CONTINUING EDUCATION
for Occupational Therapists

OCCUPATIONAL THERAPY PRACTITIONERS
STEPPING UP:
ADDRESSING FALLS AND FEAR OF FALLING AMONG
COMMUNITY-DWELLING OLDER ADULTS

PDH Academy Course #OT-1708 | 3 CE HOURS

This course is offered for 0.3 CEUs (Intermediate level; Category 2 – Occupational Therapy Process: Evaluation; Category 2 – Occupational Therapy Process: Intervention; Category 2 – Occupational Therapy Process: Outcomes).

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Course Abstract
This continuing education course provides occupational therapy practitioners, particularly those working with community-dwelling older adults, with pertinent information regarding falls and fear of falling. It addresses multifaceted fall risk factors, clinical practice guidelines, and strategies for use in implementing evidence-based screenings, evaluations, and interventions for both fall risk and fear of falling. Throughout, it references the American Geriatrics Society/British Geriatrics Society Clinical Practice Guideline: Prevention of Falls in Older Persons (American Geriatrics Society and British Geriatrics Society, 2010), the Stopping Elderly Accidents, Deaths, and Injuries program (Centers for Disease Control, 2016a; 2016b; 2013), the Occupational Therapy Practice Framework, 3rd edition (American Occupational Therapy Association, 2014), and the goals of the Falls Free®: 2015 National Falls Prevention Action Plan.

Target audience: Occupational Therapists, Occupational Therapy Assistants (no prerequisites).

NOTE: Links provided within the course material are for informational purposes only. No endorsement of processes or products is intended or implied.

Learning Objectives
At the end of this course, learners will be able to:

❏ Recall statistics related to falls and fear of falling
❏ Identify intrinsic and extrinsic fall and fear of falling risk factors
❏ Recognize the applicability of key elements of the Stopping Elderly Accidents, Deaths, and Injuries (STEADI) toolkits to occupational therapy practice
❏ Differentiate between the intervention ratings recommended by the American Geriatrics Society/British Geriatrics Society Clinical Practice Guideline: Prevention of Falls in Older Persons
❏ Recognize the components of a multifactorial fall risk assessment and related interventions
INTRODUCTION

Falls among adults 65 years and older may negatively impact quality of life and occupational performance, are the leading cause of unintentional death, and lead to a tremendous use of health care services including premature skilled nursing home admissions (Houry, Florence, Baldwin, Stevens, & McClure, 2015). In fact, the Centers for Disease Control and Prevention (CDC) recently indicated that by 2030 fall-related fatalities will increase to at least 100,000 annually, with an associated direct medical cost of $101 billion (Houry et al., 2015).

There has been much research among health care disciplines to gain a better understanding of the associated fall risk factors and efficacious interventions. However, there is still much to be learned.

It is not unusual for healthcare professionals, including occupational therapy practitioners, to ignore falls, fear of falling, and their negative ramifications in regards to occupational performance, activity engagement, and quality of life. This is possibly due to:

1) not enough time to devote to assessing fall history and/or lack of knowledge in the evaluation and/or intervention/referral process associated with falls and fear of falling;
2) lack of knowledge of community resources that provide evidence-based fall interventions;
3) healthcare professional(s), older adult, and/or family member(s) thinks falling is a normal part of aging, so there is nothing that can be done;
4) older adult does not share fall history or almost falls because of the fear of losing independence including living arrangement;
5) lack of or minimal fall-related injury occurred, so older adult does not consider the fall important enough to report it; and,
6) older adults’ lack of recall of falling and surrounding circumstances.

(Enderlin, et al., 2015)

This course will help occupational therapy practitioners to understand their roles in identifying and addressing the multi-faceted factors associated with fall prevention and fear of falling. Additionally, current evidence-based practice is provided to assist occupational...
therapy practitioners in addressing falls and fear of falling among community-dwelling older adults.

The recently revised Falls Free®: 2015 National Falls Prevention Action Plan (hereafter known as Action Plan) provides healthcare professionals, aging federal and state agencies, and professional, consumer, corporate, and foundation entities with guidance in addressing issues surrounding falls prevention over the next decade (Cameron, Schneider, Childress, & Gilchrist, 2015). The overall vision of the Action Plan is: “Older adults will have fewer falls and fall-related injuries, maximizing their independence and quality of life.” Its overall goal is: “To implement a National Action Plan with specific goals and strategies to effect sustained initiatives that reduce falls among older adults,” (Cameron, et al., 2015 p.8). Established goals from this Action Plan will be provided throughout this course, and you will find there are numerous roles for occupational therapy practitioners in meeting the Action Plan’s vision and goals.

**ADDITIONAL IMPACT**

To learn more about specific action strategies and action plans in addressing each of the identified goals in this course, you can review the Action Plan document in its entirety at [https://www.ncoa.org/healthy-aging/falls-prevention/2015-falls-prevention-action-plan/] (Cameron, et al., 2015).

**Falls: Definition, Prevalence, Injuries, and Mortality**

For the purposes of this course, a fall is described as “an event which results in a person coming to rest inadvertently on the ground or floor or other lower level” (World Health Organization [WHO], 2012, p.1). A fall does not include events that could cause anyone at any age to fall, such as seizure or being hit by a grocery cart (WHO, 2012).

Nationally, at least 33% of adults over age 65, and nearly 50% of those over age 80, fall every year; half of these fallers will fall again. However, evidence points to a hidden epidemic of falls among older adults: 75-80% of falls with no injuries are never reported (Ambrose, Paul, & Hausdorff, 2013; Bergen, Stevens, & Burns, 2016; Luk, Chan, & Chan, 2015). Additionally, community-dwelling adults 75 and older are 4-5 times more likely to be admitted to a skilled nursing facility for a year or longer due to a fall (CDC, 2014a; Panel on Prevention, 2011) – and skilled nursing facility residents have an even higher prevalence, 50-75%, of falling annually (CDC, 2014a). Thus, it is important to determine if your older clients have incurred a recent fall, with or without an injury.

