health, mobility, falls risk, physical activity, and health status. The intake form can set the stage for discussion of results by allowing the participant to identify areas of concern. The form also can identify the need for a referral.

General Health Status[17] – This question is taken from the SF-36 and asks about self-assessment of health.

Changes in Medical Status, Health, and Mobility – These questions are asked to identify any significant events that could signal a change in mobility.

Physical Activity Vital Sign[18] – A series of questions about aerobic, strength, and balance training done on a weekly basis. These questions come from the American College of Sports Medicine Physical Activity Vital Signs initiative and recommended modifications for older adults.

STEADI Three Key Questions[19] – These three questions come from the Center for Disease Control and Prevention Stopping Elderly Accidents, Deaths, and Injuries (STEADI) program. Answering yes to one or more of these questions indicates the need for further assessment around falls.

Self-Report Performance[20] – A series of questions asking about ability to walk long distances, ascend steps, and get off the floor. Participants are asked if they have difficulty doing these activities and if they have altered their performance. A positive response to any of these questions indicates a possible PCML.

Mobility Concerns – Participants are asked about their mobility concerns. This can be helpful to address what matters most to the participant and possible goals they may have.

Number of Medications and Supplements – This can provide insight around falls risk factors. A medication review is not part of the mobility assessment process, but if a participant presents with other falls risk factors, the number of medications being 4 or more might provide more support for a referral to another healthcare provider to assess medication interactions.

Medical History and Recent Procedures – This information can be used to identify any red flags to testing or issues that may affect mobility.

## Performance Testing

The Annual Mobility Assessment involves six performance measures. These measures represent tasks and activities meaningful to older adults. They require little equipment or space, can be completed quickly, have normative data for interpretation, and are responsive to changes in performance over time. Based on time, distance, or repetitions, they have minimal measurement error and greater accuracy than ordinal scales. They are also associated with physical frailty and difficulty with activities of daily living (ADLs), as well as other negative health outcomes.[21,22] Below is a list of the performance measures and what they address.

1. Self-Selected/usual gait speed – Overall functional capacity.
2. Fast gait speed – Functional reserve.
3. 30-Second Sit to Stand Test – Lower extremity muscle performance.
4. Four Square Step Test – Ability to move in multiple directions and clear obstacles.
5. Timed Up and Go – General mobility.
6. Timed Up and Go Cognitive – Capacity to divide attention/dual tasking.

## Review of Results

At the completion of testing, results should be reviewed with the participant. Report cards are available on the APTA-G website to help with this discussion. The following areas should be addressed:

- Review physical performance test results. This can be done by comparing their results to normative data based on age and sex. Performance can also be compared to established cut scores for adverse events. Results can be compared to previous sessions if the

participant is returning for annual appointment. Normative data, cut scores for adverse events, and minimal detectable change (MDC) or minimal clinical important difference (MCID) values can be found on the interpretation guide on the APTA-G website.

- Compare Physical Activity Vital Signs (participant completed on the intake form) results to established the Physical Activity Guidelines.
- If the participant answered yes to one or more of the 3 key questions from the STEADI (participant completed on the intake form), falls risk can be discussed, especially if physical performance measures also indicate a concern.
- If the participant reported mobility concerns, or reported difficulty or changes in activity, this can also be discussed.

### Recommendations

Based on the responses on the intake form, physical performance test results, and the participant's interest in change, the physical therapist may make recommendations. These recommendations can include one or more of the following:

- Prescribe one or two focused exercises to address a specific area of concern or performance.
- Encourage an increase in physical activity levels (aerobic, strength, and/or balance).
- Refer to a community based physical activity program.
- Refer to a physical therapist for a complete evaluation and development of a plan of care
- Refer to another healthcare provider as indicated.

## Details on Intake Form

In this section, instructions will be provided in how to interpret responses from the intake form.

### Physical Activity Vital Sign[23]

The Physical Activity Vital Sign is a standard tool created by the ACSM Exercise is Medicine campaign. The ACSM recommends that these questions are asked in every patient encounter. The primary questions are…

1. For an average week in the last 30 days, how many days per week did you engage in moderate to vigorous physical activity (like walking fast, running, jogging, dancing, swimming, biking, or other activities that cause a light or heavy sweat)?
2. On those days that you engage in moderate to vigorous physical activity, on average, how many minutes per day do you engage in physical activity at this level?

Then the two values are multiple together to see how close they are to the national guidelines of 150 minutes of moderate or 75 minutes of vigorous activity per week.

There are two additional questions suggested as optional questions that have been adopted for the Annual Mobility Assessment.

3. During the past month, how many times per week did you do physical activities or exercises to strengthen your muscles?
4. On average, how many days per week do you perform activities that challenge your balance?

Results can then be compared to recommendations found in the Physical Activity Guidelines for Older Adults or the Physical Activity Guidelines for Adults for those under the age of 65 years. Below are the guidelines that are listed on the report card.

- Some activity is better than none. Sitting less and doing any amount of moderate or vigorous physical activity will benefit your health.
- At least 150 minutes of moderate or 75 minutes of vigorous activity per week. A mix of both moderate and vigorous activity is also acceptable.
- Muscle-strengthening activities that work all major muscle groups on two or more days a week.
- Those 65 years of age or older should engage in activities that challenge balance at least once each week, but those under 65 may also benefit from balance training.

### Stopping Elderly Accidents, Deaths, and Injuries, 3 Key Questions

The STEADI initiative was created for healthcare providers who treat older adults who are at risk of falling, or who may have fallen in the past. The process involves first screening for falls risk and based on the results, acting. One way to screen is through the Three Key Questions taken from the 12 question Stay Independent questionnaire.[19]

1. Do you feel unsteady when standing or walking?
2. Do you worry about falling?
3. Have you fallen in the past year? If yes, how many times and were you injured?

Answering yes to any of these three questions is considered being at risk for a future fall. Further assessment is recommended including evaluation of gait, strength and balance, and review of other falls risk factors such as medication review, home hazard assessment, orthostatic blood pressure, vision check, assessment of footwear, and review of comorbidities.

A referral to another provider may be appropriate if one or more of the key questions is positive and/or there are deficits in physical performance tests.

### What Matter the Most

Mobility and What Matters are two components of Geriatric 5Ms.[15] The Annual Mobility Assessment physical performance tests address mobility. The intake form includes a question about concerns and what participants want to address. The response to these questions can be used to guide recommendations and possible referrals. Feedback from participants in pilot studies suggest if functional performance falls in average range for their age and sex it may be a motivator for increasing physical activity.

