Stay STEADI

Introduction to the CDC STEADI and National Fall Prevention Awareness Day

By: Dr. Mariana Wingood, DPT PT GCS CEEAA
Objectives

• Define a fall.
• Understand the Stay STEADI tool and know how to use it.
• Know what to do with the results from the screening.
• Identify Evidence Based Fall Prevention Programs (EBFP).
• Learn about the logistics of Stay STEADI Program held on National Fall Prevention Day.
A fall is defined as any event that leads to an unplanned, unexpected contact with a supporting surface.
Near fall
(Freedman, et. al. 2013)

• A stumble event or loss of balance that would result in a fall if sufficient recovery mechanisms were not activated.

• At least two of the following compensatory mechanism should be activated to be determined as a near fall:
  • unplanned movement of arms or/and leg
  • unplanned change in stride length
  • lowering of the center of mass
  • unplanned change in stride velocity
  • trunk tilt
AGS/BGS Guidelines

• The American Geriatrics Society (AGS): non-profit organization with the goal of improving the health, independence and quality of life of all older people.

• In 2010, AGS working with British Geriatrics Society (BGS) published an updated CPG for Prevention of Falls in Older Persons

• Please visit and list the recommendations in your notes: http://www.americangeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/prevention_of_falls_summary_of_recommendations
CDC’s STEADI Background

• Practitioners were not following AGS/BGS CPG and not inquiring about falls
• STEADI toolkit was created to support PCPs in using the AGS/BGS CPG
• What is it?
  • SCREENING tool for health care providers
  • Multidisciplinary
  • Focus on what can be influenced
  • Evidence basis in risk factor management
Components of the STEADI

• Timed up and Go (TUG)
• 30 second chair stand
• 4 position balance testing

Webinar:
http://www.cdc.gov/steadi/webinar.html
TUG
The Timed Up and Go (TUG) Test

**Purpose:** To assess mobility

**Equipment:** A stopwatch

**Directions:** Patients wear their regular footwear and can use a walking aid if needed. Begin by having the patient sit back in a standard arm chair and identify a line 3 meters or 10 feet away on the floor.

**Instructions to the patient:**

When I say “Go,” I want you to:

1. Stand up from the chair
2. Walk to the line on the floor at your normal pace
3. Turn
4. Walk back to the chair at your normal pace
5. Sit down again

On the word “Go” begin timing.

Stop timing after patient has sat back down and record.

**Time:** _______ seconds

*An older adult who takes ≥12 seconds to complete the TUG is at high risk for falling.*

Observe the patient’s postural stability, gait, stride length, and sway.

**Circle all that apply:** Slow tentative pace ■ Loss of balance ■ Short strides ■ Little or no arm swing ■ Steadying self on walls ■ Shuffling ■ En bloc turning ■ Not using assistive device properly

Notes:
Reliability

- Excellent intrarater reliability (ICC = 0.94)
- Excellent interrater reliability (ICC = 0.99)

**Sensitivity/Specificity:** variable depending on cut-value
TUG Norms (Bohannon 2006)

• Age 60-99: mean 9.4 (8.9-9.9) sec
• Age 60-69: mean 8.1 (7.1-9.0) sec
• Age 70-79: mean 9.2 (8.2-10.2) sec
• Age 80-89: mean 11.3 (10.0-12.7) sec
TUG Norms (Wall, et. al. 2000)

Level of Mobility:
• < 10 sec = freely mobile
• > 20 sec = may need assistive device
• > 30 sec = dependence

Fall Risk: 12 seconds +
30 second chair rise
The 30-Second Chair Stand Test

**Purpose:** To test leg strength and endurance

**Equipment:**
- A chair with a straight back without arm rests (seat 17” high)
- A stopwatch

**Instructions to the patient:**
1. Sit in the middle of the chair.
2. Place your hands on the opposite shoulder crossed at the wrists.
3. Keep your feet flat on the floor.
4. Keep your back straight and keep your arms against your chest.
5. On “Go,” rise to a full standing position and then sit back down again.
6. Repeat this for 30 seconds.

On “Go,” begin timing.

If the patient must use his/her arms to stand, stop the test. Record “0” for the number and score.

Count the number of times the patient comes to a full standing position in 30 seconds.

If the patient is over halfway to a standing position when 30 seconds have elapsed, count it as a stand.

Record the number of times the patient stands in 30 seconds.

**Number:** _______  **Score** _______  See next page.

*A below average score indicates a high risk for falls.*

Notes:
Sit to stand
(Mohammad, et. al. 2010)

• 4 events involved in sit to stand
  • Phase I (flexion-momentum phase) starts with initiation of the movement and ends just before the buttocks are lifted from the seat of the chair.
  
  • Phase II (momentum-transfer phase) begins as the buttocks are lifted and ends when maximal ankle dorsiflexion is achieved.
  
  • Phase III (extension phase) is initiated just after maximum ankle dorsiflexion and ends when the hips first cease to extend; including leg and trunk extension.
  