Every 13 seconds an older adult is seen in the Emergency Department (ED) for a fall-related injury, and every 29 minutes an older adult dies from a fall (Cameron, Schneider, Childress, & Gilchrist, 2015). Of those who have fallen and have been seen in the ED, 30-50% only sustain minor abrasions and bruises while 20-30% incur moderate-to-severe injuries that may interfere with mobility, independence, and/or increase the chance of early death (Ambrose, Paul, & Hausdorff, 2013; Enderlin, et al., 2015; Frank-Wilson, et al., 2016; Quach & Burr, 2016). Almost 49% of fall-related deaths are caused by traumatic brain injuries (Stevens & Rudd, 2014).

Based on the Hospitals’ Emergency Department (ED) Participants in the National Electronic Injury Surveillance System All Injury Program from 2001-2008, it was determined 66% of all fall-related injuries requiring an ED visit occurred in the home and were among Caucasians (Orces, 2013). This finding supports the need for occupational therapy practitioners to address the environment for all older adults who have sustained a fall-related injury. Older women, particularly the oldest of the old, were 40-60% more likely to visit an Emergency Department due to a fall-related fracture (Orces, 2013).

The most common types of fractures associated with falls include the hip, spine, forearm, leg, ankle, pelvis, upper arm, wrist, and/or hand. Women are three times more likely to sustain a hip fracture, and 95% of all hip fractures are caused by a fall (CDC, 2014a; CDC, 2014b; WHO, 2012). Older adults over the age of 85 are 10-15 times more likely to sustain a hip fracture. Of those older adults with a hip fracture, one in ten will die within the first year after the fracture, and of the remaining nine of the ten people, half will never regain their previous functional level (CDC, 2014a; CDC, 2014b; WHO, 2012).

The prevalence of fall-related injuries may be even higher based on how a person’s injury is coded using ICD-10 (Stevens & Rudd, 2014). For example, was the injury coded for a fall, or was it coded for the specific injury? Further, current and future fall research is and will lead investigators in determining the underlying chronic diagnoses leading to falls, fall-related injuries, and death, and perhaps develop a better system to report falls as the underlying cause of a person’s death rather than the outcome of the death (i.e. fall vs. hip fracture) (Stevens & Rudd, 2014).

Rarely is there just one cause of someone falling; rather, a fall may be caused by numerous intrinsic and/or extrinsic risk factors which may or may not be modifiable (Ambrose, et al., 2013; American Geriatrics/British Geriatrics Society [AGS/BGS], 2010; Kumar, et al., 2014; Panel on Prevention, 2011). Thus, falls among older adults are considered to be multi-faceted and may involve either multifactorial or multiple component interventions (Hopewell, et al., 2016). The former is based on older adult’s individualized needs after a comprehensive fall risk assessment, while multiple component interventions relate to providing the same intervention(s) to a group of people regardless of his or her individual fall risks.
Currently, Hopewell and associates (2016) are in the process of updating Gillespie and colleagues’ 2012 Cochrane database systematic review on fall prevention among community-dwelling older adults, using both multifactorial and multiple component interventions. Their extensive review should help healthcare professionals in providing evidence-based fall prevention interventions.

A person is considered a high risk for future falls if the older adult has sustained two or more falls or has had one or more fall related injuries during the past year, and/or is taking four or more prescriptions, otherwise known as polypharmacy. An older adult who has fallen or reported near falls, frequent slips and trips, etc. in the past year is at a moderate risk for falling in the future (AGS/BGS, 2010; Panel on Prevention, 2011). Low risk for future falls relates to someone who has not yet fallen, and does not display balance or gait impairments (AGS/BGS, 2010; Panel on Prevention, 2011).

Due to the complexity of determining what risk factors caused a person’s fall(s), “It Takes a Village” to identify those at risk for future falls and provide recommendations to reduce potential falls. The multi-disciplinary team may include: geriatrician, physician assistant, primary care provider, dentist, nurse/nurse practitioner, pharmacist (geriatric), occupational therapist, occupational therapy assistant, physical therapist, social worker, recreational therapists, psychologist, and non-health professionals including community agencies, recreational renters, and builders/contractors.

Fear of Falling

Quality of life and occupation engagement may also be affected by a fear of falling (FOF) for those who have, and have not, sustained a fall. A fear of falling may be defined as “lasting concern about falling that can lead an individual to avoid activities that he/she remains capable of performing” (Tinetti, Richman, & Powell, 1990, p. 239). Tinetti and associates (1990) also indicated that a person with a fear of falling has a “low perceived self-efficacy* at avoiding falls during activities of daily living” (p. 239).

*In relation to occupational performance, self-efficacy relates to a person’s self-perceptions and ability to perform specific areas of occupations such as activities of daily living (ADLs) and Instrumental ADLs (IADLS). For example, a person may be reluctant to stand when performing an ADL or IADL task even though the person is entirely capable of simultaneously standing and performing the activity.

FOF is present in 20-85%** of adults 60 years and older who have a fall history, and 33-46% of independent, community-dwelling adults 60 years of age who have never fallen (Painter, 2008; 2012; Kumar, et al., 2014). FOF creates a vicious cycle that leads to self-imposed activity disengagement, physical weakness, social isolation, anxiety, depression, and ultimately a decrease in quality of life (Donoghue, Cronin, Savva, O’Reagan, & Kenny, 2013; Painter, 2012).