## Vital Signs

Assessment of vital signs should be conducted to ensure it is safe for the individual to participate in the Annual Mobility Assessment. If the physical therapist is solely interacting with the participant for the Annual Mobility Assessment, then vital signs should be measured. If the Annual Mobility Assessment is being conducted on an established patient where vitals have previously been measured and hemodynamic status is stable, measuring vital signs is not essential.

| | |
|---|---|
| Overview | to determine if participants are stable enough to participate in testing. |
| Scoring | Systolic pressure and diastolic pressure; resting pulse rate. |
| Equipment | Manual or automatic sphygmomanometer<br>A pulse oximeter can be used for heart rate, but not required, especially if an automatic sphygmomanometer is being used that also measures heart rate. |
| Set-up | Participant should be sitting is a chair, feet flat on the floor, legs uncrossed. The chair should have an arm rest support the arm or the chair should be by a table so the arm can be supported.<br><br>Participants should be sitting for at least five minutes before measuring vital signs. The time it takes go through the intake form and answer any questions should provide enough resting time. |
| Instructions to participant | "I want to take your blood pressure and heart rate to ensure you are safe to participate in the Annual Mobility Assessment. Do you have an arm preference for blood pressure or a reason I should not use one arm such as a mastectomy or lumpectomy. I'm going to support your arm to keep it level with your shoulder while I take your blood pressure.<br><br>Optional: "Now I am going to measure your heart rate with this pulse oximeter by placing it on your finger"<br><br>Optional: "Now I am going to measure your heart rate by touching your wrist and measuring your pulse" |
| Instructions for therapist | Ensure the participant is seated comfortably on a chair, feet flat on the ground (no crossed legs)<br><br>The tester positions the pulse oximeter on the participant's warmest finger and records heart rate and oxygen (O2) saturation on the data form.<br><br>The tester supports the participant's arm (in elbow extension) at 90 degrees shoulder flexion, inflates the BP cuff, slowly deflates it to determine systolic and diastolic pressure, and records the results on the intake form and report card.<br><br>If using an automated cuff, follow the manufacturer's instructions. |

| | |
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| Calculations | The following vital signs should be reasons to postpone testing<br>Resting heart rate >100 bpm,<br>Pulse Oximeter < 90%,<br>Systolic blood pressure < 90 mm Hg or > 180 mm Hg<br>Diastolic blood pressure < 60 mm Hg or > 110 mm Hg<br><br>If testing is postponed for these vital signs, the physical therapist should encourage the participant to follow up with their primary health care provider. Physical therapists should use their clinical judgment if further referrals are necessary. |

## Details on Physical Performance Measures

The six physical performance measures are described below. The Annual Mobility Assessment task force recognizes that different research studies and guidelines may recommend slightly different ways to complete each measure. For fidelity of the Annual Mobility Assessment, physical therapists are encouraged to perform the individual tests in the Annual Mobility Assessment following these directions. If data will be submitted to the Annual Mobility Assessment Repository, this protocol must be followed.

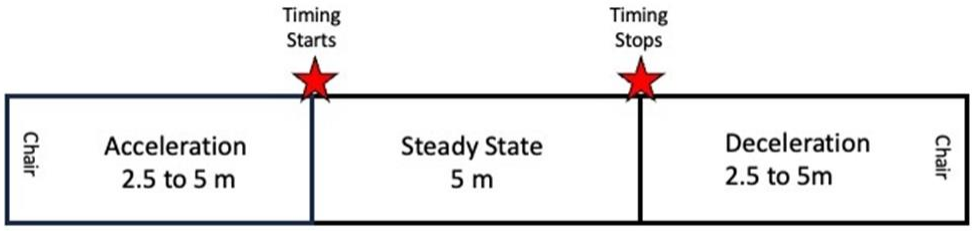
### Safety During Testing

Throughout testing, physical therapists should use their clinical judgment in determining how much supervision and guarding the participant needs during the Annual Mobility Assessment. The therapist should ask if the participant feels safe to complete the testing and always give the participant the option to not complete a test. Participants should be given the option to rest between testing and chairs should be made available. Some participants may need rest breaks and others will be able to complete all six measures without stopping.

A gait belt or safety belt is highly recommended during the Four-Square Step Test and the Timed Up and Go tests. Physical therapists should use their best judgment in requiring a belt during the other aspects of testing. If unlicensed professionals (students) are involved in testing, supervising therapists may decide to require a belt during all testing.

Participants should be encouraged to wear comfortable and supportive shoes. They can use an assistive device that they typically use during the performance tests. Therapists should note the use of assistive device on the data form.

## Usual Gait Speed[24]

| | |
|---|---|
| Purpose | Overall mobility, considered a "vital sign" for older adults and predicts many adverse health outcomes. |
| Equipment | Tape or cones to mark the course.<br>Chairs at the end of course for the participant to sit and rest.<br>Stopwatch or timer that measures to the hundredths place. |
| Set-up | Need at a 10-15 meter length walkway, at least 1 meter wide.<br>Mark the beginning and end of the middle 5 meters of the course for timing purposes with a tape strip or cone.<br>Can then place a marker or chair at the start of the course (2.5-5 meters before the start of timing) and the end of the course (2.5-5 meters after the end of timing).<br>A chair can be placed at either end of the course to allow the participant to rest as need.<br>  <br>**8'2" to 16' 4"** **16' 4"** **8'2" to 16' 4"** |
| Instructions to participant | "The purpose of this test is to measure your typical walking speed. You'll start here (0 meter point) and when I say 'Go', you'll start walking all the way to the last marker/chair (10-15 meters). Walk at the pace that you usually walk and are most comfortable with. You can use your walking aid if you wish. I'll be walking close to you all the way. Do you have questions? Are you ready, start walking" |
| Instructions for therapist | After providing instruction, clarify that the participant understands the instructions to walk all the way to the last marker.<br>Walk slightly behind and next to the participant through the entire test.<br>Start timing as soon as any part of the foot crosses the start line. Stop timing as soon as any part of the foot crosses the stop line.<br>Participants should focus on walking through the stop line, all the way to the end of the course so they do not slow down while timing.<br>Then complete another trial. |
| Scoring and Calculations | Record the time in seconds (to the hundredths place) to ambulate from the start to the stop marker.<br>Calculate gait speed by dividing 5 by the time in seconds.<br>If two measures are used, take the average and record the value in the data sheet. |

## Fast Gait Speed[24]

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|---|---|
| Purpose | Fast walking speed is an indicator of functional reserve. |
| Equipment | Same equipment as usual gait speed. |
| Set-up | Same set up as usual gait speed. |
| Instructions to participant | "The purpose of this test is to measure your fast walking speed. You'll start here (0 meter point) and when I say 'Go', you'll start walking as fast as you safely can all the way to the last marker (10-15 meters). Walk as if you were in a hurry, but don't run. You can use your walking aid if you wish. I'll be walking close to you all the way. Do you have questions? Are you ready, start walking" |
| Instructions for therapist | Same instructions as usual gait speed. |
| Scoring and Calculations | Same calculations as usual gait speed.<br>If two measures are used, take the **fastest** and record the value in the data sheet. |

