Practical Tips to Assess and Address the Needs of an Older Adult who has Fallen

Jason R. Falvey, PT, DPT, PhD
Board Certified Geriatric Clinical Specialist
Research Fellow
Yale University School of Medicine
Acknowledgements

Some slides provided by the Academy of Geriatric Physical Therapy Balance and Falls Special Interest Group
### Objectives

<table>
<thead>
<tr>
<th>Discuss</th>
<th>practical strategies for identifying older adults at risk for falls</th>
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<tbody>
<tr>
<td>Evaluate</td>
<td>the components of the STEADI Toolkit and learn to utilize STEADI resources for fall risk prevention</td>
</tr>
<tr>
<td>Implement</td>
<td>STEADI tools into your practice toolkit</td>
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Epidemiology of Falls

Every year, 3 million older adults are treated in ER for fall related injuries (CDC 2019)

$50 billion annually (Florence et al 2018)

Average hospital cost: $30,000 (Burns et al 2016)
   Does not account for disability, dependence on others, lost time from work and household duties, and reduced quality of life (CDC 2019)

Fall death rates increased 30% from 2007 to 2016 (CDC 2019)
Identifying Older Adults at Risk for Falls

Medical Risk Factors

- History of any prior fall (odds ratio=2.9)
- Balance/Walking Problems (odds ratio=1.7)
- Depression (odds ratio=1.3)
- Urinary Incontinence (odds ratio=1.2)

Jia et al, 2019
Identifying Older Adults at Risk for Falls

Environmental Risk Factors

- Throw rugs or loose carpets
- Poor lighting
- Cords and oxygen tubes
- Bathtubs and showers

CDC, 2019
Special Older Populations at Risk for Falls

- Neurological disease or injury (i.e. CVA or Parkinson’s disease)
- Vertigo/dizziness (benign paroxysmal positional vertigo)
- Cognitive dysfunction (i.e. dementia)
Physical Consequences of Falls (Terroso et al 2013)

- Hip fracture
- Upper Body Injuries and Fractures
- Death
- Functional dependency/loss of autonomy
- Depression
Functional Recovery from Falls Often Poor

Gill et al, 2013
What can I do to address falls in a 15 minute visit
The 5 Ms of Geriatrics

MIND  MOBILITY  MEDICATIONS

MATTERS MOST

MULTI-COMPLEXITY

©Frank Molnar & Allen Huang, University of Ottawa
Mary Tinetti, Yale University
Centers for Disease Control and Prevention STEADI: Stopping Elderly Accidents, Deaths, and Injuries
What is the CDC STEADI

- Developed by an interdisciplinary task force at CDC to facilitate implementation of fall risk reduction guidelines
- Designed for clinicians in primary care (MD, RN, Pharmacists, etc)
- Contains resources for both clinicians and patients on fall risk assessment, treatment and referral
STEADI Toolkit Resources: Materials for Providers

- Algorhythm
- Screening and Assessments
  - 30 Seconds Chair Stand Test
  - Timed Up and Go (TUG)
  - 4 Stage Balance Assessment
  - Orthostatic Hypotension Assessment
- Fall Risk Factor Assessment
- Pocket Guide to Preventing Falls
- Medication Management
  - Medications Linked to Falls
  - How to Perform a Medication Review
- Fall Prevention Patient Referral Forms

- Wall Chart
- Patient Encounter Guides
- Community Program Referral Forms
- Three Case Studies
  - Case Study 1
  - Case Study 2
  - Case Study 3
- Infographics
- Other fact sheets
- Training and Continuing Education
<table>
<thead>
<tr>
<th>STEADI Toolkit Resources: Materials for Patients</th>
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<tbody>
<tr>
<td>• Caregiver Information</td>
</tr>
<tr>
<td>• <a href="#">English</a></td>
</tr>
<tr>
<td>• <a href="#">Spanish</a></td>
</tr>
<tr>
<td>• Home Assessment Safety Checklist</td>
</tr>
<tr>
<td>• <a href="#">English</a></td>
</tr>
<tr>
<td>• <a href="#">Spanish</a></td>
</tr>
<tr>
<td>• Stay Independent Brochure</td>
</tr>
<tr>
<td>• <a href="#">English</a></td>
</tr>
<tr>
<td>• <a href="#">Spanish</a></td>
</tr>
<tr>
<td>• What You Can Do to Prevent Falls</td>
</tr>
<tr>
<td>• <a href="#">English</a></td>
</tr>
<tr>
<td>• <a href="#">Spanish</a></td>
</tr>
<tr>
<td>• Chair Rise Exercise handout</td>
</tr>
<tr>
<td>• <a href="#">English</a></td>
</tr>
<tr>
<td>• <a href="#">Spanish</a></td>
</tr>
<tr>
<td>• Postural Hypotension Handout</td>
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<tr>
<td>• <a href="#">English</a></td>
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<td>• <a href="#">Spanish</a></td>
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STEADI Algorithm for Fall Risk Screening, Assessment, and Intervention among Community-Dwelling Adults 65 years and older

