



SENIOR HEALTH

Is Your Patient at Risk of Falling? Clinical Pearls for Assessment and Prevention

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Nearly 15 years ago, my EMT unit arrived on scene to find a small, elderly woman lying on the cement slab of an apartment complex. The neighbor who had heard the commotion and screams stood by nervously. She writhed in pain and winched from every contact of our assessment. As was protocol, we reversed a set of spider straps securing her pelvis to the backboard for transport. Her agony persisted all the way to the hospital until she was received by a team who quickly obtained films and diagnosed a pelvis fracture.

During transport, we were only able to determine that her fall might have been due to some external factors, taken at face value as a slippery and wet floor. As such, she had been the most recent data point in the more than 3 million visits to an emergency department occurring annually from falls.

Fall Risk: Scope of the Problem

In fact, over the age of 65, one in three people will suffer a fall every year, and the statistics become more grim with increased age. In the woman's case, accidental, or extrinsic, falls account only for 14 percent of all falls. These commonly occur from wet or snowy conditions, poor footwear, equipment failure, or transitioning from positions or surface types (think floor to carpet, or along walkways switching to road or grass). The remainder of falls can be categorized as physiological, or intrinsic.



While a number of these falls occur in patients without noted risk factors (8 percent), it's that large remaining cohort (78 percent) with which health care practitioners should be most concerned.

Ask the Right Questions

The etiology of many of these falls can be determined through a comprehensive examination and appropriate assessment when risks are evident - beginning, of course, with a thorough history. According to the Centers for Disease Control's STEADI initiative, doctors can start by asking the right questions:

- Have you fallen in the past year?
- Do you feel unsteady when you stand?
- Do you worry about falling?

Answering yes to any of these questions shows an increased risk of falling and should trigger the provider to further assess the patient's risk.

Another part of a patient's health history that warrants review is their medication list. Many medications (antihypertensives, anticholinergics, anticoagulants, CNS depressants and other sedatives/sleep aids, to name a few) can be the cause of a patient's instability and must be considered prior to addressing other modifiable aspects of their health. Check medication lists often, document that you've done so, and as needed, coordinate appropriately.

Objective Examination: Going Beyond the Basics

When it comes to objective information, chances are you're already on the right track with fall assessment. To start, two exams which can give insight to fall risk are the one-leg standing and Romberg's tests. These tests are designed to stress aspects of the patient's visual, proprioceptive and vestibular function. Depending on which aspect of the test is difficult (produces a positive)

gives providers valuable information to match treatment strategies.

Another "test" in which many health care practitioners naturally excel is mobility. Patients at higher fall risk typically exhibit any number of classic deficiencies in their range of motion (ROM). For example, decreased ankle dorsiflexion and/or decreased hip extension restricts toe-off during the gait cycle, effectively stunting that portion of the cycle. As an adaptive sequela, patients learn to ambulate in a more flexed posture (think camptocormia), effectively losing their ability to stand erect and diminishing stability in the frontal plane.

This is where many practitioners draw the line in assessing fall patients. To gain a complete picture of physical ability, I urge you to adopt two specific tests: the timed up & go test and the functional reach test.

The *timed up & go* test (TUG) is one of the best-known tests to assess for fall risk. Testing multiple components of balance and mobility, the sequencing and executive function of associated tasks gives quality insight as to a patient's abilities. It's also sensitive to early changes in functional status.

To conduct this test, simply time the patient standing up from a chair, walking 10 feet forward, turning, walking back to the chair and sitting down again. Observe gait abnormalities (short strides, tentative pace, arm swings, etc.), loss of balance, en bloc turning, or inability to perform in under 12 seconds.

The *functional reach* test is a quick screen for balance and takes up almost no room in the office. To perform this test, the patient stands perpendicular with their shoulder against the wall, reaching forward with their near arm (closed fist). Measure the fist from this position, instructing the patient to stretch forward without stepping or losing their balance. Mark the distance reached. While an elderly patient should be able to reach 10-13 inches, less than 10 inches would indicate moderate risk of falls (significant risk if less than 6 inches).

Managing Patients' Fall Risk: Rehab / Management Suggestions

Developing a management plan is vital for patients at higher fall risk. Treating elements of ataxia might be as simple as providing the proprioceptive benefits of taping (name your technique) or offering orthotics. Of course, these strategies will only get patients so far, as they'll need to have a rehabilitation plan developed to make long-lasting changes.

If you're not an expert in exercise prescription, have no fear. Incorporate the following guidelines to ensure fall-risk patients are maximizing benefits:

- Frequency: 50 hours over 3-6 months. This recommendation is a minimum for compliance. Encourage more frequent training sessions.
- Include balance-based exercises in standing positions that progressively become more challenging. Timed single-leg stances or in-line walking with progressive increases in intensity or time performed can increase training efforts.
- Strength training focusing on the posterior chain. Consider deadlifts, "good-mornings," calf raises and chin retractions. Body-weight-type approaches might be a good option, too.

Clinical Pearls

Fall prevention starts with practitioner awareness. Patients over the age of 65 should always be screened for risk and when risk factors are present, evaluated accordingly. Management for fall risk aligns well with current healthy living strategies, which include a committed resistance

training program. By implementing a few easy strategies, you can significantly improve patients' quality of life and stop that 9.8 m/s² force from bringing any more of your patients down.

Resources

1. Moreland B, Kakara R, Henry A. Trends in nonfatal falls and fall-related injuries among adults aged ≥ 65 years - United States, 2012-2018. *Morb Mortal Wkly Rep*, 2020;69(27):875-881.
2. Make STEADI Part of Your Medical Practice. Centers for Disease Control and Prevention: www.cdc.gov/steady/index.html.
3. Podsiadlo D, Richardson S. The timed "up & go": a test of basic functional mobility for frail elderly persons. *J Am Geriatr Soc*, 1991;39(2):142-148.
4. Weiner DK, Duncan PW, Chandler J, et al. Functional reach: a marker of physical frailty. *J Am Geriatr Soc*, 1992;40(3):203-207.

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