## 30 Second Sit to Stand[25]

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|---|---|
| Purpose | Assessment of lower extremity muscle performance: strength, power, and endurance. |
| Equipment | Sturdy chair without armrests, seat height 17”<br>Stopwatch or timer that measures to the hundredths place |
| Set-up | Place the chair against the wall or another firm surface for stability |
| Instructions to participant | “This purpose of this test is to evaluate the strength and endurance of your hip, thigh, and lower leg muscles. You’ll sit in the middle of the chair, like this, with your hands resting on the opposite shoulder, crossed at the wrists. Keep your feet flat on the floor and your knees bent at around 90 degrees, your back straight and your arms against your chest. When I say “Go,” stand up all the way, then sit back down again as many times as you can until I tell you to stop. It will be about 30 seconds. Do you have any questions?<br><br>Please do one sit-to-stand-to-sit cycle so I make sure you do it correctly. Are you ready? Ready, Set, Go” |
| Instructions for therapist | Stand next to the participant to guard in case of instability during testing. After giving instructions (and demonstration), begin timing as you say “Go”. The participant only gets one attempt at this test.<br><br>Make sure the participant contacts the chair and stands up completely. Try to minimize over dependence on momentum to stand up. If they are not doing this, give them cues during testing to correct. |
| Scoring and Calculations | If the participant cannot rise without using their arms to push or for momentum, record “0” for the score.<br><br>If the participant stands without using arms, count and record the number of times they come to a full standing in 30 seconds. If more than halfway to a stand at end of test, count it as a stand. |

## Four Square Step Test[26,27]

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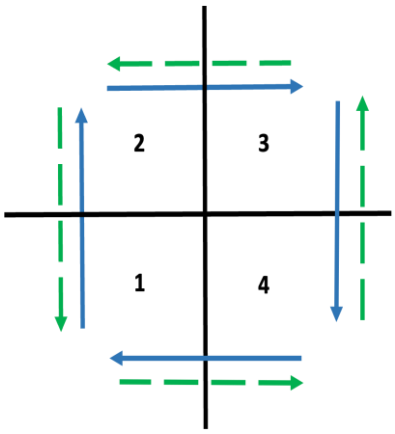
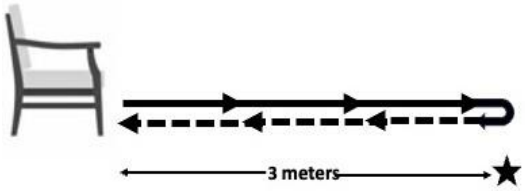
|---|---|
| Purpose | Screening for dynamic balance while stepping in different directions and avoiding low obstacles |
| Equipment | Four straight canes or four 2.5 foot long, ¾ inch diameter PVC pipes. Either put a L-attachment on the end of each pipe or connect each pipe to a 4-way coupler to prevent the pipe from rolling.<br>Stopwatch or timer that measures to the hundredths place.<br>Recommended that a gait belt is used during this test. |
| Set-up | See the below picture. Mark the black lines on the floor with tape so the modified FSST is ready to go. Place the canes or PVC piping on top of the tape to create a cross.<br>  <br>Consider having a chair nearby in case the participant needs to sit down. |
| Instructions to participant | "The aim of the test is to step as fast as possible into each square in the following sequence. Square number 2, 3, 4, 1, 4, 3, 2, and 1. Try to complete the sequence as fast as possible without touching the sticks. Both feet must make contact with the floor in each square. If possible, face forward during the entire sequence" |
| Instructions for therapist | While instructing the patient, demonstrate the movement pattern.<br>The stopwatch starts when the first foot contacts the floor in square 2 and finishes when the last foot comes back to touch the floor in square 1.<br>Give the participant a practice trial to ensure they know the sequence. Then two trials are completed. A trial is repeated if the subject fails to complete the sequence successfully, loses balance, or contacts a cane or stick during the sequence.<br>If the participant shifts the apparatus or cannot clear the PVC pipes during testing repeatedly (use your best judgement), remove the PVC apparatus and use the underlying tape to complete a modified 4SST. Be sure to document on the data form that the m4SST was used. |

| | |
|---|---|
| Scoring and Calculations | The best or fastest of the two trials are recorded.<br><br>If the modified version is used, still record the time, but ensure it is noted on the data form and the report card. Their time is automatically in the red on the report card. This score can be used to document changes over time. At this time there are no normative data for the modified version so the interpretation is based on not being able to perform the FSST. |

## Timed Up and Go[28,29]

| | |
|---|---|
| Purpose | To screen general mobility, ability to change direction |
| Equipment | An armchair with a 42 cm (17 inch) seat height.<br>Tape to mark the end of the course.<br>Stopwatch or timer that measures to the hundredths place.<br>Recommended that a gait belt is used during this test. |
| Set-up | Place a tap line 3 meters (9 ft 8 inches) from the front edge of the chair. A cone should NOT be used as you want the participant to walk to the line and back, not circle around the cone.<br>  |
| Instructions to participant | "This mobility test measures how well you can stand up, walk 3 meters or about 10 feet, turn around, return to the chair, and sit back down again, all things we do during our typical day. You'll start by sitting here with your back touching the back of the chair, your feet on the floor, and your arms resting on the armrests.<br><br>When I say go, stand up, walk as quickly and safely as you can to the line, turn around, walk back to the chair, and sit completely down again. I'll demonstrate the test now. If you need your walking aid, it will be right here for you to use once you are standing.<br><br>Do you have any questions? (Tester clarifies the task procedure as necessary). Are you ready? Ready, Set, Go!" |
| Instructions for therapist | Customary walking aids should be used. Stand next to the participant to guard in case of instability during testing.<br>After giving instructions (and demonstration), begin timing as you say "Go."<br>Stop timing as soon as the participant's buttocks are on the seat.<br>Document the time taken to complete the test on the intake and report card form. |
| Calculations | Allow two attempts and use the fastest for analysis. |

## Timed Up and Go – Cognitive

| | |
|---|---|
| Purpose | To screen general mobility, ability to change direction, and impact of a cognitive task on performance |
| Equipment | Same a Timed Up and Go |
| Set-up | Same a Timed Up and Go |
| Instructions to participant | "This time, you'll repeat the test, but do it while you do some subtraction. I'll give you a number, and you will need to keep subtracting 3 from that number while you move, like this 79, 76, 73, 70, 67, and so on….<br><br>When I say go, stand up, walk as quickly and safely as you can to the line, turn around, walk back to the chair, and sit entirely down again, all the while subtracting your 3s.<br><br>Do you have any questions? (Tester clarifies the task procedure as necessary). The number I'd like you to start subtracting from is 51. Ready, Set, Go! |
| Instructions for therapist | The therapist can pick any number from 20-100 as the starting point. If the participant is returning for a reassessment or the Annual Mobility Assessment is being done in a health fair format where participants can see others do the physical performance tests, it would be best to vary the number used. |
| Calculations | Only one attempt is given. |

## Details on Interpreting Results

The goal of the Annual Mobility Assessment is to identify those with PCML, or subtle changes in activities, so early interventions can be provided and mobility maintained throughout the aging process. Preclinical mobility limitations are identified currently only through self-report. Those who report no difficulty in tasks but changing method, frequency, etc. are considered to have PCML. The Task Force made educated guesses for physical performance measures using age and sex normative data to allow us to give meaningful feedback to participants. The Annual Mobility Assessment process uses age and sex normative values, data on MDC or MCID, and published cut scores for adverse events to guide this process.