  • Phase IV (stabilization phase) begins after hip extension is reached and ends when all motion associated with stabilization is completed.
30 second chair rise
(McCarthy, et. al. 2004)

• Criterion Validity
  • **Adequate** validity:
    • hip extensor isokinetic strength: $r = 0.33$
    • hip flexor isokinetic strength: $r = 0.47$
    • knee extensor isokinetic strength: $r = 0.44$
    • knee flexor isokinetic strength: $r = 0.33$
    • ankle plantar flexor isokinetic strength: $r = 0.52$
  • **Poor** validity: ankle dorsiflexion isokinetic strength: $r = 0.21$
## Chair Stand- below average scores

(Rikli and Jones, 2013)

<table>
<thead>
<tr>
<th>Age</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-64</td>
<td>17</td>
<td>15</td>
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<tr>
<td>65-69</td>
<td>16</td>
<td>15</td>
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<tr>
<td>70-74</td>
<td>15</td>
<td>14</td>
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<tr>
<td>75-79</td>
<td>14</td>
<td>13</td>
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<td>80-84</td>
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<td>12</td>
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<tr>
<td>85-89</td>
<td>11</td>
<td>11</td>
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<tr>
<td>90-94</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>
4 stage balance test

1. Feet together stand
   - Hold for 10 seconds

2. Semi-tandem stand
   - The person chooses which foot is placed in front
   - Hold for 10 seconds

3. Tandem stand
   - The person chooses which leg to stand on

4. One leg stand
   - The person chooses which foot is placed in front
   - Hold for 10 seconds
   - Timing starts as soon as the person raises one foot off the ground
   - We chose to extend the maximum length of time of the one leg stand test from 10 seconds to 30 seconds to lessen the ceiling effects of this test
The 4-Stage Balance Test

**Purpose:** To assess static balance

**Equipment:** A stopwatch

**Directions:** There are four progressively more challenging positions. Patients should not use an assistive device (cane or walker) and keep their eyes open.

Describe and demonstrate each position. Stand next to the patient, hold his/her arm and help them assume the correct foot position.

When the patient is steady, let go, but remain ready to catch the patient if he/she should lose their balance.

If the patient can hold a position for 10 seconds without moving his/her feet or needing support, go on to the next position. If not, stop the test.

**Instructions to the patient:** I’m going to show you four positions.

Try to stand in each position for 10 seconds. You can hold your arms out or move your body to help keep your balance but don’t move your feet. Hold this position until I tell you to stop.

For each stage, say “Ready, begin” and begin timing.
After 10 seconds, say “Stop.”

*See next page for detailed patient instructions and illustrations of the four positions.*
Evolution of 4 stage balance test

• Shumway-Cooke and Horak, 1986 “foam and dome” suggestions from the field → CTSIB and modified CTSIB (clinical test of sensory interaction and balance)

• FICSIT (frailty and injuries: cooperative studies of intervention Techniques)

• Components in Berg and other batteries

• BEST; Mini BEST (Balance evaluation systems test)
Postural Hypotension

Measuring Orthostatic Blood Pressure

1. Have the patient lie down for 5 minutes.
2. Measure blood pressure and pulse rate.
3. Have the patient stand.
4. Repeat blood pressure and pulse rate measurements after standing 1 and 3 minutes.

*A drop in bp of ≥20 mm Hg, or in diastolic bp of ≥10 mm Hg, or experiencing lightheadedness or dizziness is considered abnormal.*

<table>
<thead>
<tr>
<th>Position</th>
<th>Time</th>
<th>BP</th>
<th>Associated Symptoms</th>
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</thead>
<tbody>
<tr>
<td>Lying Down</td>
<td>5 Minutes</td>
<td>BP _____ / _____</td>
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<td></td>
<td></td>
<td>HR_________</td>
<td></td>
</tr>
<tr>
<td>Standing</td>
<td>1 Minute</td>
<td>BP _____ / _____</td>
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<td></td>
<td></td>
<td>HR_________</td>
<td></td>
</tr>
<tr>
<td>Standing</td>
<td>3 Minutes</td>
<td>BP _____ / _____</td>
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<td></td>
<td></td>
<td>HR_________</td>
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</tbody>
</table>
What are the symptoms?
Although many people with postural hypotension have no symptoms, others do. These symptoms can differ from person to person and may include:
- Dizziness or lightheadedness
- Feeling about to faint, passing out or falling
- Headaches, blurry or tunnel vision
- Feeling vague or muddled
- Feeling pressure across the back of your shoulders or neck
- Feeling nauseous or hot and clammy
- Weakness or fatigue

When do symptoms tend to happen?
- When standing or sitting up suddenly
- In the morning when blood pressure is naturally lower
- After a large meal or alcohol
- During exercise
- When straining on the toilet
- When you are ill
- If you become anxious or panicky