**The broad range may be due to the functional level of the adults, their ages, the time of being assessed for fear of falling in relation to falling, and assessment(s) used.

FOF Cycle (Painter, 2008)

RISK FACTORS

When talking to an older adult, family member, or even a healthcare professional – as we’ve discussed previously – a perception often exists that there is nothing that can be done to prevent a fall from happening: it’s just part of getting old. However, falls are preventable if the correct steps are taken!

The first step is to identify fall risk level of the older adult, next to identify the multi-faceted intrinsic and extrinsic fall risk factors, and finally to develop strategies, supported by current evidence-based research, to address each multi-faceted risk factor. (It is important to keep in mind that not all risk factors are modifiable, and not all older adults will be compliant in following through with the treatment plan.)
Multifaceted Related Fall Risk Factors

**TOP Fall Risk Factors**

- *Environment
- *Balance & gait deficits
- *Decreased strength
- *Polypharmacy
- *Postural hypotension
- *Cardiovascular/medical problems

* = modifiable

**Other Fall Risk Factors**

- Gender
- Increased age
- Socioeconomic status
- Cognitive impairments
- *Functional impairments
- *Living arrangement (live alone vs. with others)
- *Depression
- *Fear of falling

* = modifiable

This table provides the top fall multifaceted risk factors as well as additional fall risk factors. (Ambrose, et al., 2013; AGS & BGS, 2010; Kumar, et al., 2014; Panel on Prevention, 2011)

Multifaceted Fear of Falling Risk Factors

- Female gender
- *Poly-pharmacy
- Fall history
- Fall-related injuries
- Age
- *Balance
- *Gait & mobility deficits
- Poorer self-rated health
- Low economic status
- *Decreased ADL performance
- *Activity restriction
- *Social isolation
- Decreased quality of life
- *Sedentary lifestyle
- *Depression
- *Anxiety
- *Lives alone

* = modifiable

This table reflects the multifaceted fear of falling risk factors. (Enderlin, et al., 2015; Kumar, et al., 2014; Kvelde, et al., 2015; Painter, et al., 2012; Patil, Uusi-Rasi, Kannus, Karinkanta, & Sievänen, 2013; Young & Williams, 2015)

Kvelde and associates' (2015) research determined that the likelihood of falling increased by 55% if an older adult had two fall risk factors, and increased to 144% if an older adult had three or four fall risk factors. Thus, you can see the importance of being judicious in identifying an older adult's fall risk factors.

**Intrinsic Fall Risk Factors**

These pertain to age-related biopsychosocial changes and health-related internal factors that may include: age, gender, and the various systems of the body influencing muscle strength, balance, proprioception, kinesthesia, sensation, synthesis of medications, cognition, mood, blood pressure, obesity, etc. (Ambrose, et al., 2013; AGS/ BGS, 2010; Chang & Do, 2015; Grundstrom, Guse, and Layde, 2012; Enderlin, et al., 2015; Frank-Wilson, et al., 2016; Kvelde, et al., 2015; Kumar, et al., 2014; Mitchell, et al., 2015; Morris, et a., 2016; Panel on Prevention, 2011; Ward, et al., 2015).

As indicated earlier, fall risk increases by age. However, those over 85 years of age and older who were in excellent health displayed no greater fall risk than
their counterparts between 65 and 84 years of age (Grundstrom, Guse, & Layde, 2012). Grundstrom and associates (2012) determined that an overall decreased health status was the predominant fall risk factor of 12,684 adults > 85 years of age; other contributing fall risk factors in these individuals included being male, perceived sleep deficiency, usage of assistive devices due to health problem(s), alcohol consumption, increased body mass index, and stroke history.

Chronic health conditions influencing the potential to fall may include cardiovascular disease (i.e. orthostatic hypotension, hypertension, and atrial fibrillation), stroke, Parkinson’s disease, arthritis, obesity, diabetes, urinary tract infection and incontinence, depression, and/or anxiety (Ambrose, et al., 2013; Coyne, et al., 2014; Enderlin, et al., 2015; Mitchell, et al., 2015). Polypharmacy, taking four or more prescribed medications, is often needed to address these multitude of health conditions, but also may impact balance, sleep, cognition, etc. due to the multitude of associated side effects of each medication (Ambrose, Paul, & Hausdorff, 2013; AGS & BGS, 2010; Enderlin, et al., 2015; Kumar, et al., 2014; Mitchell, et al., 2015; Panel on Prevention, 2011).

Chang and Do (2015) suggested it is difficult to compare gender differences in relation to fall rates and risk factors since there have been limited studies with sufficient sample sizes that are generalizable or have investigated the same gender specific fall related factors. However, older women were more likely to sustain falls and fall-related injuries than men, but men had higher mortality fall rates, 46%, than women (Ambrose, et al., 2013; Chang & Do, 2015; Duckham, et al., 2013).

Butler and associates (2015) suggested risk taking behavior in relation to an older adult’s physical ability should be considered as an independent falls risk factor. For example, they found those with high behavioral risk taking were significantly associated with falls within the next year. Further, by addressing these risk-taking behaviors, clinicians may indirectly supplement evidence-based fall prevention programs.

A National Health and Aging Trends Study of 7,601 adults 65 years and older demonstrated healthcare professionals should consider pain as another fall risk factor, since it can impact a person’s balance if there are balance, postural stability, and coordination while engaging in activities (Patel et al., 2015).

**Extrinsic Fall Risk Factors**

These pertain to areas external to the older adult, and typically include the personal and public environments which an older adult frequents. Areas may include low and high assistive technology, poor lighting, clutter, throw rugs, steps with no or unstable handrails, bathroom safety hazards, uneven surfaces in/outside, pets, yard equipment/supplies, snow and ice, and unsafe footwear.