### Age and Sex Normative Data

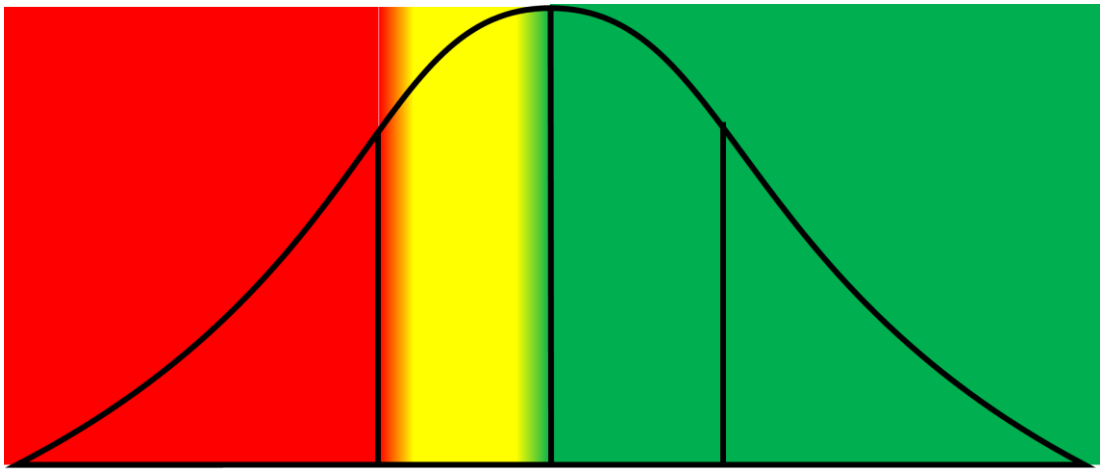
Knowing that advancing age impacts performance, the Annual Mobility Assessment Task Force has opted to use age and sex normative data as the primary driver for discussion of results. In the original release of the Annual Mobility Assessment, the task force created performance interpretation charts for each measure, using 1/2 standard deviation below the mean (approximately 31$^{st}$ percentile) as the threshold for PCML, and a full1 SD below the mean (approximately 16$^{th}$ percentile) as the threshold for overt mobility limitation.[2] . These thresholds were informed by known prevalence of falls and pre-frailty in community living older adults, which range from 25% to -33%.[30,31]

Based on feedback from early users and reviewers of the Annual Mobility Assessment and results of pilot work, the terminology around the thresholds have been adjusted. Instead of labeling a score as a mobility limitation or PCML, results are shared in a simpler green, yellow, and red coding system. This color-coding system is still based on normative data. The below figure outlines this new labeling system.

Green Zone – This represents performance that is around half standard deviation below the mean and higher. The participant's performance is similar to others in the same age range and sex.

Yellow Zone – This represents performance around a half standard deviation below the mean, but above a full standard deviation below the mean. The participant is performing below normative data, which could be an early indicator of mobility changes, but may not be to a level that it is limiting their daily activities.

Red Zone – This represents performance around a full standard deviation below the mean. The participant likely has mobility issues that are limiting daily activities.




In addition to eliminating the labels associated with physical performance measure, exact cut scores are deemphasized. As seen in the figure, there is not a hard line drawn between where red, yellow, and green begins and ends. The colors blur together to reflect the lack of evidence around specific cut points in normative data. If a participant is in the blurred zones on a single test, the therapist should use their clinical judgment and an assessment of the participant's overall performance in all areas to guide recommendations.

### Meaningful Change in Performance Measures

When available, the MDC or MCID values for each performance measure are listed in the interpretation guide. These values represent a change that is greater than the error in the measures or a value that relates to a change that is considered meaningful to the person. These values can be used to educate the participant on meaningful changes each time the Annual Mobility Assessment is conducted. Variation in measures should be expected due to participant and tester factors. If the change is greater than the MCID or MDC, this can be used to show the participant improvements and declines. Changes that are less than the MCID or MDC should be explained as normal variation. The therapist should use their clinical judgement to guide the interpretation of change over time. For example, if the participant shows a decline in performance in multiple tests, but they are all just below the MCID or MDC, this could be a trend to discuss, especially if they are reporting more challenges in self-report activities.

### Adverse Event Cut Scores

While the Annual Mobility Assessment focuses on age and sex normative data to guide interpretation of physical performance tests, therapists should also be aware of published cut scores around adverse events. Those with a gait speed less than 1.0 m/s are at an increased risk of multiple adverse events.[32] For example, an 80 year old female ends up in the green zone with a usual gait speed of 0.90 m/s, but below the

established cut scores for an increased risk of falls, nursing home admissions, and other adverse events. The risk for adverse events should be discussed with the participant even though she scored in the green zone

As the therapist is reviewing results with the participants, it is helpful to keep these established cut scores in mind. When available, cut scores have been integrated into the interpretation guide.

## Putting Together the Results

In its current form, results of the Annual Mobility Assessment do not lead to a composite or overall score. The therapist needs to consider the information provided on the intake form, the results of the performance tests and formulate an assessment and make a clinical decision. At this point the task force does not sufficient evidence to create participant profiles with specific actions to take based on the results. However, the task force has created general classifications with suggested actions. As more research is conducted around the Annual Mobility Assessment, the task force hopes more evidence guides labeling and specific recommendations.

### General Classifications

Below are the general classifications that can be used to summarize results and guide interventions. Participants may not understand the term "preclinical mobility limitation" or "mobility limitation". Alternate language for the review of results are incorporated into each classification.

*Mobility Limitation*

Those who report difficulty in daily activities, have one or performance tests in the red zone, multiple performance tests in the yellow zone, report a history of falls, or a single fall with performance tests in the yellow likely have a mobility limitation. This could be explained to the participant as an indication that mobility problems are present.

*Preclinical Mobility Limitation*

Those who report no difficulty in daily activities, but performance changes or more fatigue in daily activities, have a single performance test in the yellow zone, have a positive answer on the STEADI key questions, they are likely have a PCML. This could be explained to the participant as an indication that mobility problems are developing.

*Preclinical Mobility Limitation Unlikely*

Those who report no difficulty or changes in activities, all performance tests in the green zone, no falls, or concerns about falling are classified as PCML unlikely. This could be explained to the participant as an indication that little to no mobility problems are present.

## Possible Recommendations

Based on the results of the Annual Mobility Assessment, participants can receive a range of recommendations. In general, recommendations could be broken into three categories. There will be some crossover of the three categories for some individuals. You should use your professional judgment to personalize recommendations.

### *Referral to Physical Therapy or Another Healthcare Provider*

This is an individual who falls into the mobility limitation classification or has an unaddressed medical condition that is beyond what can be addressed in the Annual Mobility Assessment or our scope of practice. The individual should receive a full physical therapy evaluation and/or may need to work with their physician or another provider around other issues.

### *Increase in Activity Levels*

This is for participants who may fall into the PCML classification and through physical activity, may improve their mobility without formal therapy services. This may also be for a participant whose mobility is acceptable but are inactive. The promotion of physical activity, even when no mobility test concerns are present, is vital to maintaining overall health. Below are some ways to promote physical activity.