What causes postural hypotension?
Postural hypotension may be caused by or linked to:
- High blood pressure
- Diabetes, heart failure, atherosclerosis or hardening of the arteries
- Taking some diuretics, antidepressants or medicines to lower blood pressure
- Neurological conditions like Parkinson’s disease and some types of dementia
- Dehydration
- Vitamin B12 deficiency or anemia
- Alcoholism
- Prolonged bed rest

What can I do to manage my postural hypotension?
- Tell your healthcare provider about any symptoms.
- Ask if any of your medicines should be reduced or stopped.
- Get out of bed slowly. First sit up, then sit on the side of the bed, then stand up.
- Take your time when changing position, such as when getting up from a chair.
- Try to sit down when washing, showering, dressing or working in the kitchen.
- Exercise gently before getting up (move your feet up and down and clench and unclench your hands) or after standing (march in place).
- Make sure you have something to hold onto when you stand up.
- Do not walk if you feel dizzy.
- Drink 6-8 glasses of water or low-calorie drinks each day, unless you have been told to limit your fluid intake.
- Avoid taking very hot baths or showers.
- Try sleeping with extra pillows to raise your head.
Other Screening Tools
# Check Your Risk for Falling

Please circle “Yes” or “No” for each statement below.

<table>
<thead>
<tr>
<th>Yes (2)</th>
<th>No (0)</th>
<th>I have fallen in the past year.</th>
<th>People who have fallen once are likely to fall again.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (2)</td>
<td>No (0)</td>
<td>I use or have been advised to use a cane or walker to get around safely.</td>
<td>People who have been advised to use a cane or walker may already be more likely to fall.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>Sometimes I feel unsteady when I am walking.</td>
<td>Unsteadiness or needing support while walking are signs of poor balance.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>I steady myself by holding onto furniture when walking at home.</td>
<td>This is also a sign of poor balance.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>I am worried about falling.</td>
<td>People who are worried about falling are more likely to fall.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>I need to push with my hands to stand up from a chair.</td>
<td>This is a sign of weak leg muscles, a major reason for falling.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>I have some trouble stepping up onto a curb.</td>
<td>This is also a sign of weak leg muscles.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>I often have to rush to the toilet.</td>
<td>Rushing to the bathroom, especially at night, increases your chance of falling.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>I have lost some feeling in my feet.</td>
<td>Numbness in your feet can cause stumbles and lead to falls.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>I take medicine that sometimes makes me feel light-headed or more tired than usual.</td>
<td>Side effects from medicines can sometimes increase your chance of falling.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>I take medicine to help me sleep or improve my mood.</td>
<td>These medicines can sometimes increase your chance of falling.</td>
</tr>
<tr>
<td>Yes (1)</td>
<td>No (0)</td>
<td>I often feel sad or depressed.</td>
<td>Symptoms of depression, such as not feeling well or feeling slowed down, are linked to falls.</td>
</tr>
</tbody>
</table>

**Total** Add up the number of points for each “yes” answer. If you scored 4 points or more, you may be at risk for falling. Discuss this brochure with your doctor.

*This checklist was developed by the Greater Los Angeles VA Geriatric Research Education Clinical Center and affiliates and is a validated fall risk self-assessment tool (Rubenstein et al. J Safety Res; 2011:42(6):493-499). Adapted with permission of the authors.*
<table>
<thead>
<tr>
<th>Fall Risk Factor Identified</th>
<th>Factor Present?</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Falls History</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any falls in past year?</td>
<td></td>
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</tr>
<tr>
<td>Worries about falling or feels unsteady when standing or walking?</td>
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<tr>
<td><strong>Medical Conditions</strong></td>
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<tr>
<td>Problems with heart rate and/or rhythm</td>
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<tr>
<td>Cognitive impairment</td>
<td></td>
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<tr>
<td>Incontinence</td>
<td></td>
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<tr>
<td>Depression</td>
<td></td>
<td></td>
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<tr>
<td>Foot problems</td>
<td></td>
<td></td>
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<tr>
<td>Other medical conditions (Specify)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Medications (Prescriptions, OTCs, supplements)</strong></td>
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<tr>
<td>CNS or psychoactive medications</td>
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<td></td>
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<tr>
<td>Medications that can cause sedation or confusion</td>
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<td></td>
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<tr>
<td>Medications that can cause hypotension</td>
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</tr>
<tr>
<td><strong>Gait, Strength &amp; Balance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timed Up and Go (TUG) Test ≥ 12 seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-Second Chair Stand Test Below average score based on age and gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-Stage Balance Test Full tandem stance &lt;10 seconds</td>
<td></td>
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<tr>
<td><strong>Vision</strong></td>
<td></td>
<td></td>
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<tr>
<td>Acuity &lt;20/40 OR no eye exam in &gt;1 year</td>
<td></td>
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</tr>
<tr>
<td><strong>Postural Hypotension</strong></td>
<td></td>
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</tr>
<tr>
<td>A decrease in systolic BP ≥ 20 mm Hg or a diastolic bp of ≥ 10 mm Hg or lightheadedness or dizziness from lying to standing?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Risk Factors (Specify)</strong></td>
<td></td>
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</tbody>
</table>
A Home Fall Prevention Checklist for Older Adults

CHECK FOR SAFETY

**FLOORS:** Look at the floor in each room.

**Q:** When you walk through a room, do you have to walk around furniture?
- Ask someone to move the furniture so your path is clear.