**START HERE**

**SCREEN** for fall risk yearly, or any time patient presents with an acute fall.

- Stay Independent: a 12-question tool
  - Important: If score > 4, ask if patient fell in the past year (If YES, patient is at risk)
  - Three key questions for patients [at fall if YES to any question]
    - Feels unstable when standing or walking?
    - Worries about falling?
    - Has fallen in past year?
  - If YES ask, “How many times?” “Were you injured?”

**PREVENT** future risk by recommending effective prevention strategies.

- Educate patient on fall prevention
- Assess vitamin D intake
  - If deficient, recommend daily vitamin D supplement
- Refer to community exercise or fall prevention program
- Measure yearly, or any time patient presents with an acute fall

**ASSESS** patient’s modifiable risk factors and fall history.

Common ways to assess fall risk factors are listed below:

- Evaluate gait, strength, & balance
  - Common assessments:
    - Timed Up & Go
    - 4-Stage
    - 30-Second Chair Stand Balance test
- Identify medications that increase fall risk (e.g., Beers Criteria)
- Ask about potential home hazards (e.g., throw rugs, slippery tub floor)
- Measure orthostatic blood pressure (Lying and standing positions)

Check visual acuity
- Common assessment tool
  - Snellen eye test

Assess feet/footwear
- Assess vitamin D intake
- Identify comorbidities (e.g., depression, osteoporosis)

**INTERVENE** to reduce identified risk factors using effective strategies.

Reduce identified fall risk
- Discuss patient and provider health goals
- Develop an individualized patient care plan (see below)

Below are common interventions used to reduce fall risk:

- Poor gait, strength, & balance observed
  - Refer for physical therapy
  - Refer to evidence-based exercise or fall prevention program (e.g., Tai Chi)

- Medication(s) likely to increase fall risk
  - Optimize medications by stopping, switching, or reducing dosage of medications that increase fall risk

- Home hazards likely
  - Refer to occupational therapist to evaluate home safety

- Orthostatic hypotension observed
  - Establish appropriate blood pressure goal
  - Encourage adequate hydration
  - Educate about importance of exercises (e.g., foot pumps)
  - Consider compression stockings

- Visual Impairment observed
  - Refer to ophthalmologist/optometrist
  - Stop, switch, or reduce the dose of medication affecting vision (e.g., anticholinergics)
  - Consider benefits of cataract surgery
  - Provide education on depth perception and simple vs. multifocal lenses

- Feet/footwear issues identified
  - Provide education on shoe fit, traction, insoles, and heel height
  - Refer to podiatrist

- Vitamin D deficiency observed or likely
  - Recommend daily vitamin D supplement

Comorbidities documented
- Optimize treatment of conditions identified
- Be mindful of medications that increase fall risk

**FOLLOW UP** with patient in 30-90 days.

Discuss ways to improve patient receptiveness to the care plan and address barrier(s)
Practical Implementation

WAITING ROOM

Home Environment Checklist

IN-VISIT

Evaluate risk factors
Intervene or refer
Set up a plan with patient to monitor for fall risk factors

AFTER VISIT

Coordinate referrals
Ensure needed equipment, help provided
Follow up 30-90 days
Use this checklist to find and fix hazards in your home.