Exercise Snacking – This term refers to increasing physical activity in short bouts throughout the day versus a formal physical activity plan. Examples include a couple of sit to stands throughout the day, getting on and off the floor, taking the steps instead of an elevator, a handful of lunges, or walking around the block. These bouts of activity can be as short as 1-2 minutes. If possible, doing the activity at a high intensity (as quickly as possible) provides additional benefits. (Note: An Exercise Snacking handout has been shared in the APTA Geriatrics member Annual Mobility Assessment Community page.)

Home Exercise Program – The participant may benefit from some exercises listed below to address a certain area. These are only suggestions and there may be others that are more appropriate. Ideally, they are prescribed 1-2 exercises given the short time period for consultation. The therapist should have handouts ready to distribute prior to the visit to help improve efficiency (Note: sample home exercise programs have been shared in the APTA Geriatrics member Annual Mobility Assessment Community page). There may not be time to demonstrate the all the exercises, so making sure they are simple, the directions are clear, and the individual has the capacity to implement the exercises are key.

- Squats, sit to stand exercises
- Ankle strengthening
- Lunging exercises
- Upper extremity strengthening
- Static balance exercises
- Dynamic balance exercises
- Walking program – continuous or interval training
- Stair climbing
- Floor transfers

Evidence-Based Program or Community-Based Exercise Program – These programs can address various types of fitness, mobility, and participant education. Programs can focus on risk factor reduction, falls prevention, improved mobility and education. Programs can be found through various websites such as the National Council on Aging. Therapists should also be familiar with community program offered by Area Agencies on Aging, community centers, Churches, and certain fitness centers.

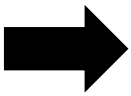
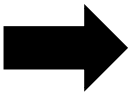
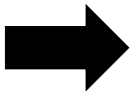
Fitness Center or Gym – Many communities have fitness centers with programming specifically designed for older adults and to address typical mobility concerns. Some participants may not want to attend programming for "older adults" and would benefit from a typical gym or high intensity program. Therapists need to know about gyms that cater to a range of abilities, including age-appropriate programs in the community and trainers that work well with older adults.

Online Programming – Various organizations and trainers have online exercise programs offered both synchronously and asynchronously. Therapists should explore different websites, YouTube channels, and apps in order to make appropriate recommendations. A couple to consider are Heart and Soul Fitness (HASFit) and Senior Fitness with Meredith. (Note: handouts about online exercise programs have been shared in the APTA Geriatrics member Annual Mobility Assessment Community page).

*No Action Necessary*

There will be some participants who are in the PCML unlikely classifications, are meeting all or most of the physical activity guidelines and/or do not have a need for changing their routine and activity levels. These individuals should be congratulated, encouraged to continue their current activities levels, and return next year for a check in.

**Recommended Actions Based on Results of Annual Mobility Assessment**

| Classification | Findings | | Possible Recommendations |
|---|---|---|---|
| Mobility Limitation Likely/ Mobility Problems Present | Self-reported difficulty in activities.<br>**and/or**<br>One or more performance tests in the red zone.<br>**and/or**<br>Multiple performance tests in the yellow zone.<br>**and/or**<br>History of multiple falls.<br>**and/or**<br>A single fall with multiple performance tests in the yellow zone. |  | Referral for a physical therapy evaluation. May receive some counseling to increase physical activity at the therapist's discretion. |
| Preclinical Mobility Limitation Likely/Mobility Problems Developing | No reported difficulty with activity but reports change in method or fatigue<br>**and/or**<br>Single performance test in the yellow zone.<br>**and/or**<br>Positive answer on one of the STEADI questions.<br>**and/or**<br>Below physical activity guidelines. |  | Counseling to increase physical activity levels through various methods.<br><br>1-2 exercises to do at home.<br><br>Referral to a community-based exercise program, fitness center, or online exercise program.<br><br>Physical activity plan worksheet to encourage action. |
| Preclinical Mobility Limitation Unlikely/Little to No Mobility Problems | No reported difficulty or changes in method or fatigue with activity.<br>**and**<br>All performance tests in the green zone.<br>**and**<br>Meeting all or most of the physical activity guidelines. |  | Encourage to continue to be physically active.<br><br>Provide a list of community-based exercise programs and a physical activity plan worksheet if interested in adjusting their programs. |

## How to Discuss Annual Mobility Assessment Results

At the completion of physical performance testing, the process moves onto discussing the results. As you discuss the results, you want the individual to have the autonomy to decide what actions they want to take. Taking an expert or authoritative approach is not likely to lead to same success rates as partnering with the individual and empowering them to decide about their health.

Using principles of good coaching skills, behavioral interventions, and motivational interviewing can be very helpful. Another useful tool is Brief Action Planning. Brief Action Planning is a pragmatic, evidence-informed, and versatile Motivational Interviewing consistent tool to support patient self-management and facilitate health behavior change.[33] It is an ideal technique for someone who is considering change or open to change. More information can be found on the BAP Professional Network website. The below recommend guided is based off of Brief Action Planning and the work of Wingood et al.[34]

### Step 1: Sharing Results

The therapist can start off by going through each physical performance test result and comparing their results to normative data. If performance was below cut scores for adverse events, this should be shared. If the participant has done the Annual Mobility Assessment in the past, performance can be compared to previous results.

It is also beneficial to compare their self-reported physical activity levels to national guidelines. This is especially important because the foundation of most recommendations will be an increase or adjustment in the physical activity levels.

### Step 2: Ask About Their Thoughts

After physical performance results and physical activity levels discussion, ask the participant, *What do you think about these results".* Give them space to share their thoughts and see if they make a statement about wanting or having to take some action.

### Step 3: Setting a Goal or Action

The participant may say that they want to take some action, for example, "I need to start exercising" or "I should get stronger". Or the therapist may have to ask, "*based on these results, do you want to set a goal or take any actions around your mobility?"* If the participant does not have ideas, you can follow up with, "*Would it be okay for me to share some ideas that might be helpful?"* Assuming they say yes, the therapist can list off 2-3 options based on the results. Then ask if one of those ideas, or something else sounds like something they want to work on.

### Step 4: Developing a Plan

Once the participant gets to an idea, whether they came up with it on their own or it came from the therapist's suggestions, the therapist can ask "*Would you like to make a specific plan about that?"* If the participant says yes, the therapist should try to get them to address what they will do, when, how long, how often. This might be a place that the therapist can ask if they can recommend one or two exercises and then let the participant work through the specifics of when and where they will complete the exercises. If the participant is interested in a community-based program, the therapist can provide some suggestions or a list of programs in the area. Then the participant can work through when they will begin or just find out more information. If the participant struggles here, the therapist may make a suggestion but let the participant make the final decision. Once the specifics are defined, ask the participant to repeat back the plan.