**Q:** Do you have throw rugs on the floor?
- Remove the rugs or use double-sided tape or a non-slip backing so the rugs won’t slip.

**Q:** Are there papers, books, towels, shoes, magazines, boxes, blankets, or other objects on the floor?
- Pick up things that are on the floor. Always keep objects off the floor.

**Q:** Do you have to walk over or around wires or cords (like lamp, telephone, or extension cords)?
- 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.
STAIRS AND STEPS:
Look at the stairs you use both inside and outside your home.

Q: Are there papers, shoes, books, or other objects on the stairs?
☐ Pick up things on the stairs. Always keep objects off stairs.

Q: Are some steps broken or uneven?
☐ Fix loose or uneven steps.

Q: Are you missing a light over the stairway?
☐ Have an electrician put in an overhead light at the top and bottom of the stairs.

Q: Do you have only one light switch for your stairs (only at the top or at the bottom of the stairs)?
☐ Have an electrician put in a light switch at the top and bottom of the stairs. You can get light switches that glow.

Q: Has the stairway light bulb burned out?
☐ Have a friend or family member change the light bulb.

Q: Is the carpet on the steps loose or torn?
☐ Make sure the carpet is firmly attached to every step, or remove the carpet and attach non-slip rubber treads to the stairs.

Q: Are the handrails loose or broken? Is there a handrail on only one side of the stairs?
☐ 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.
**KITCHEN:** Look at your kitchen and eating area.

**Q:** Are the things you use often on high shelves?

☐ Move items in your cabinets. Keep things you use often on the lower shelves (about waist level).

**Q:** Is your step stool unsteady?

☐ If you must use a step stool, get one with a bar to hold on to. Never use a chair as a step stool.

**BATHROOMS:** Look at all your bathrooms.

**Q:** Is the tub or shower floor slippery?

☐ Put a non-slip rubber mat or self-stick strips on the floor of the tub or shower.

**Q:** Do you need some support when you get in and out of the tub or up from the toilet?

☐ Have grab bars put in next to and inside the tub and next to the toilet.
BEDROOMS: Look at all your bedrooms.

Q: Is the light near the bed hard to reach?
☐ Place a lamp close to the bed where it’s easy to reach.

“I put a lamp on each side of my bed. Now it’s easy to find the light if I wake up at night.”

Q: Is the path from your bed to the bathroom dark?
☐ Put in a night-light so you can see where you’re walking. Some night-lights go on by themselves after dark.
What to do with the Results?
Algorithm for Fall Risk Assessment & Interventions

Patient completes Stay Independent brochure

Assess fall risk
Patient scores ≥ 4 on the Stay Independent brochure
or
Clinician asks key questions:
• Fell in past year?
  - IF YES ask, How many times? Were you injured?
• Feels unsteady when standing or walking?
• Worries about falling?

Score ≥ 4
or
YES to any key question

Evaluate gait, strength & balance
• Timed Up & Go (recommended)
• 30 Second Chair Stand (optional)
• 4 Stage Balance Test (optional)

Gait, strength or balance problem

≥ 2 falls
1 fall
0 falls

Conduct multifactorial risk assessment
• Review Stay Independent brochure
• Falls history
• Physical exam including:
  - Postural dizziness/postural hypotension
  - Medication review
  - Cognitive screening
  - Feet & footwear
  - Use of mobility aids
  - Visual acuity check

Recommend LOW RISK fall interventions
• Educate patient
• Vitamin D +/- calcium
• Refer for strength & balance exercise (community exercise or fall prevention program)

Score < 4
or
NO to all questions

Recommend MODERATE RISK fall interventions
• Educate patient
• Vitamin D +/- calcium
• Refer to PT to improve gait, strength & balance
  or
  refer to a community fall prevention program

No gait, strength or balance problems

Follow up with patient within 30 days
• Review care plan
• Assess & encourage fall risk reduction behaviors
• Discuss & address barriers to adherence
  Transition to maintenance exercise program when patient is ready

Low Risk

Moderate Risk

High Risk

Injury
No injury
Classifying Level of Risk
(Beattie, 2014)

High Risk
• Reports recurrent falls in the past year, presents for medical attention because of a fall, or reports difficulties in walking or balance.
• Recommendation: Further clinical assessment, treatment, and referral.