**CLINICAL PRACTICE GUIDELINES**

In 2010, the American Geriatrics Society/British Geriatrics Society *Clinical Practice Guideline: Prevention of Falls in Older Persons* (hereafter referred to as Guidelines) updated version, from 2001, was released. A panel of expert healthcare professionals with much geriatric and fall prevention experience and publications participated in performing extensive meta-analyses and systematic literature review, including randomized controlled trials and cohort studies, to establish current evidence-based practice recommendations (AGS/BGS, 2010; Panel on Prevention, 2011). A clinical algorithm was developed along with a recommended rating scale of identified fall risk factors and accompanying evidence-based research to substantiate the rating scale to guide healthcare providers in using recommended assessments and interventions.

**The STEADI**

The CDC used these *Guidelines* and developed a user-friendly Stopping Elderly Accidents, Deaths, and Injuries (STEADI) toolkit for both healthcare providers and older adults (CDC, 2016a, 2016b, & 2013). In July 2015, the CDC added online training with accompanying continuing education credits (https://cdc.train.org/DesktoShell.aspx). Further, the CDC is creating a clinical decision support module that can be added into a practice’s electronic health record’s system (Houry, et al., 2015).

The STEADI’s toolkit for healthcare providers includes:

1) **Algorithm for Fall Risk Assessment & Interventions** (see next page);

2) **Preventing Falls in Older Patients: Provider Pocket Guide**;

3) **Stay Independent** screening brochure;

4) **Medication Review and SAFE Medication Review Framework** handouts;

5) 4 separate fact sheets including
   a) **Take Steps to Prevent Older Adult Falls**;
   b) **Medications Linked to Falls**;
   c) **Risk Factors for Falls**;
   d) **Falls are a Major Threat for your Patients**;

6) 4 functional assessments with accompanying videos including:
   a) **30-Second Stand Test**;
   b) **4-Stage Balance Test**;
   c) **Timed Up and Go (TUG) Test**;
   d) **Measuring Orthostatic Blood Pressure**;

7) **Extra Clinical Tools including**:
   a) **Talk About Fall Prevention with your Patients**;
   b) **Fall Prevention Patient Referral Form**;
   c) **Fall Risk Checklist**;
   d) **Integrating Fall Prevention into Practice**;
The STEADI’s materials for older adult patients include:

1) 2 fact sheets including
   a) Stay Independent: Prevent Falls;
   b) Older Adult Falls: A Growing Danger;
2) 2 brochures:
   a) Family Caregivers: Protect your Loved ones from Falling;
   b) Check for Safety (English and Spanish);
3) Additional resources:
   a) Taking Steps to Prevent Falls podcast;
   b) Keeping Seniors Safe podcast;
   c) Preventing Older Adult Falls and TBI podcast;
   d) Concussion and TBI;
   e) Motor Vehicle Safety: Older Adult Drivers;
   f) Violence Prevention: Elder Abuse;
   g) Links to the National Council on Aging (NCOA), Administration for Community Living (ACL), and National Institute on Aging at NIH

Guidelines Rating Scale

Evidence, reviewed by the panel of experts, was graded by using a standardized rating scale, and for each intervention recommendation, a rating of A, B, C, D, and/or I was/were assigned.

A rating: Strong evidence exists that these interventions result in improved health outcomes; their benefits substantially outweigh harm. Clinicians are strongly recommended to provide these interventions to qualified patients.

B rating: Fair evidence exists that these interventions result in improved health outcomes; their benefits outweigh harm. Clinicians are recommended to provide these interventions to qualified patients.

C rating: Fair evidence exists that these interventions result in improved health outcomes; benefits may not outweigh harm. No recommendation to clinicians, either for or against, was made regarding these interventions.

D rating: Fair evidence exists that these interventions are ineffective and/or their benefits may not outweigh harm. Clinicians are recommended against providing these interventions to asymptomatic patients.

I rating: Evidence is insufficient to recommend for or against these interventions.

(AGS/BGS, 2010; Panel on Prevention, 2011).
Interventions receiving A ratings – the strongest recommendation – included home environment assessment and modification, and exercise to improve balance, strength, and gait training. Reducing the total number of medication prescriptions or dose of individual medications, and reviewing, minimizing, and/or stopping all medications on an annual basis, received B ratings. Postural hypotension management with a possible pacemaker, and attending to foot problems and footwear, received C ratings: research was neutral, with no strong evidence either for or against. Fall prevention education as a sole intervention strategy was not effective in reducing falls, but was given C and D ratings when included in a multifactorial fall prevention program for community-dwelling older adults. Vision-based interventions were given mixed ratings based on the area of vision reviewed, ranging from recommended (B), neutral (C), not recommended for those without visual deficits (D), to insufficient evidence (I) (AGS/BGS, 2010; Panel on Prevention, 2011).

**Screening and Assessment**
The first step in preventing future falls is to determine an older adult’s risk for future falls. All older adults should be screened at least once a year regarding falls history, frequency of falls, and any difficulties with gait and/or balance.

When following the STEADI’s algorithm (pictured above), you can start by using the STEADI’s brochure, *Stay Independent: Are you at Risk?* This is a great brochure to use in your outpatient clinic’s waiting rooms, whether you are treating older adults or working with the caregivers bringing your patient(s) to your practice. It is also could be used as a quick screening tool for your acute and rehabilitation patients.

It is very important, if the older adult has fallen, to determine the circumstance(s) of the fall(s) including: symptoms; injuries incurred; time of day; location(s); if anyone witnessed fall(s); and, if medical attention was required. You will also want to determine if the person is having difficulty with walking or balance.