### Step 5: Confidence and Problem Solving

Based on the time in the session, the therapist may ask about the participant's confidence level in completing the plan, "*about how confident do you feel about carrying out your plan on a scale from 0-10?*" If the participant is at a 7 or higher, the odds of follow through is greater than if they are less than a 7. If they are less than a 7, the therapist can talk with them about what could be done to increase confidence levels or adjusting the plan to make it more achievable.

### Step 6: Closing the Session

At this point, the therapist will want to encourage them to follow through on any action plans. As time allows, the therapist might answer any further questions. Participants should be encouraged to return in the future for another visit. Based on the model for the Annual Mobility Assessment, the therapist may call and check in on them in the coming week. The therapist should have a plan in place to encourage a return visit.

### What if They Do Not Want to Make a Plan?

It may happen that after reviewing results, the participant is not interested in taking any action. They may feel like they want to do something on their own, they do not agree with the results, and/or need time to process the results. This is OK.

In these situations, the therapist should be supportive. Taking a firm stance that they must act will not lead to change and could actually make the participant less likely to want to change in the future. They need time to make the decision for themselves. The therapist may be able to ask if they can share a couple of educational resources around an issue based on their needs. Let the participant know that if they need anything in the future, they can contact the therapist with questions.

## The Need for a Referral

While the participant is responsible for implementing their own plan, there may be times that the therapists will need to be more direct with next steps. This would be when someone needs a medical referral for a suspected condition or they might need a full physical therapy evaluation to address a safety concern. Ideally the person will realize they need to take this action or when the list of possible actions, they see its importance. If they do not, the therapist may try the following statements…

> *"I would like you to see a physical therapist for a full evaluation because of your …."*
>
> *"I would highly recommend you set up an appointment to return to your physician to address…"*
>
> *"Based on your scores, I am concerned about XYZ, I would like you to see someone else besides me"*

If the participant decides they do not want to take this action, the therapist may stress again its importance and ask them to reconsider. The therapist should remind the participant they are available for future questions or if they need help taking the next step.

## Resources for Further Learning

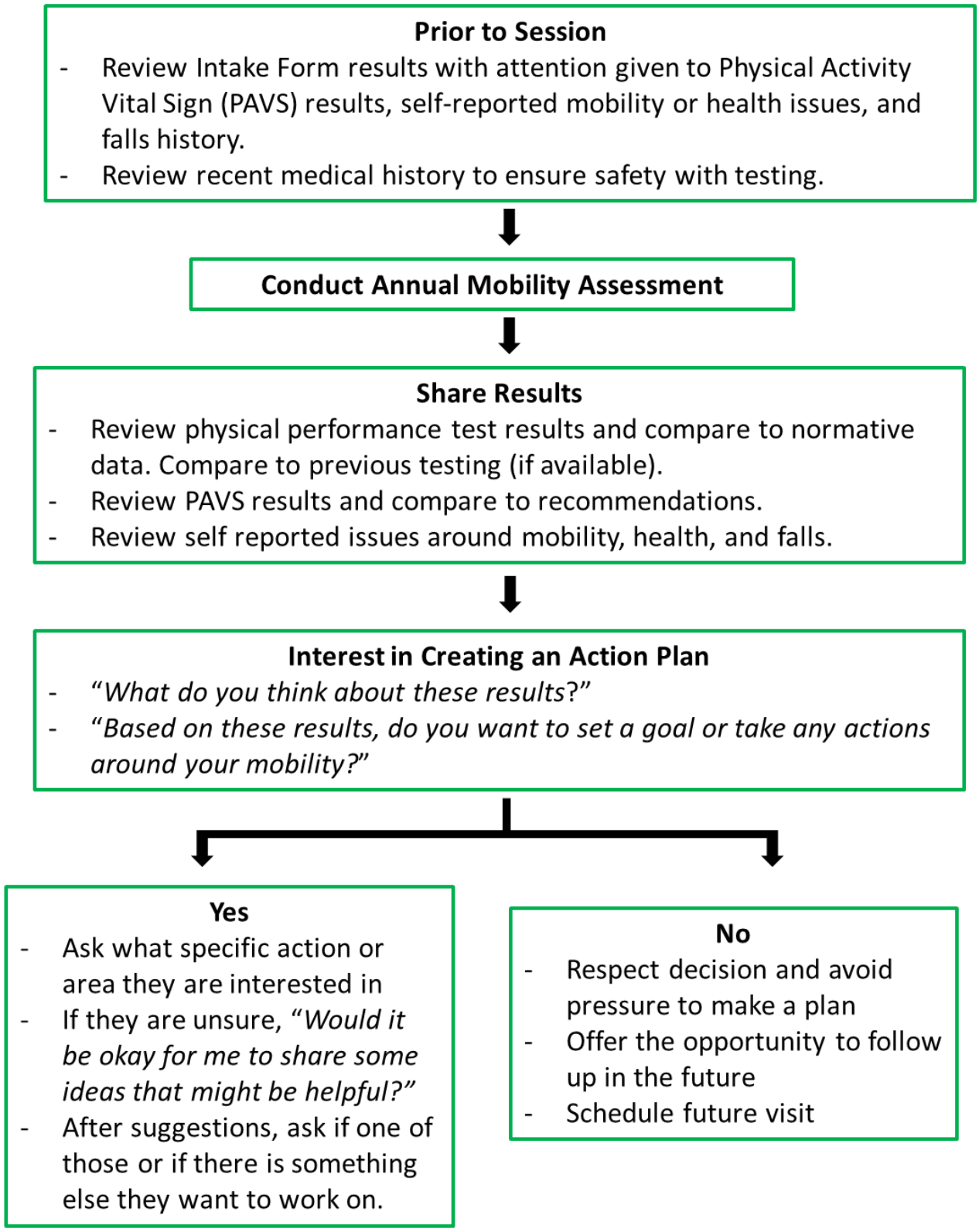
The Annual Mobility Assessment Manual cannot provide all the necessary training to implement Brief Action Planning and aspects of Motivational Interviewing. Below are some resources to help therapists who are not as familiar with coaching skills, behavioral interventions, and motivational interviewing or who are looking to improve their skills in these areas.


Cole SA, Sannidhi D, Jadotte YT, Rozanski A. Using motivational interviewing and brief action planning for adopting and maintaining positive health behaviors. Progress in Cardiovascular Diseases. 2023;77:86-94. https://doi.org/10.1016/j.pcad.2023.02.003 - This is an open source reference

Pignataro R, Huddleston J. The Use of Motivational Interviewing in Physical Therapy Education and Practice: Empowering Patients Through Effective Self-Management. Journal of Physical Therapy Education 29(2):p 62-71. – Available through Open Source

Wingood M, Bean JF, Linsky AM. Incorporating Physical Activity Assessments and Behavior Change Techniques Into Geriatrics. *Archives of Rehabilitation Research and Clinical Translation.* 2023;5(4):100293. – Published open source.