Moderate Risk
• Reporting only a single fall + reporting/demonstrating no difficulty/unsteadiness of gait and balance
• Recommendations:
  • do not require a fall risk assessment but should be counseled to adopt fall-prevention strategies of maintaining a physically active lifestyle, monitoring medications, obtaining an annual eye examination, and making timely safety enhancing modifications in their homes
  • Referrals to community-based, fall-prevention, and physical activity programs are warranted.

Low Risk
• Reports no fall and does not demonstrate gait and balance difficulties
• Recommendation: same as Moderate because low risk does not mean no risk of falls.
Referrals
Recommendation for Referral

- Gait or mobility problems
- Balance difficulties
- Lower body weakness

- Medication review & consultation
- Inadequate or improper footwear
- Foot abnormalities
- Postural hypotension
- Vision <20/40
- Suspected neurological condition (e.g., Parkinson’s disease, dementia)
- Home safety evaluation
# Fall Prevention Patient Referral Form

**ENTER HEALTHCARE PROVIDER ORGANIZATION NAME AND ADDRESS HERE**

<table>
<thead>
<tr>
<th>Patient:</th>
<th>Referred to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex: DOB:</td>
<td>Address:</td>
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<tr>
<td>Address:</td>
<td>Phone:</td>
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<tr>
<td>Phone:</td>
<td>Email:</td>
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<td>Email:</td>
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<td>Diagnosis:</td>
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</tbody>
</table>

**Type of Referral**

- Type of specialist (See back of form):
- Exercise or fall prevention program (See nurse for options):

**Reason for Referral**

<table>
<thead>
<tr>
<th>Gait or mobility problems</th>
<th>Medication review &amp; consultation</th>
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</thead>
<tbody>
<tr>
<td>Balance difficulties</td>
<td>Inadequate or improper footwear</td>
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<tr>
<td>Lower body weakness</td>
<td>Foot abnormalities</td>
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<tr>
<td>Postural hypotension</td>
<td>Vision &lt;20/40 in R L Both</td>
</tr>
<tr>
<td>Suspected neurological condition (e.g., Parkinson's disease, dementia)</td>
<td>Home safety evaluation</td>
</tr>
</tbody>
</table>

Other reason: 

Other relevant information: 

<table>
<thead>
<tr>
<th>Referrer signature:</th>
<th>Date:</th>
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</table>
## Recommended Fall Prevention Programs

<table>
<thead>
<tr>
<th>Programs</th>
<th>Location</th>
<th>Day &amp; Time</th>
<th>Cost</th>
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**Notes:**

Research shows that to reduce falls, exercises MUST focus on improving balance and strength, be progressive (get more challenging over time), and be practiced for at least 50 hours. This means, for example, taking a 1-hour class 3 times a week for 4 months, or a 1-hour class 2 times a week for 6 months.

The National Institute on Aging has created an exercise guide for healthy older adults to use at home. You can order this free book by going to: [www.nia.nih.gov/HealthInformation/Publications/ExerciseGuide](http://www.nia.nih.gov/HealthInformation/Publications/ExerciseGuide).
Referrals

Have a list of 3+ providers in the following Healthcare fields

• Physical Therapist: See next slide

• Occupational Therapist: Home Evaluations/Assessments, Vision Evaluation and recommendation, Perform Cognitive Evaluations and recommendations, Assist with ADL's and iADL's, Drivers Rehab, and Adaptive Equipment

• Personal trainers for individual fitness motivation if PT is not indicated

• Podiatrist/orthotists: for shoe/orthotic fitting

• Pharmacist: regarding education about medication

• Recommend pt talk to their Primary care providers about possible need for:
  • Neurologist: if any numbness, tingling, vertigo, f/u to head trauma, etc.
  • Geriatrician for multiple comorbidities
  • Ophthalmologist or optometrist (Medicare pays for ophthalmologist) for vision care
  • Psychological support for depression, anxiety
Physical Therapists

• You many include yourself on a list of 3 or more providers.
• Give people things to look for like GCS or NCS after the name.
• When possible, give specific contact information
• Include providers who are Otago certified or teach Stepping On® classes locally
Recommendations for Physical Activity  (Sparling, et. al. 2015)

• 150 minutes a week
  • moderate intensity activity
  • bouts of 10 minutes or more
  • 30 minutes of brisk walking or equivalent activity five days a week

• 75 minutes of vigorous intensity activity spread across the week

• OR a combination of moderate and vigorous activity

• Strengthening:
  • at least two days a week
  • 48 hours rest between

• Balance Training: every day
EBFPPs

- Otago Exercise Program
- Matter of Balance (MOB)
- FallsTalk and FallScape
- Moving for Better Balance
- Stay Active and Independent for Life (SAIL)
- Stepping On
- Tai Chi
  - Tai Chi for Arthritis
  - Tai Ji Quan: Moving for Better Balance
Otago

• Website: www.med.unc.edu/aging/cgec/exercise-program

• Goals:
  • Increase strength, balance, and endurance.
  • Lifestyle change to incorporate strength and balance training a minimum of 2 hours per week.