A multifactorial fall risk assessment is needed if the older adult reports multiple falls or reports gait and/or balance deficits. A person does not need a fall risk assessment if he or she has had one fall, but does not report or demonstrate difficulty walking or balance deficit; instead, if a person has had a single fall, a gait and balance evaluation is typically done by physical therapy. However, if the evaluation results are poor, then a multifactorial fall risk assessment may once again be indicated (AGS/BGS, 2010; CDC, 2016a; Panel on Prevention, 2011).

**MULTIFACTORIAL FALL RISK ASSESSMENT AND RELATED INTERVENTIONS**

According to the Guidelines and STEADI algorithm (AGS/BGS, 2010; CDC, 2016a; Panel on Prevention, 2011), the multi-disciplinary fall risk team should perform a multifactorial fall risk assessment for any community-dwelling older adult if the person has:

- sustained two or more falls in the past year,
- sustained one fall in the past year with an abnormal gait,
- sustained an acute fall,
- demonstrated difficulty with balance or gait, and/or
- sought medical assistance or gone to Emergency Department due to a fall.

It is not recommended for older adults when a single fall has occurred without a reported complaint of difficulty with balance or gait, who do not demonstrate difficulty with balance or gait, and/or who have not reported any fall in the past year.

**ADDITIONAL IMPACT**

A recent study since the 2010 Guidelines were published relates to the ability of older adults, with or without cognitive deficits, to recall past fall history dating back one year, six months, or three months – particularly if they did...
not sustain a fracture or incur other injuries, and/or went to some level of health care setting (Sanders, Stuart, Scott, Kotowicz, & Nicholson, 2015). This study included 2,096 women over 70 years of age.

When asked if a fall had occurred in the past year, 23% of those who had indicated a fall on their daily falls calendar did not recall falling within the past year. Further, older women who had reported four or more falls on their daily falls calendar had difficulty recalling, when asked, how many falls had occurred over the past year.

To enhance an older adult’s memory of past falls, Sanders et al suggested that clinicians could reduce the number of options by which they are quantified. For example, rather than asking if a person has had a few falls, several falls, or regular falls over the past six months, the clinician could specify: “Over the past six months, have you had 1) a few (1-4) falls; 2) several (5-7) falls; 3) regular (8+) falls?”

In conjunction with the Guidelines’ and STEADI’s multifactorial falls risk assessment, the Occupational Therapy’s Practice Framework: Domain and Process (3rd ed.), (hereafter referred to as OTPF) (AOTA, 2014) provides guidance for occupational therapy practitioners in identifying fall risk factors, developing efficacious intervention strategies, and adding to the current body of evidence surrounding falls and fear of falling in older adults.

### Multifactorial Fall Risk Assessment

- Focused fall history
- Medication review
- Vision
- Physical
  - Lower extremity
  - Neurological
  - Cardiac
- History of fall risk factors
- Home Safety
- Functional performance
  - ADL
  - Perceived function and fear of falling

**A synopsis of the primary categories associated with the Guidelines and STEADI’s multifactorial falls risk assessment.**

The following content provides a more detailed description as to what information should be gathered, and assessments performed, if this comprehensive assessment is warranted. Suggestions are also provided to occupational therapy practitioners as to what their role(s) could potentially be in regards to being one of the key multi-disciplinary fall risk assessment team members.

### ADDITIONAL IMPACT

These suggestions are based on current evidence and experience from the author’s involvement over the past ten years in a Fall Risk Assessment Clinic held at East Carolina University’s Family Medicine’s Geriatric Center (FRAC). Our team was comprised of a geriatrician, geriatric nurse, geriatric pharmacist, physical therapist, social worker, students, and myself.

Each adult was seen by each team member over 2.5-3 hours for a comprehensive multifactorial fall risk assessment based on the Guidelines and STEADI. Upon completion of the assessment, the team re-grouped and determined a plan of action, including a written letter to the person’s primary care physician and to the patient and caregiver(s) specifying identified fall risk factors and recommendations.

Among these recommendations were:

- home modifications and physical therapy and/or community senior exercise programs with a focus on balance and strengthening (A rating);
- medication adjustment(s) (B rating);
- cardiology referrals to current or new physician if warranted; podiatry referrals where warranted for those with diabetes, arthritis, or other foot complaints; and footwear recommendations (C rating);
- yearly eye exams, and referrals back to the person’s optometrist or ophthalmologist for age-related eye diseases and age-related eye changes (C/D/I ratings).

Additional referrals were given for those who demonstrated depression, high anxiety, and/or cognitive concerns.

To assist with compliance in our recommendations, the social worker or social worker intern student contacted each patient on a weekly basis for three months to determine if there were any difficulties getting recommended adaptive equipment, physical therapy appointment, eye appointment, medication recommendations, etc.

### Fall History

The focused fall history is an important first step in identifying an older adult’s fall risk factor(s), and could be performed by any member of the team. This history includes the number of falls since the last visit to the doctor’s office (or within another specified time period
your team has decided upon), whether it be in acute care, rehabilitation, outpatient, or private practice. It may be easiest for the person to discuss his or her fall history at one time with the entire team, thereby preventing the older adult from providing the same information repeatedly and simultaneously saving time. If this is not possible, utilizing a fall history form developed by your team can also save time and reduce patient frustration.

Fall-related history information should include symptoms at time of the fall, injuries incurred, time of day of the fall, activity being performed surrounding the fall(s), and whether anyone witnessed the fall. It is also important to get a medical history of past and current health impairments such as osteoporosis, incontinence, cardiovascular disease, neurological impairment(s), vertigo, lower extremity weakness, poor balance, or other health conditions.

If the person has not yet fallen, it is good to evaluate the person’s balance and gait and ask if the person has almost fallen or “furniture walks” (i.e. holds on to furniture as the person walks across a room).