## Annual Mobility Assessment Discussion Flow Chart



**Develop a Plan**

- *"Would you like to make a specific plan about that?"*
  - What will they do?
  - When will they do it?
  - How often?
  - How long?
- Once the plan is developed, consider using a worksheet to document. Have the participant repeat back the plan.
- *"About how confident do you feel about carrying out your plan on a scale from 0-10?"*

**7 or greater**

- Congratulate and encourage them to start to implement the plan

**Less than 7**

- Consider adjusting the plan
- Problem solve on ways to make the plan more attainable

**Closing the Session**

- Consider setting up a short term follow you call or contact
- Provide any further educational materials
- Encourage return visit

## Integration of the AMA into Clinical Practice

The Annual Mobility Assessment can be incorporated in routine physical therapy assessment or take place as a community-based event. The protocols for each mobility test are the same, whether office- or community-based.

### Incorporating Screening into a Physical Therapy Episode of Care

During one-on-one delivery, the therapist working with the participant collects all the data and does the review with recommendations. This can be conducted as a separate appointment or session in a traditional physical therapy clinic, as part of the client's plan of care, or during an outreach program sponsored by the practice.

#### *Space and Equipment Requirements*

Space for the walk tests and the TUG will be the biggest concern. Given testing is being done with one person at time, space can be set up and taken down based on the needs of the environment. Below is a list of equipment and supplies needed.

- A dedicated, marked area for a 10 to 15-meter walkway (depending of the clinic's floorplan) with center 5 meters marked for steady state timing with chairs as targets beyond either end.
- A dedicated, marked area for 3m TUG walkway (can be superimposed on gait walkway) and a chair with armrest and a 17-inch seat height.
- A dedicated, marked area for the modified Four-Square Step Test and a set of 4 canes or PVC piping with a 4-way coupler or L attachment for apparatus stability.
- Space to anchor an armless chair with 17-inch seat height against a wall or heavy table for the 30 Second Sit to Stand Test.
- Smartphones or stopwatches for timing performance and for calculating results.
- Gait belt as required for ambulation training by the clinic's policies and procedures.

The measures in the Annual Mobility Assessment are commonly used in routine physical therapy care. To implement the mobility screen in the clinical setting, physical therapists will need to:

1. ensure necessary equipment is readily available
2. delineate and mark space for the TUG and gait speed testing,
3. train staff for consistency in applying the protocol (to address inter-rater reliability), and
4. include the importance of mobility assessment in the practice's mission statement and other documents.

Assessment results and recommendations can be incorporated into the practice's electronic medical record system. The assessment's evidence-based strategy for interpreting mobility status (based on age and gender norms) and the ability to evaluate change over time (based on known MDC and MCID values for each test) will assist communication and enhance documentation. Practices can use the other

resources developed by the Annual Mobility Assessment task force found on the APTA-G website and Community page.

While the protocols can certainly be used for one-on-one assessment in other clinical settings (e.g., acute care, inpatient and skilled nursing rehabilitation, home care, and long-term care), the Annual Mobility Assessment's interpretation strategy is based on reference values/norms for community-dwelling older adults. At the time that this document was prepared, there was little to no evidence for typical performance in other physical therapy settings.

## Health Fair/Community Event

Community Assessment events with multiple participants being screened simultaneously require more staff, time, and a larger space, such as a community room at a senior center, church, or other gathering space. Such events increase public and medical community awareness of physical therapy's role in health promotion/disease prevention. Educational programs may be interested in having students participate in community screening clinics as service learning within their curriculum. Large physical therapy out-patient practices may find the idea intriguing as an opportunity for community service. The specific mobility assessment protocol has been pilot-tested in several locations across the United States and appears effective and efficient.

### Setting Up a Health Fair

A community-based Mobility Assessment should occur indoors, in a temperature-controlled space with even flooring (preferably tile or vinyl, or low pile rug). Hosts can decide if participants rotate from station to station by themselves or if they have a person who rotates with them. During pilot projects hosted by Task Force Members, feedback from participants indicated they valued and enjoyed having a single tester accompany them through the screening process. A second "assistant" tester (such as a PT student or PTA) may be assigned to record findings as the participant is tested.

The below figure lays out a *possible* room set up for testing.

#### *Waiting Area*

As many participants may be accompanied by a spouse, friend, or caregiver, a Waiting Area with 4-6 chairs should be set up near the Welcome table. Participants appreciate availability of water and light snacks for refreshment during/following participation.

#### *Welcome and Orientation – 5 minutes*

Participants are welcomed to the event at a Welcome/Orientation table, where they check in, provide informed consent for participation, receive their name tags and testing documents and meet their tester/s. Testing documents can be in paper form or through a Microsoft Office Forms software. If using paper forms, a packet of data collection forms, appropriate report card, and counseling materials should be assembled and labelled with an identification number prior to the event.

### *Intake/Health History – 10-15 minutes*

Participants can start at intake/health history stations. The below figure has four stations, but that can be adjusted based on space. At this station pre-completed intake and health history forms are reviewed, and vital signs are assessed to ensure participation in testing will be safely tolerated. Gait belts are applied prior to moving into the testing area.

### *Testing Stations – 15 minutes*

When review is completed, the participants can move to the testing stations. The below figure has four stations, but that can be adjusted based on space. Space requirements for the testing station are as follows.

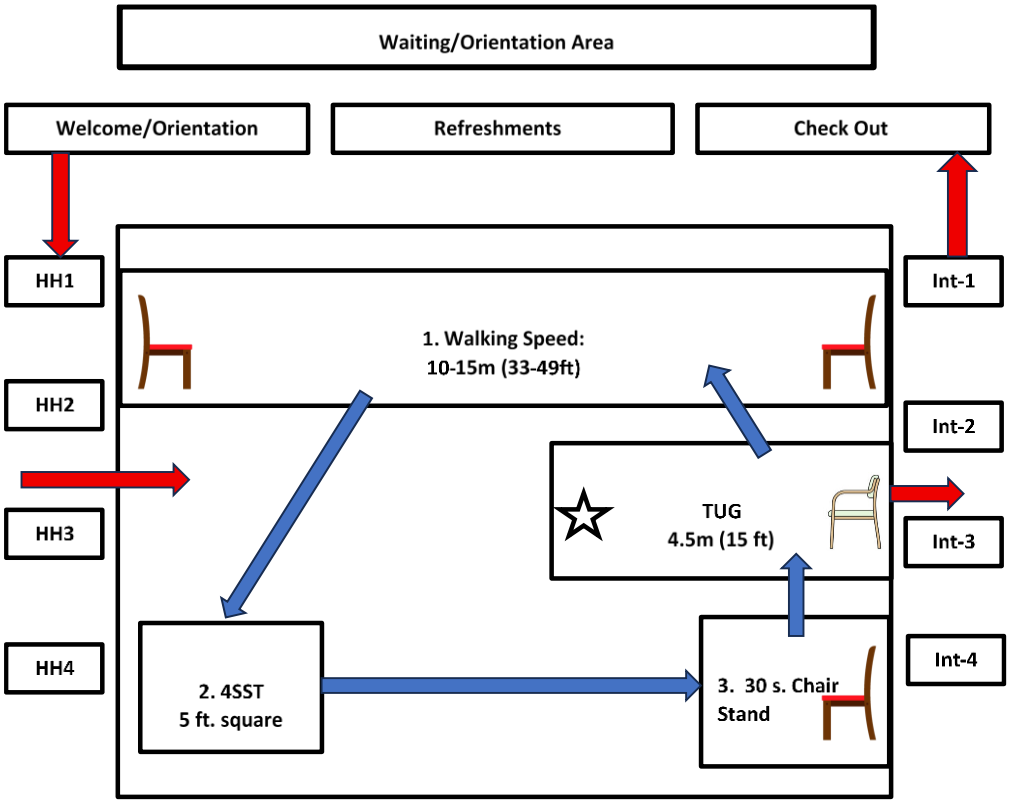
- Gait Speed Walkway: A rectangular that is 12 meters (39 ft) to 15 meters (50 ft) long by 1-2 meters (3-6 ft) wide for the 10 m walkway. The walkway itself marked area for a 10m (33 ft) walkway (with center 5m (16.5 ft) marked for steady state timing) and chairs at either end. This allows for acceleration, steady state, and deceleration during testing. A chair should be set up at slightly beyond each end of the walkway as "targets" during the testing.
- Four Square Step Test (FSST): a 9 to 12 ft. square area as testing space. The PVC pipe testing frame (with painter's tape underneath if necessary for a modified test) delineates where to step during testing.
- 30-second Chair Rise) Area: A 4-5 ft. square area, preferably against a wall, and an armless chair.
- Timed Up and Go Test (TUG): A chair with arms and a 5-6 meter (15-20 ft.) clear distance as a walkway for testing. A visible target 3 meters (9.8) in front of the chair's front edge