• Target Audience:
  • Community-dwelling frail older adults.
  • Most effective for those who are age 80 and over or 65 and older and frail.
  • Can be implemented in the home, outpatient, assisted living facilities as well as in the community
Otago

• Program Description:
  • 4-5 visits with a physical therapist (PT) over 8 weeks with monthly phone calls for a year and optional follow up visits at 6, 9, and 12 months
  • 17 exercises total – the PT evaluates the older adult and selects the most appropriate exercises from the 17 to challenge the older adult.
  • The exercises are progressed to continue to challenge the older adult as they improve strength and balance
  • Exercises performed for approximately 30 minutes three times a week.
  • When strong enough to walk for exercise, a walking program is prescribed and progressed to up to 30 minutes three times a week
  • Can be done in the home independently or with assistance, or in a group exercise settings as long as they do their prescribed exercises

• Delivered By:
  • The initial evaluation and prescription is done by a licensed physical therapist
  • The follow up visits can be done by a licensed physical therapy assistant
  • The follow up phone calls can be done by the PT, a health coach, or other individual who is able to communicate progress to the PT
Otago

• Training Requirement:
  • “Otago Exercise Program Online Training for Physical Therapists”
  • Optional participation in a free database to track patient progress and program fidelity at www.otagoexerciseusa.com
  • Therapists and agencies who participate in the database are eligible to be promoted nationally for offering the OEP

• Cost: Online training cost $25; Therapists receive up to 3.0 CEUs upon completion
MOB

• Website: http://www.mainehealth.org/mob

• Goals:
  • Reduce fall risk and fear of falling
  • Improve falls self-management
  • Improve falls self-efficacy and promote physical activity

• Target Audience:
  • 60+ y.o.
  • ambulatory, able to problem solve, concerned about falling
  • restricted their activities because of concerns about falling
MOB

• Description:
  • 8 weekly or twice weekly sessions
  • 2 hours per session
  • 8-12 group participants
  • Emphasizes practical coping strategies to reduce fear of falling and teach fall prevention strategies
  • Structured group intervention activities include group discussion, problem-solving, skill building, assertiveness training, videos, sharing practical solutions and exercise training

• Training Requirement:
  • Master Trainers: 2-day training and on-going updates
  • Coach/Lay leader training: 8 hours and attend annual 2.5 hour training update

• Program Cost:
  • Licensing Cost: None.
  • Training Cost: $1,500 per Master Trainer plus travel
FallsTalk and FallScape

• Website: [http://www.fallscape.org/](http://www.fallscape.org/)

• Goals:
  • Increase falls prevention behaviors and falls self-management skills
  • Improve recognition of fall threats (personal traits and circumstances that could cause a fall) & self-efficacy
  • Prevent participant falls and reduce fall risk.

• Target Audience: 50+ y.o. who have fallen/are experiencing regular loss of balance, + are at risk for falls/are concerned about falling.
FallsTalk

• **Description:**
  • 1-6 month personalized behavior change program
  • **Includes:**
    • evidence-based fall risk screening and standardized FallsTalk interview (10-20 minutes) which creates customized intervention components and reports
    • fall-related log training (5-10 min.)
    • telephone check-ins (2-5 min. each)
    • follow-up interview and log review (10-20 min.)

• **Training Requirements**
  • 1-2 days which can be completed separately
  • In-person training is mandatory to insure program fidelity, no specific educational pre-requisites
  • Included software matches trainee’s abilities
  • Training is offered at various sites or can be delivered on-site for groups by custom arrangement
FallScape

• **Description:**
  • 1-6 month personalized multimedia behavior change program delivered in two to four one-on-one sessions utilizing easy-to-use software (provided) that includes
    • Evidence based fall risk screening and standardized FallsTalk interview (10-20 minutes)
    • FallScape interactive multimedia training (one or two 15-30 min. sessions)
    • Fall-related log training (5-10 min)
    • Telephone check-ins (2-5 min. each)
    • Follow-up interview and log review (10-20 min.)
    • FallScape interactive multimedia evaluation (10-15 min.)

• **Training Requirement:**
  • 1-2 days which must be completed separately.
  • 2 days of FallsTalk training and demonstration of competency are required before FallScape training can begin (course outline on website)
  • Included software matches trainee’s abilities
  • Training is offered at various sites or can be delivered on-site for groups by custom arrangement.
Moving For Better Balance

• Website: Contact your local YMCS

• Goals: 12-week group program designed to help participants improve their strength, balance, flexibility, and mobility through the slow and therapeutic movements of Tai Chi, a graceful form of exercise and deep breathing

• Target Audience:
  • 65 y.o.+ or 45 y.o.+ with chronic condition that may impact balance
  • physically mobile, with impaired stability and/or mobility

• Description:
  • 12-week program which includes:
    • 2 class sessions per week
    • 2+ hours of at-home practice per week