Though the Guidelines do not recommend asking an older person about a fear of falling, your team may decide to include pertinent fear of falling questions when the fall history is collected; alternately, the occupational therapist can personally address this independent risk factor for future falls and activity disengagement.

### Environment Assessments & Modifications

A frequently cited major fall risk factor involves environmental safety hazards which relate to any object(s) and/or circumstance(s) that may increase the likelihood of an older adult falling either in the home or public setting (Ambrose, et al., 2013; AGS/BGS, 2010; Gillepsie, et al., 2012; Panel on Prevention, 2011; Johnson, Jeffery, Bacsu, Abonyi, & Novik, 2016; Pighills, Ballinger, Pickering, & Chari, 2016).

Environmental home fall hazards may cause falls within a person’s home and/or surroundings. Environmental public fall hazards may cause falls away from the home environment (AGS/BGS, 2010; Gillepsie, et al., 2012; Panel on Prevention, 2011).

Gillepsie and associates’ meta-analysis determined there was a 19% falls reduction by addressing home hazards through an assessment and modifications. Similarly – though generalizability was based on the type of and age of the home – Keall and colleagues (2015) determined low-cost home modifications and repairs could reduce fall-related injuries by 26%. The modifications were not geared towards a specific age range; rather, they focused on making the home safer for anyone living in the home, regardless of age. Some of the most frequent changes related to the home exterior’s steps, pathways, and exterior lighting. Interior modifications included reducing glare, providing proper lighting, placement of hand rails inside/outside tub or shower stall, usage of elevated toilet seat or taller toilet, usage of a shower mat, removal of clutter, extension cords, and/or throw rugs, usage of hand rails on both sides of steps, marking first and last step, and correction of uneven surfaces.

#### ADDITIONAL IMPACT

Adults living in rural areas may have different perceptions and needs related to falls, fall-related injuries, and intervention strategies than those in urban areas. Findings from Johnson and associates’ (2016) qualitative study among 42 men and women living in two rural Canadian areas found that men were more likely to fall from high risk activities, reported more personal reasons as to falling, and placed expectations upon themselves in preventing future falls. Rural women, conversely, fell more often doing daily activities, and tended to be more reflective and proactive in preventing. Further, neither the men nor the women discussed the role of healthcare providers or the healthcare system in regards to fall risks and fall prevention strategies.

Though this is only one small qualitative study, it demonstrates the need for occupational therapy practitioners and other health care professionals to consider how older adults living in rural areas or other areas may view falls, fall-related injuries, and intervention/prevention strategies. It may also demonstrate the scarcity of healthcare services in rural communities, requiring residents to rely on each other rather than those in the healthcare field.

The Guidelines recommends that any adult with a fall history, or other fall risk factors, should:

1. have a home hazard assessment (A rating) by an occupational therapist or qualified health professional to identify environmental home fall hazards; and
2. receive home safety recommendations that may include modifications or removal of identified safety...
hazards, and have a follow-up after modifications and home safety recommendations have been given.

Note that the Guidelines states that either an occupational therapist or qualified health professional should perform the home safety assessment, provide recommendations, and follow up after the modifications have been completed. Recent studies, however, determined only home hazard assessments, recommendations, and follow-up performed by an occupational therapist, rather than any other healthcare professional, significantly reduced falls among older adults (Enderlin, et al., 2015; Pighills, et al., 2016).

Pighills and associates (2016) compared two systematic meta-analyses pertaining to environmental interventions among older adults in preventing falls. The studies reviewed delineated between older adults who were at a high vs. low risk for falling and had high vs. low intensity environmental interventions.

Older adults considered high fall risk were comprised of those 65 years of age or older who had at least one fall risk factor(s); had sustained one or more falls within the past year; had a diagnosed chronic condition; reported a recent hospital admission; and/or had an identified visual impairment. Adults 65 years and older with no other fall risk factors were considered to be low risk for falling.

High intensity interventions pertained to occupational therapists providing a comprehensive, validated functional evaluation of older adults in the home environment with a follow-up after recommended modifications were made. Conversely, low intensity environmental interventions pertained to only an environmental checklist screening with no functional observation made in the older adult’s home.

Their findings suggested that falls were reduced when occupational therapists performed high intensity environmental interventions among older adults with high fall risk, but not low risk. Low intensity environmental interventions among older adults at both high and low fall risk were not effective when administered by non-occupational therapy practitioners.

Occupational therapy practitioners are educated on the interrelationships between the intrinsic factors of a person (i.e., physiological, cognitive, spiritual, neurobehavioral, and psychological), the extrinsic factors of the environment (i.e., social support, social and economic systems, culture, values, built environment and technology, and the natural environment), and occupation performance and participation. The Person-Environment Occupation Model (PEO) model of practice epitomizes this framework and explains the whys and hows by which a person engages in activities either positively or negatively (Law, Cooper, Strong, Stewart, Rigby, & Letts, 1996).

A person’s occupational performance is guided by the environment, level of activity performance, and activity, and may be improved upon by assessing and intervening while considering all three areas. If only one area is addressed, the person may not be as successful as when the person, environment, and occupation are considered.

Further, an often-neglected cited fall risk factor in current and past research is the influence of behavioral risk factors, which include a person’s habits and routines, frequency of use of areas within the environment, and the intended activity (AOTA, 2014; Pighills, et al., 2015). Falls, fall risks, and activity engagement are caused by a combination of intrinsic and behavioral risk factors within the context of the extrinsic environment (AOTA, 2014; Pighills, et al., 2015). Since occupational therapists deliver high intensity environmental interventions to prevent falls, they consider the person’s intrinsic factors, address a wide range of fall risk factors, behavioral factors, and include a functional assessment in the person’s own environment and/or simulated environment via environmental information gathered from the older adult and/or family, and/or pictures or video of home environment. (Functional assessments will be discussed later in the course.)

