

Fall Prevention Guideline

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Guidelines are systematically developed statements to assist patients and providers in choosing appropriate health care for specific clinical conditions. While guidelines are useful aids to assist providers in determining appropriate practices for many patients with specific clinical problems or prevention issues, guidelines are not meant to replace the clinical judgment of the individual provider or establish a standard of care. The recommendations contained in the guidelines may not be appropriate for use in all circumstances. The inclusion of a recommendation in a guideline does not imply coverage. A decision to adopt any particular recommendation must be made by the provider in light of the circumstances presented by the individual patient.

Major Changes as of November 2013

New	Previous
The Timed Up and Go (TUG) test and the Get Up and Go (GUG) test are equally acceptable choices for testing gait and balance.	Use only the TUG test.
The TUG test cutoff level is 13.5 seconds . A patient who takes longer is considered at high risk for falls.	The TUG test cutoff level is 20 seconds. A patient who takes longer is considered at high risk for falls.

Background

A fall is defined as an unexpected event in which a person comes down suddenly to rest on the ground, floor, or lower level. Falls are the leading cause of injury-related visits to emergency departments and the primary cause of accidental deaths in individuals aged 65 years and older.

Between 30% and 40% of community-dwelling people aged 65 and older fall at least once per year, and two-thirds of those who fall will fall again within 6 months. One fall in 5 may require medical attention, but fewer than 1 fall in 10 results in a fracture. Recurrent falls lead to more injuries, hospitalizations, and nursing home admissions. Women are more likely to sustain a nonfatal fall than men; however, the age-adjusted rate of fatalities due to falls is 49% higher for men than for women, which could be attributed to differences in the causes or severity of the falls.

While it may not be possible to prevent falls completely among older adults, it is possible to reduce their incidence, recurrence, and consequences through appropriate assessment and intervention. The multifactorial nature of fall prevention means that the care must be coordinated among physicians, nurses, physical therapists, and occupational therapists.

Primary Prevention of Falls and Related Injuries

Fitness programs

An exercise program that targets balance, gait, and coordination is recommended for all adults aged 65 and older, regardless of prior falls. The [EnhanceFitness and SilverSneakers programs](#) focus on strengthening and conditioning the entire body. Many other exercise programs targeting seniors are offered in the community.

EnhanceFitness classes are 60 minutes long and meet 2–3 times per week at community and senior centers in Western Washington. The evidence-based classes include aerobic, strengthening, balance, and stretching exercises. Nationally certified instructors lead the classes and modify the exercises to accommodate participants' needs. Even frail adults can do EnhanceFitness exercises while seated in chairs.

SilverSneakers is a program that provides access to participating gyms across the state. Classes offered at the gyms vary and may include SilverSneakers fitness classes for older adults, such as YogaStretch and SilverSplash water aerobics.

To encourage your patients to enroll in one or both of these programs, you may:

- Include a reminder in the after-visit summary using **.avssrfitness**.
- Send a secure message using **.pmsrfitness**.
- Provide a SilverSneakers brochure.
- Advise them to contact the Resource Line for more information.

Vitamin D

All adults aged 65 and older should receive an adequate daily intake of vitamin D (800–2,000 IU per day), which has been associated with a reduced risk of falls. There is no need to screen healthy older adults for vitamin D deficiency; supplementation is the most cost-effective strategy.

Bone density test

Women aged 65 years and older and members of other high-risk populations should receive a bone density test (dual-energy X-ray absorptiometry, or DXA) at least once. See the Osteoporosis Guideline.

Initial Fall Risk Screening

Given that certain interventions have proven to reduce falls, fall risk screening is a required element of the Senior Well Visit, and it is also one of the topics that patients are asked about for the Medicare Star Rating assessment of plan performance.

Figure 1 at the end of this section presents the initial fall risk screening process as an algorithm.

Screening questions

An individual aged 65 years or older presenting with an acute fall or coming in for a Senior Well Visit should be asked the following 3 screening questions, which are included in the [Wellness Questionnaire for Adults on Medicare or Age 65+](#):

1. Have you had **2** or more falls in the prior 12 months?
2. Are you here because of a recent fall?
3. Do you have difficulty with walking or balance?

A person who answers “no” to **all** 3 screening questions should be reassessed at the next Senior Well Visit.