• Training and Cost: Contact your local YMCA
SAIL

- Website: [http://www.synapticseminars.com/](http://www.synapticseminars.com/)
- Goal: Physical activity program that reduces fall risk factors by increasing strength.
- Target Audience: 65 years and older
- Description
  - An on-going class
  - 3 times per week for one hour.
  - Each class includes warm-up, aerobics, balance activities, strengthening and stretching exercises that can be done seated or standing; and educational components.
  - Periodic Fitness Checks assess general mobility, arm strength, and leg strength.
  - SAIL Guides supplement class activities by providing written education information to prevent falls by addressing fall risk factors.
SAIL

• Training:
  • Complete 1-day (8 hour) SAIL Program Leader Training OR Complete 10-week online class through Pierce College with Continuing Education Units awarded upon course completion.
  • The online course is available quarterly: http://www.pierce.ctc.edu/el/sail
  • Background in fitness or exercise science. CPR certified
Stepping On

• Website: https://www.ncoa.org/resources/program-summary-stepping-on/

• Goal: Offer strategies and exercises to reduce falls and increase self-confidence in making decisions and behavioral change in situations where older adults are at risk of falling.

• Target Audience: Community-residing, cognitively intact, older adults who are at risk of falling, have a fear of falling or who have fallen one or more times in a year.

• Description:
  • 7 weeks
  • 2 hrs per week
  • A home visit /follow-up phone call by the program leader, to facilitate follow-through with preventive strategies and to assist with home adaptations
  • 2-hour booster session after 3 months
Tai Chi for Arthritis

• Website: http://taichiforhealthinstitute.org

• Goal:
  • Improve movement, balance, strength, flexibility, and relaxation
  • Decrease pain and falls

• Target Audience: Adults with or without arthritis, rheumatic diseases or related musculoskeletal conditions. The program is appropriate for people with mild, moderate and severe joint involvement and back pain.
Tai Chi for Arthritis

• Description:
  • 8-10 week program
  • 45-60 minutes per class 1 to 2 times per week
  • Each session includes:
    • Warm-up and cool-down exercises
    • 6 basic core movements and 6 advanced movements
    • Breathing Techniques - Movements are performed at a higher stance to make it easier for older participants and those with arthritis.
    • Movements can be modified to accommodate mobility issues for any participant – can also be done seated as a starting exercise.

• Training:
  • Contact a master trainer: [http://taichiforhealthinstitute.org/instructors/mastertrainers/?region=&fn=Find&countryid=233&region=&fn=Find](http://taichiforhealthinstitute.org/instructors/mastertrainers/?region=&fn=Find&countryid=233&region=&fn=Find)
  • Recertification training every 2 years (one-day training)
  • CPR certified
Tai Ji Quan: Moving for Better Balance

• Website: http://www.ncoa.org/improvehealth/center-orhealthy-aging/tai-chimoving-forbetter.html

• Goal: Improve balance, strength and physical performance for older adults to reduce fall frequency.

• Target Audience: 65 years and older

• Description:
  • 24-26 week program
  • 3 classes a week/1 hour per class
  • 8 Tai Chi forms that focus on weight shifting, postural alignment, coordinated movements and synchronized breathing
  • Slow, low-impact movements that emphasize weight-shifting and postural alignment; movements progress from easy to more difficult
  • Recommended class size of 15 participants
Tai Ji Quan: Moving for Better Balance

- **Training:**
  - 2-day training
  - Familiarity with Tai Chi fundamental principles and major postures and movements
  - Experience in classical Yang style
National Fall Prevent Awareness Day - Event Detail
National Fall Prevention Awareness Day

**Date:** First day of Fall

**Purpose:** Raise awareness about how to prevent fall-related injuries among older adults.

**Resources:**
- National Council on Aging: [www.ncoa.org](http://www.ncoa.org)
- [www.stopfalls.org](http://www.stopfalls.org)
- Academy of Geriatrics Balance and Falls SIG: [www.geriatricspt.org](http://www.geriatricspt.org)
- Find your states Falls Free Coalition.
Possible Events related to Fall Prevention Awareness Day

- Fall Prevention Screening: Using the Center of Disease Control (CDC) Stop Elderly Accidents, Deaths, and Injury (STEADI) Screening Tool.
- Attending Health Fares.
- Presentations for the Community Dwelling Older Adults.
- In-services: for nursing home staff, assisted living facilities, and hospital staff.
- Informational Table set up at your Clinic/Hospitals Entrance.
- Table set up within the community with or without screening performed in a separate room.
- Educate local doctors, physician assistants, and nurses about the CDC STEADI Screening Tool.
- Tai Chi Demonstrations.
Example of a STEADI Screening Event

• Slide show/Power point
• Individualized screenings
• Individualized result sheet with recommendations
• 1:1 with a healthcare providers to answer any questions
  • OT- home evaluation
  • Pharmacist- med safety
  • SLP-memory aids
  • RN- orthostatic hypotension
  • Podiatrist- appropriate shoes
Slideshow