### *Interpretation/Counseling Area – 15-20 minutes*

After functional testing, the participant moves to the Interpretation/Counselling Area. The report card should be review. See other parts of the manual for a description of how to review results.

### *Check-out Station – 5 minutes*

Finally, the participant reports to the check-out station, where documents are examined for completeness. Informed consent (if using), Registration Forms, Intake Forms, and Data Collection forms are collected. Participants retain the report card and any educational materials they received during counseling.




Example of set up and space requirements for an AMA "round robin" community event.

- Red arrows indicate progression through the five AMA components (Welcome-Orientation, Intake/Health History, Functional Testing, Interpretation/Counseling, Check Out).
- Blue arrows indicate rotation through functional testing stations during appointment times.
- After check-in, participant-tester pair (P-T) move to one of the health history (HH) stations.
- When intake is complete, P-T pairs move to an assigned testing station (e.g., HH1 to walking speed, HH2 to 4SST, HH3 to 30s Chair stand, HH 4 to TUG)
- When testing is completed, participant/tester pairs move to an interpretation and education (INT) area.
- Finally, P-T pairs move to a check out station where data documents are collected.
- Each station (HH, testing, INT) must have two chairs, one for the participant and one for the tester.

The number of participants screened in each appointment is limited by the space available in the room where the screening will take place and the number of testers available to screen. Below is an example of an appointment schedule and progression through the clinic.

| **Appt. Time** | **Welcome & Registration (5 min)** | **Health Hx & Vitals (15 min)** | **Functional Testing (15 min)** | **Interpretation & Counselling (20 min)** | **Check-Out (5 min)** |
|---|---|---|---|---|---|
| 7:30 am | CLINIC SET UP & PREPERATION | | | | |
| 8:30 am | Participants 1-4 | 8:35 | 8:50 | 9:05 | 9:25 |
| 9:30 am | Participants 5-8 | 9:35 | 9:50 | 10:05 | 10:25 |
| 10:30 am | Participants 9-12 | 10:05 | 10:15 | 10:25 | 10:45 |
| 11:30 am | Participant 13-16 | 11:05 | 11:15 | 11:25 | 11:45 |
| 12:30 | Lunch Break | | | | |
| 1:00 pm | Participants 17-20 | 1:05 | 1:20 | 1:35 | 1:55 |
| 2:00 pm | Participants 21-24 | 2:05 | 2:20 | 2:35 | 2:55 |
| 3:00 pm | Participants 25-28 | 3:05 | 3:20 | 3:35 | 3:55 |
| 4:00 pm | Participants 29-32 | 3:35 | 3:50 | 4:05 | 4:25 |
| 5:00 pm | CLINIC BREAKDOWN AND CLEAN UP | | | | |

## Updates to the Annual Mobility Assessment

The Annual Mobility Assessment is a new tool and as research is completed and feedback provided by users, aspects of the Annual Mobility Assessment may be updated. The task force has developed the following process for updates.

1. Throughout the calendar year, task force members will track suggested changes and rationale for the changes. See below the guidelines used for making changes.
2. Each November 1 all suggested changes will be reviewed by a subgroup of at least three task force members. The subgroup will consider each suggestion and rationale provided. They may also do their own research and review for the suggested changes.
3. In December the subgroup will bring any recommendations for changes to the full task force. The full task force will vote on these changes and a majority vote is required for any changes.
4. Any changes will be reflected in the Annual Mobility Assessment Manual and resource documents. Ideally these changes will be made public in January of next year.
5. Prior revisions of the documents will be archived.
6. If there is a need to make an update to the Annual Mobility Assessment outside of this process, it will be discussed by the full task force.

### Collecting Feedback from Users

Users of the Annual Mobility Assessment are welcome to provide feedback on the tool at this website. This feedback is reviewed by task force members as it is submitted.

## Annual Mobility Assessment Repository

The Annual Mobility Assessment Repository serves as a place to compile and archive data on the Annual Mobility Assessment to allow future research on the tool. By collecting a large amount of data and then making this data available to investigators, this will allow aspects of the AMA Research Agenda to be answered.

Individuals interact with the Annual Mobility Assessment Repository in one of two ways.

1. Submit data to the Annual Mobility Assessment Repository for future research.
2. Request access to data to conduct secondary analysis.

### Structure and Staffing of the Annual Mobility Assessment Repository

The Annual Mobility Assessment Repository is housed at St. Ambrose University, Physical Therapy Department in Davenport, IA. The Annual Mobility Assessment Repository's policies and procedures were reviewed and approved by the St. Ambrose University Institutional Review Board (IRB) and the Associate Vice President of Academic Grants and Sponsored Programs. The Annual Mobility Assessment Repository is managed by a director. The director selects at least two individuals to serve as members of the Data Board. The Data Board is responsible for reviewing and approving applications to submit data to the Annual Mobility Assessment Repository and applications to access data from the Annual Mobility Assessment Repository. Individuals on the data board are selected based on their background around assessment in rehabilitation, knowledge of the Annual Mobility Assessment, and experience in research methods. Current members of the Annual Mobility Assessment Repository Data Board are as follows…

| | |
|---|---|
| Repository Director: | Michael Puthoff, PT, PhD;<br>puthoffmichaell@sau.edu, 563-333-6009 |
| Data Board Members: | Catherine Byrne, PT, DHS<br>Jennifer Petersen, OTD, OTR/L, C/NDT |

Those interested in contributing data to the Repository or accessing data in the Repository should contact the Repository Director.

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