A person who answers “yes” to **any** of the 3 screening questions is at higher risk of falling, and should be further evaluated for gait and balance.

Evaluation of gait and balance

There are several different validated tests for assessing gait and balance. The Timed Up and Go (TUG) and the Get Up and Go (GUG) tests are equally acceptable choices, as both are commonly used in primary care and are recommended by external guidelines (AGS/BGS 2010; USPSTF 2012; NICE 2013).

Both the TUG and GUG tests include the same series of maneuvers, but the TUG also measures the speed of performing all maneuvers. Patients can use a mobility aid, if needed.

Have a timer available if you are using the TUG test. Begin by having the patient sit comfortably in a straight-backed chair, hips all the way back. Identify a line on the floor 3 meters (10 feet) away. Then instruct the patient to move through the following steps:

1. Rise from the chair.
2. Stand still momentarily.
3. Walk to the line at a normal pace.
4. Turn around.
5. Walk back to the chair.
6. Turn around.
7. Sit down in the chair.

Observe the patient’s ability to stand, postural stability while walking, stride length, and balance while turning. Issues to watch for include slow or tentative pace, short strides, shuffling, loss of balance, little or no arm swing, en bloc turning (neck and trunk rigid), and not using a mobility aid properly.

For the TUG test, compute elapsed time for the patient to complete steps 1–7.

Results and further assessment

The TUG test relies on time thresholds to rate the test result as normal or abnormal. A patient who takes longer than 13.5 seconds to complete the maneuvers is considered at high risk for falls (abnormal test result).

The GUG uses the following scale for scoring:

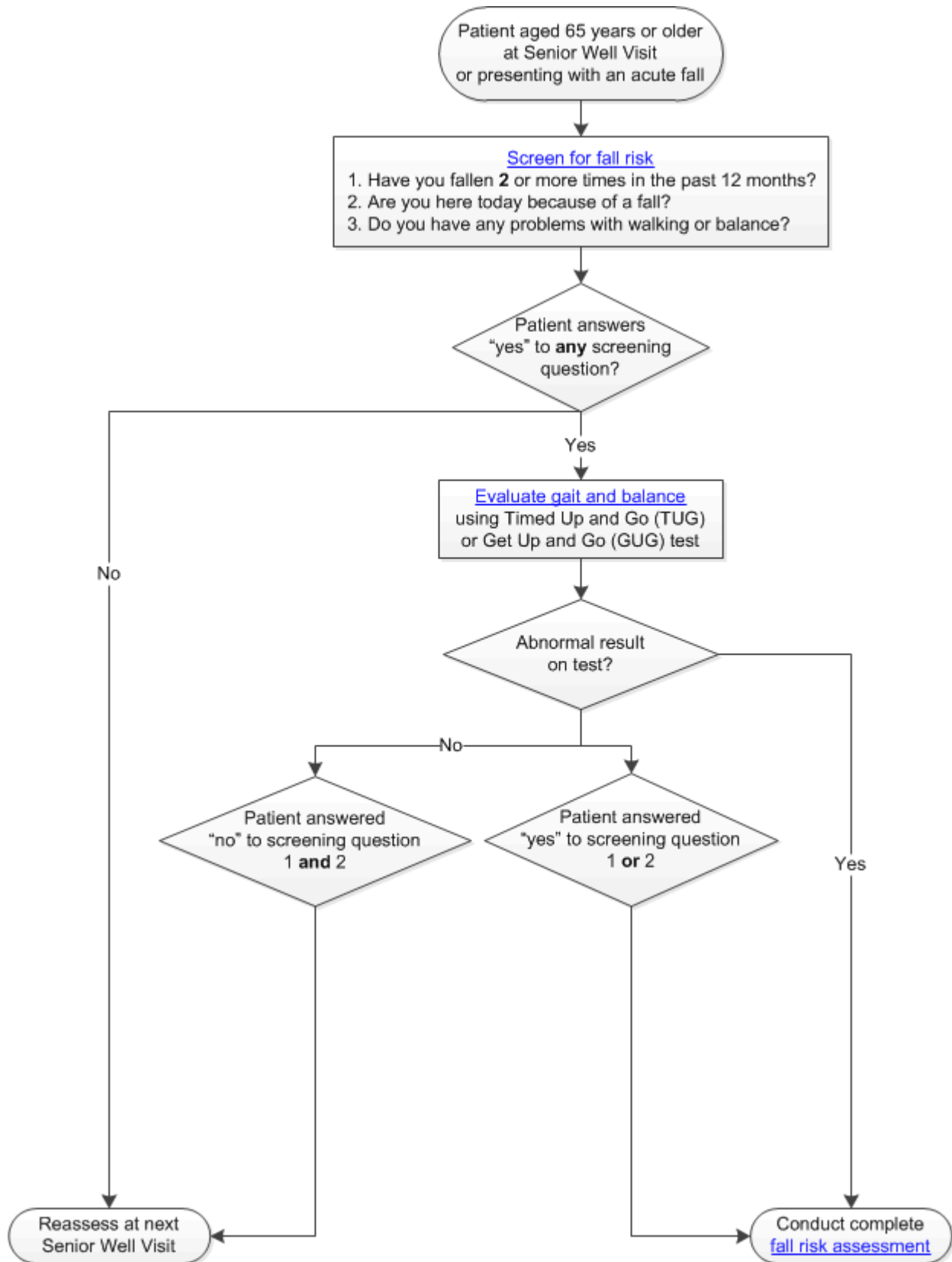
- 1 = Normal
- 2 = Very slightly abnormal
- 3 = Mildly abnormal
- 4 = Moderately abnormal
- 5 = Severely abnormal