• 20 minutes to deliver with practice
• We’ve had good responses, even repetitiously
• Uses multisystem approach to educating elders about balance. Toolbox approach
• Prepares people for performance tests
• Review ahead of time if interested.
Other Discussions

• Is the participant able to get up off the floor?
• Is the participant afraid of falling?
• Have they ever had a home evaluation?
• Have they had a fall in the last year?
General Recommendations

• 30 minutes of exercise/day, 5 days a week
• Get a referral to a physical therapist for
• Check your home for hazards
• Talk to your doctor about:
  • Postural dizziness/hypotension
  • Cognitive screening
  • Medication review
• Get your vision checked yearly
• See a podiatrist
• Other:
  • Stay Active
  • Otago Exercise Program
Will seniors bring their STEADI fall risk screening results to their doctors?  
(Carmody, 2014)

- **BACKGROUND/PURPOSE:** One out of three older adults (65+) fall and in this population, falling is the leading cause of injuries and nursing home admission. Leaders in the field suggest health care providers (HCPs) use the STEADI (Stopping Elderly Accidents Death and Injury) Toolkit developed by the CDC. However, our previous study showed that many barriers prevent San Diego HCPs from conducting fall risk screenings in the clinic environment. Therefore, our Fall Prevention Taskforce had physical therapists, PT students, and fitness professionals use the STEADI toolkit and instructed participants to take their results to their doctor to start the fall prevention conversation.

- **METHODS:** Six events were held in community centers around San Diego County and screenings from the STEADI toolkit were conducted with 313 individuals. Participants who agreed were called several months later and 151 completed our survey.

- **RESULTS/OUTCOMES:** Thirty-four participants shared their balance screening results with their HCP. Another 25 participants reported having a discussion about falls with their HCP due to their experience with the STEADI screenings. Thus, a total of 39% of the screening participants followed up with their HCP in some way. Some who did not share results with their HCP reported taking other actions (e.g., joining an exercise class). Additional analysis will explore how the level of risk identified was related to the likelihood of acting on the results.

- **CONCLUSIONS:** Community events using the STEADI fall risk screenings are a very promising method of prompting seniors to discuss fall prevention with their health care providers.
Mrs. Booker

Age: 76 year-old

Fall Risk Screening Results:

• Stay Independent Brochure
  • “I have fallen in the last 6 months”
  • “I take medicine to help me sleep or improve my mood”

• TUG: 12 seconds - c decreased arm swing

• 30STS: 14x

• 4 Stage Balance Test: Position 3 for 10 seconds

• Medications Depakote, Zyprexa, Ativan, Levothyroxine, Colace, and Tylenol
Mrs. Booker’s Recommendations

• Emphasize that a fall is not simply “bad luck” or an “accident” that will never happen again.

• Provide the CDC fall prevention brochures, What You Can Do to Prevent Falls and Check for Safety.

• Provide the Chair Rise Exercise handout and suggest she begin doing this exercise daily.

• Refer to a community exercise, fitness, or fall prevention program to optimize leg strength and balance by including strength and balance exercises as part of her exercise routine.

• Refer to primary care- ask pt to talk to PCP about her medications.
Mr. Ying

**Age:** 84 years old

**Fall Risk Screening Results:**

- Stay Independent brochure in the waiting room.
  - “I use or have been advised to use a cane or walker to get around safely”
  - “Sometimes I feel unsteady when I am walking”
  - “I am worried about falling”
- TUG: 15 seconds using his cane. Gait: slow with shortened stride and essentially no arm swing. No tremor, mild bradykinesia.
- 30 STS: 9
- 4 Stage Balance Test: feet side by side for 10 seconds but in a semi-tandem stance loses his balance after 3 seconds.
- Medications: Valsartan, Citalopram, Flomax, Finasteride, Lipitor, Omeprazole, Cyanocobalamin, Claritin, Flonase, Gabapentin, Tylenol, Brimonidine, Cosopt, Latanoprost, and Calcium carbonate
Mr. Ying’s Recommendations

• Provide the CDC fall prevention brochures, What You Can Do to Prevent Falls and Check for Safety.

• Refer to PCP: recommend discussing medications and orthostatic hypotension with PCP

• Recommend that pt see PCP and mention the need for physical therapy for gait assessment, to increase leg strength and improve balance, and for instruction on how to use a cane correctly.
References


• James C. Wall, PhD; Churan Bell, BS; Stewart Campbell; Jennifer Davis. 2000. The timed get-up-and-go test revisited: Measurement of the component tasks Journal of Rehabilitation Research and Development 37 (1)


• Mohammad R. Fotoohabadi, Elizabeth A. Tully and Mary P. Galea Kinematics of Rising From a Chair: Image-Based Analysis of the Sagittal Hip-Spine Movement Pattern in Elderly People Who Are Healthy Physical Therapy April 2010 vol. 90 no. 4 561-571 )