### STAIRS & STEPS (INDOORS & OUTDOORS)

<table>
<thead>
<tr>
<th>Question</th>
<th>Action/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are there papers, shoes, books, or other objects on the stairs?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Always keep objects off the stairs.</td>
<td></td>
</tr>
<tr>
<td>Are some steps broken or uneven?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Fix loose or uneven steps.</td>
<td></td>
</tr>
<tr>
<td>Is there a light and light switch at the top and bottom of the stairs?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Have an electrician put in an overhead light and light switch at the top and bottom of the stairs. You can get light switches that glow.</td>
<td></td>
</tr>
<tr>
<td>Has a stairway light bulb burned out?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Have a friend or family member change the light bulb.</td>
<td></td>
</tr>
<tr>
<td>Is the carpet on the steps loose or torn?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Make sure the carpet is firmly attached to every step, or remove the carpet and attach non-slip rubber treads to the stairs.</td>
<td></td>
</tr>
<tr>
<td>Are the handrails loose or broken? Is there a handrail only one side of the stairs?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Fix loose handrails, or put in new ones. Make sure handrails are on both sides of the stairs, and are as long as the stairs.</td>
<td></td>
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</tbody>
</table>

### FLOORS

<table>
<thead>
<tr>
<th>Question</th>
<th>Action/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>When you walk through a room, do you have to walk around furniture?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Ask someone to move the furniture so your path is clear.</td>
<td></td>
</tr>
<tr>
<td>Do you have throw rugs on the floor?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Remove the rugs, or use double-sided tape or a non-slip backing so the rugs won't slip.</td>
<td></td>
</tr>
<tr>
<td>Are there papers, shoes, books, or other objects on the floor?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Pick up things that are on the floor. Always keep objects off the floor.</td>
<td></td>
</tr>
<tr>
<td>Do you have to walk over or around wires or cords (like lamp, telephone, or extension cords)?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Coil or tape cords and wires next to the wall so you can’t trip over them. If needed, have an electrician put in another outlet.</td>
<td></td>
</tr>
</tbody>
</table>

### BEDROOMS

<table>
<thead>
<tr>
<th>Question</th>
<th>Action/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the light near the bed hard to reach?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Place a lamp close to the bed where it’s easy to reach.</td>
<td></td>
</tr>
<tr>
<td>Is the path from your bed to the bathroom dark?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Put in a nightlight so you can see where you’re walking. Some nightlights go on by themselves after dark.</td>
<td></td>
</tr>
</tbody>
</table>

### BATHROOMS

<table>
<thead>
<tr>
<th>Question</th>
<th>Action/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the tub or shower floor slippery?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Put a non-slip rubber mat or self-stick strips on the floor of the tub or shower.</td>
<td></td>
</tr>
<tr>
<td>Do you need some support when you get in and out of the tub, or up from the toilet?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Have grab bars put in next to and inside the tub, and next to the toilet.</td>
<td></td>
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</tbody>
</table>

### KITCHEN

<table>
<thead>
<tr>
<th>Question</th>
<th>Action/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are the things you use often on high shelves?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Keep things you use often on the lower shelves (about waist high).</td>
<td></td>
</tr>
<tr>
<td>Is your step stool sturdy?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>If you must use a step stool, get one with a bar to hold on to. Never use a chair as a step stool.</td>
<td></td>
</tr>
</tbody>
</table>
3 Key Questions

1. Have you fallen in the last year?
   • If yes, how many times, were you injured?

2. Do you ever feel unsteady when standing or moving around?

3. Do you worry about falling?

Positive Screening is a “Yes” on any question
Fall Recovery as a Screening Tool

“How did you get up from your fall”
Positive Screenings Need Follow-Up Assessment

COMMONLY DONE:
• Postural hypotension assessment
• Medication Review
• Cognitive Screening
• Visual Acuity Check

LESS COMMON BUT IMPORTANT:
• Balance, Gait, Strength Testing
Post Test Probability (PoTP) (Lusardi et al 2017)

Pre-Test Probability: 30% in community dwelling older adults

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Cut Off</th>
<th>PoTP if +</th>
<th>PoTP if -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Previous Falls</td>
<td>Yes/No</td>
<td>44</td>
<td>26</td>
</tr>
<tr>
<td>Psychoactive Medications</td>
<td>Yes/No</td>
<td>38</td>
<td>26</td>
</tr>
<tr>
<td>ADL assistance</td>
<td>Yes/No</td>
<td>38</td>
<td>26</td>
</tr>
<tr>
<td>Self Report Fear of Falling</td>
<td>Yes/No</td>
<td>38</td>
<td>28</td>
</tr>
<tr>
<td>Ambulatory Assistive Device Use</td>
<td>Yes/No</td>
<td>36</td>
<td>26</td>
</tr>
</tbody>
</table>
Step 2: Evaluate Gait, Strength, and Balance