This comprehensive approach to the environment within the context of the person, occupations, and behaviors may explain why occupational therapist-led environmental interventions are more successful than when provided by other professionals (Pighills, et al., 2015).

Environment Assessments

The Safety Assessment of Function and the Environment for Rehabilitation - Health Outcome Measurement and Evaluation (SAFER-HOME) v. 3 is a comprehensive standardized home assessment
which may assist occupational therapists in addressing home hazards. It considers 12 separate domain areas pertaining to living situation, mobility, environmental hazards, kitchen, eating, household, personal care, bathroom and toilet, medication, addiction/abuse, leisure, communication, scheduling, and wandering (Chiu & Oliver, 2006; Chiu, et al., 2006). It is appropriate for any age and takes 45-90 minutes to perform.

The Home Safety Self-Assessment Tool (HSSAT) v.3, from the University of Buffalo, is another option (OT Geriatric Group, 2011). It is comprised of six sections: 1) home safety self-assessment checklist and solutions; 2) assistive devices and helpful products to prevent falls; 3) fall prevention tips; 4) Americans with Disabilities Act (ADA) instructions for home environment, and 5) action log (the final section is specific to suppliers in a New York county).

The American Occupational Therapy Association (AOTA) also provides additional assessment resources (AOTA, 2013a; 2013b; 2007; Asher, 2007).

**Environment Modifications**

**Technology**

Assistive technology (AT) provides a wide range of devices, strategies, practices, and services to ameliorate challenges observed by older adults and others with varying levels of performance deficits within an environment (Khosravi, & Ghapanchi, 2016). AT devices may include, but are not limited to, visual and hearing devices, mobility aids, ADL and environmental aids, gadgets, and environmental safety modification devices. In all cases, it is crucial older adults be trained in the proper usage of the assistive device(s).

Visual aids may involve reducing glare, using proper illumination based on person's needs, using magnifiers, using a computer with specific software and hardware or even speech synthesis. Other visual aids may address writing guides, large print items such as books or check registers, or adapting the environment to assist a person with contrast sensitivity and/or depth perception deficits.

AT devices to assist with hearing deficits may include various types of hearing aids, as well as the usage of closed caption or other devices to enhance the experience of watching television. Similarly, some theaters are now providing special headphones to assist the person with hearing deficits at a movie, play, or symphony.

AT gadgets, often prescribed by occupational therapy practitioners, are used daily by older adults to assist them in performing their ADLs and IADLs. They may include, but are not limited to, a dressing stick, sock aid, medication dispenser, bathroom equipment with automatic shutoff if water is too hot or toilet overflows, automatic windows and curtains, talking scale, and floor cleaning robots. There is even a smart grab bar that provides both visual and auditory cues to help remind an older person to use it, rather than relying on the towel rack, soap dispenser, or shower curtain (Guitard, Sveistrup, Fahim, & Leonard, 2013).

Mobility aids may be as simple as a straight cane, or more sophisticated, like the extremely sensitive electronic mobility aid used in conjunction with the long white cane for those who have low vision, which emits acoustic and/or tactile signals indicating obstacles within the person's immediate environment. Other mobility aids may include a service dog, quadcane/walker, standard walker, rollator walker, standard or electric wheelchair, beach wheelchair, or scooter. There are also different aids to assist those who drive, or ride in, a car, including swivel seats, seatbelt assist, and adjustments to make it easier to reach the car's pedals and get out of the car. Elliptical bikes and three-wheeled bikes may be a safer exercise option than a standard bicycle for some older adults. Note that any mobility aid must be correctly adjusted to the person's height to prevent injury.

Augmentative communication assistive technology requires a comprehensive assessment of an older adult's communication strategies, cognitive, language, and motor skills, and educational and a/vocational goals. In relation to falls prevention and fear of falling, it is important for the person to be able to communicate his/her concerns related to fall risk factors and issues surrounding fear of falling; otherwise, the person will remain at risk for future falls. Augmentative communication devices range from simple spelling or picture boards to more sophisticated electronic devices, often involving specific software based on the person's comprehensive assessment and needs.

Assistive technology devices may be useful to the person with cognitive impairment in relation to falls prevention, and may include electronic or phone-delivered medication reminders, wireless devices with verbal prompting that provide step-by-step instructions to perform an ADL or IADL activity safely, a GPS device in case the person gets lost or falls down, and automatic lights that turn on and off, as well as other low and high AT devices.

Electronic aids to daily living may prevent a fall from happening by automatically turning on and off lights both inside and outside the home environment. They may also allow interaction with electronic devices within the home, such as a television, electric bed, telephone, etc. Speech recognition, or some type of switch access via remote control or computer, is needed for the control system to work.

Telehealth and Telecare services – assistance devices that are linked to response teams via a person’s telephone – may be invaluable for older adults with chronic diseases, who are homebound, and/or who have a fall history. These devices include smoke and carbon monoxide detectors, fall detectors, and/
or a security system, and may be linked to local fire departments, police, or even the home owner. Sensors in the home or on the person may alert a company or family member of a person's falling, or convey a location if the person becomes lost or wanders off.

Though there are numerous advantages to AT, Telehealth, and Telecare, there are also disadvantages, as well as additional reasons why older adults choose not to utilize AT device(s) no matter how much the item(s) may help them (Yusif, Soar, & Hafeez-Baig, 2015). Thus, practitioners should consider why older adults may be resistant to using AT prior to automatically dispensing or ordering the AT device(s).