A patient with a score of **3 or higher** on the GUG is considered at high risk for falls (abnormal test result).

For both the TUG and GUG tests:

- If the test result is abnormal, conduct a complete fall risk assessment.
- If the test result is normal but the patient answered “yes” to question 1 **or** 2, conduct a complete fall risk assessment.
- If the test result is normal and the patient answered “no” to questions 1 **and** 2, reassess fall risk at the next Senior Well Visit.

Figure 1. Initial fall risk screening algorithm



Fall Risk Assessment and Interventions for Fall Prevention

The goal of the complete fall risk assessment is to prevent or reduce falls through individualized, targeted interventions that address the patient's risks and deficiencies as identified in the assessment. The complete assessment should be conducted on any individual 65 years or older who had an abnormal test result during fall risk screening. (See Initial Fall Risk Screening, above.)

Make referrals for further evaluation and treatment as necessary.

Table 1. Risk assessment and interventions for patients at high risk for falls	
Assessment	Intervention
Relevant medical history	
Detailed history of falls: circumstances, frequency, injuries	Manage according to circumstances. See interventions for gait, balance, and mobility, below.
Medication review	<ul style="list-style-type: none"> • Minimize or discontinue as many psychoactive medications as possible. • Reduce polypharmacy. • Consider patient consultation with a clinical pharmacist.
Physical examination	
Gait, balance, and mobility	<ul style="list-style-type: none"> • Advise all patients to follow a community-based exercise program that includes balance, gait, coordination, and strength training. • Consider referring patients with an abnormal TUG or GUG test result to Physical Therapy (PT) for a detailed evaluation, as well as to a group therapy program to improve gait, balance, and mobility, such as EnhanceFitness.¹ • For patients with a normal TUG or GUG test result who have had more than one fall in the past 12 months, use clinical judgment to determine the need for PT referral.¹
Neurological function: cognitive and functional assessment, neuropathy	Manage the underlying condition.
Cardiovascular evaluation: heart rate, rhythm, blood pressure	Manage medication as indicated. Refer to Cardiology for consideration of pacemaker, if indicated.
Postural hypotension	Reduce or eliminate medications likely to contribute to the condition.
Urinary incontinence	Manage the underlying condition.
Screen for visual acuity	Consider referral to Eye Care for those with impaired vision.
Examination of footwear	Advise all patients to wear well-fitting shoes with broad low heels, firm soles, and high surface contact area. See the SmartPhrase .shoelist .
Functional assessment	
Daily living skills, including use of adaptive equipment and mobility aids	Canes or walkers may increase stability, but the wrong equipment or incorrect fitting will increase the risk of falling. ²
Patient's fear of falling and perception of own functional ability	<ul style="list-style-type: none"> • Educate patients about strategies for maximizing functional ability while maintaining safety. • Refer to counseling or PT, if appropriate.¹

Table 1 continued on following page.