Leverage the time in visit to observe movement quality

• Observe movements in and out of chairs
• Observe patient ability to get on the examination table
• Watch patient walk into or out of exam room
Step 2: Evaluate Gait, Strength, and Balance

Perform the Timed Up and Go (TUG) (CDC recommended)

Gives information on strength, gait, and balance to guide intervention strategy for mitigating fall risk

Takes less than 1 minute
Formal Assessments of Mobility: Timed up and Go

A cut off score of **12 seconds** is the **screening threshold** value for increased risk

Patient instructions:

- Stand from a chair
- Walk - **AT USUAL PACE** - 3 meters
- Turn around
- Walk back to the chair
- Sit down

Note - issues in postural stability, safety, or gait should be noted.

Even if a person scores above the cut-off of 12 secs, if they are very unsteady or have loss of balance, they are still at an increased risk of falls!
Additional Screenings

Consider medication screening for all patients to identify high-fall risk prescriptions (sedative, opioid analgesics as per Beers Criteria)

Orthostatic blood pressure if appropriate

Cognition (MoCA or SLUMS)

Visual screening (appropriate glasses, prescription, bifocals?)

Footwear screening and sensory testing

Vestibular testing: evaluate hypofunction and potentially Hallpike-Dix test for patients with reported vertigo
Hallpike-Dix Test

First rotate head to the side then start to lie down.

Extend head over the edge of the couch.
Intervention Pathways for Future Fall Prevention

**High Risk (injurious fall, multiple falls, high injury risk)**
- Refer to clinic-based PT/OT
- Community Fall Programs
- Consider home health referral for home inspection and intervention
- Social work involvement for additional resources

**Low to Moderate Risk**
- Refer to community fall prevention programs
- Recommend exercise participation
- Educate on home environment safety

Physical Mobility Impairment
## Evidence-Based Community Programs

<table>
<thead>
<tr>
<th>Low Fall Risk</th>
<th>Moderate Fall Risk</th>
<th>High Fall Risk</th>
<th>Home Care Clients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tai Chi: Moving for Better Balance</td>
<td>Matter of Balance</td>
<td>Matter of Balance</td>
<td>Otago Exercise Program</td>
</tr>
<tr>
<td>EnhanceFitness</td>
<td>Stepping On</td>
<td>Stepping On</td>
<td></td>
</tr>
<tr>
<td>Fit and Strong</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk with Ease</td>
<td></td>
<td></td>
<td></td>
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</table>

(Beattie et al 2014)
Intervention Pathways for Future Fall Prevention

- Consider deprescribing or lowering dose of high risk meds
- Consider compression stockings
- Educate on movement strategies (sit up slowly, change positions carefully)
- Encourage hydration

Polypharmacy or Orthostatic Hypotension
Intervention Pathways for Future Fall Prevention

Visual Impairment

- UPDATE GLASSES
- Eye doctor referral
- Discuss risks of bifocal vs single focal lenses
- Home environment assessment (glare, lighting, etc)
Vertigo

- Phenotype (BPPV?)
- Refer for vestibular rehabilitation from PT or OT
- Use meds sparingly and for short durations (i.e. Meclizine)
Follow up to evaluate barriers and challenges

30-90 day follow up is encouraged to ensure patients are able to participate meaningfully in interventions
Created to help older adults address possible changes and stay safe, mobile, and independent longer.

This planning tool is aimed at adults nearing retirement age and provides information and tips in three main sections:

- **MySelf** – a plan to manage personal health to maintain mobility and stay independent
- **MyHome** – a home safety checklist to help prevent falls
- **MyNeighborhood** – a plan to get around in the community

New CDC Release: My Mobility Plan

https://www.cdc.gov/features/older-adults-mobility/index.html
Created to help older adults address possible changes and stay safe, mobile, and independent longer.

This planning tool is aimed at adults nearing retirement age and provides information and tips in three main sections:

- **MySelf** – a plan to manage personal health to maintain mobility and stay independent
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- **MyNeighborhood** – a plan to get around in the community

**New CDC Release:**

**Coordinated Care Plan**

[Additional Resources](https://www.cdc.gov/steadi/pdf/Steadi-Coordinated-Care-Final-4_24_19.pdf)
Questions?
References and Recommended Readings


References