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Table 1. Risk assessment and interventions for patients at high risk for falls	
Assessment	Intervention
Environmental assessment	
Patient's ability to self-manage home hazard reduction	<ul style="list-style-type: none"> • Educate and/or provide patient education materials about eliminating or reducing safety hazards in the home. • Suggest installing hand rails on stairs and grab bars in the bathtub, removing tripping hazards such as area rugs, wiring, and clutter, and ensuring adequate lighting. • Provide checklist for self-assessment of home hazards. • For patients meeting Medicare Home Care Services Criteria, consider a referral to Home Health PT for in-home safety assessment.
¹	Before referring a patient to PT for evaluation, complete and document the TUG or GUG test, including details of gait difficulties and mobility aids used. Also document the number and reasons for any falls within the past year.
²	There is insufficient evidence to make specific recommendations for or against the use of hip protectors, assistive devices, or alarms to reduce fall risk or fractures. Hip protectors deflect the force of impact during a hip landing on the soft tissues around the joint. The evidence on their benefit in preventing hip fracture is conflicting, and the rate of compliance with their use is low.

Follow-up and Monitoring

For patients who report only a single fall **and** report or demonstrate no difficulty or unsteadiness of gait and balance, reassess fall risk at the next Senior Well Visit.

Regularly review and adjust patients' recommended exercise programs, if applicable.

For all patients aged 65 and over, medication review is recommended at every visit.

Evidence Summary

To develop the Fall Prevention Guideline, the guideline team:

- Adapted recommendations from the following externally developed evidence-based guidelines and/or organizations that establish community standards:
 - The American Geriatrics Society/British Geriatrics Society. AGS/BGS Clinical Practice Guideline: Prevention of Falls in Older Persons. 2010.
 - National Institute for Health and Care Excellence (NICE). Falls: assessment and prevention of falls in older people. 2013.
 - U.S. Preventive Services Task Force. Prevention of Falls in Community-Dwelling Older Adults. 2012.
- Reviewed additional evidence using an evidence-based process, including systematic literature search, critical appraisal, and evidence synthesis.

A literature search for recent guidelines or literature on fall prevention in community-dwelling older adults identified an updated version of the NICE guideline (2013) and a new meta-analysis (Schoene et al 2013) on the discriminative ability and predictive validity of the TUG test in identifying older people who fall.

The recommendations in the 2013 NICE guideline are unchanged from the 2004 version, except for the addition of several about preventing falls in older people during a hospital stay.

In the meta-analysis, results pooled from prospective and retrospective cohort studies suggested that the TUG test is not a useful tool for discriminating fallers from nonfallers in healthy, high-functioning older people but that it may be of more value in less healthy, lower-functioning older adults. This guideline supports this recommendation by testing gait and balance only in lower-functioning adults, who have answered yes to 1 of the 3 initial screening questions.

References

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U.S. Preventive Services Task Force (USPSTF). Prevention of Falls in Community-Dwelling Older Adults: U.S. Preventive Services Task Force Recommendation Statement. AHRQ Publication No. 11-05150-EF-2. Last updated May 2012. Accessed October 2013.
(<http://www.uspreventiveservicestaskforce.org/uspstf11/fallsprevention/fallsprevrs.htm>)

Guideline Development Process and Team

Development Process

To develop the Fall Prevention Guideline, the guideline team adapted recommendations from externally developed evidence-based guidelines and/or recommendations of organizations that establish community standards. The guideline team reviewed additional evidence on the TUG test. For details, see Evidence Summary and References.

This edition of the guideline was approved for publication by the Guideline Oversight Group in November 2013.

Team

The Fall Prevention Guideline development team included representatives from the following specialties: activity, sport and exercise medicine; family medicine.

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Disclosure of conflict of interest

Kaiser Permanente requires that team members participating on a guideline team disclose and resolve all potential conflicts of interest that arise from financial relationships between a guideline team member or guideline team member's spouse or partner and any commercial interests or proprietary entity that provides or produces health care–related products and/or services relevant to the content of the guideline.

Team members listed above have disclosed that their participation on the Fall Prevention Guideline team includes no promotion of any commercial products or services, and that they have no relationships with commercial entities to report.