Just as fall-related efficacy is influenced by a person’s perceptions of occupational performance and balance confidence, so too is AT, Telehealth, and Telecare usage determined by a person’s perceptions via personal, social, and physical contextual factors (Peek, et al., 2015). Yusif and associates (2016), in their systematic review, found that older adults (34%) felt threatened by having their privacy invaded by using AT devices. Other reasons given through this literature review included lack of trust (27%); functionality-added value (25%); cost of AT device, ease of use, and suitability for daily use (23% each respectively); perception of not needing the device (20%); stigma associated with having to use AT device (18%); and fear of becoming dependent on device and lack of training on the device (16% each respectively). Yusif and associates also pointed out that the negative attitudes most frequently provided by older adults related to “gerontechnologies” specifically designed and used only by older adults: potential users felt stigmatized by accepting the devices as part of their daily lives.

One strategy, which assists older adults not only in becoming less resistant to utilizing technology to lessen fall risk and enhance occupational performance, but also in taking more ownership of their therapeutic intervention plan, is the use of digital photographs. These should be photograph(s) the older adult or a family member has taken of the actual area, within or outside the home, of the fall, almost falls, and/or areas of concern(s) related to causing future falls (Breeden, 2016). In a small study of 6 older adults using Telehealth, Breeden (2016) found that when the older adult showed the occupational therapist digital photograph(s) and spoke in detail about the environment in question, the older adult became actively engaged in making a plan of action to adapt the environment to promote occupational performance. Conversely, without utilizing the digital photographs, the older adults were not as actively engaged in the process of individualizing their treatment plan. Based on these findings, Breeden suggested “telling clients how to be safe at home may not be as effective as having clients tell clinicians how breaches in home safety occurred,” (p. 30).

This idea could also apply to acute care, rehabilitation, and/or outpatient practice. The family or friend could be asked to take digital pictures of the environment in which the person sustained a fall-related injury, and either email or bring the digital photographs to the occupational therapy session. The patient could then describe the environment in question and participate in a more effective intervention to reduce future falls, and even be more receptive to AT usage.

Future Environment Research

Action Plan’s Environmental Safety in the Community Goals (Cameron, et al., 2015)

Goal A: “All older adults will have access to community environments that lower the risk of falls and facilitate full participation, mobility, and independent functioning” (p. 23).

Goal B: “Public officials such as community and transportation planners, community service providers, and those responsible for maintenance and repairs, will be aware of and actively promote community environments that lower the risk of falls” (p. 25)

Research into the variety of environments in which older adults reside – including continual care communities, skilled nursing facilities, assistive living facilities and the public's/community’s environment – is still needed.

The Aging and Technology Research Center provides occupational therapy practitioners (and others) with evidence-based studies for home modification, home modification resources, a home assessment checklist for older adult and health care professionals, and valuable falls prevention resources (http://agingsearch.buffalo.edu/hssat/). AARP also provides a variety of environmental home and public resources. For example, AARP’s Home Fit is a wonderful training resource for occupational therapy practitioners, since it offers a standardized PowerPoint as part of a fall prevention education presentation to community-dwelling older adults and those who are interested in aging in place. It has a consumer guidebook that accompanies the presentation (AARP, 2014a). The AARP Network of Age-Friendly Communities (2014b) provides a step-by-step tool kit for cities, towns and counties including a sidewalks and streets survey to evaluate a neighborhood’s walkability and help make improvements, and advanced streets and sidewalks in-depth kit for walkability workshops and programs.

INTERESTED IN LEARNING MORE?

Some occupational therapy practitioners have focused on home modifications and aging in place. If you are interested in this practice area, you could consider becoming certified in Certification Aging in Place (CAPS). In this three part online course, you will learn...
about customer service skills for home modifications, marketing and communication strategies for aging and accessibility, strategies for designing and building solutions for aging and accessibility, and business management for building professionals. CAPS course fees are determined by the Home Builder’s Association or another educational license holder. For further information, go to http://www.nahb.org or http://ageinplace.com/.

Functional Assessments

Functional assessment, used in conjunction with environmental assessment, can provide insight into the abilities and limitations of the older adult.

The valid and reliable Lawton Instrumental ADL Assessment is quick and easy to administer. It includes the older adult’s ability to use the telephone, shop, prepare food, perform housekeeping duties, do the laundry, access various modes of transportation, and manage medications and finances. A score of 8 reflects that the older adult is independent; lower scores indicate differing levels of dependence (Lawton & Brody, 1969).

The Katz Index of Independence in Activities of Daily Living assesses an older adult’s bathing, dressing, toileting, transferring, continence, and feeding skills. A score of 6 reflects that the older adult is independent; lower scores indicate differing levels of dependence (Katz. 1983).

The Functional Reach Test determines the maximum distance a person can reach when in either a static standing or seated position. Older adults who are reach less than 7 inches will most likely require assistance leaving the house, display limited mobility, and be dependent in ADLs (Weiner, Duncan, Chandler, & Studenski, 1992).

These tools are widely used and readily available in the public domain online. The American Occupational Therapy Association (AOTA) also provides additional functional assessment resources (AOTA, 2013a; 2013b; 2007; Asher, 2007).

The Impact of Fear of Falling

When incorporating functional assessment within the environmental hazard assessment, it is important to consider the older adult’s perceived functional ability and the possible presence of fear of falling (FOF).

This perception relates to the person’s falls self-efficacy and balance confidence, and may cause the person to disengage from activities the older adult can actually perform with or without some form of low-to-high assistive technology. This view is further substantiated by a recent meta-analysis on the relationship between fall-related efficacy and activity engagement in community-dwelling older adults (Schepens, Sen, Painter, Murphy, 2012).

Falls self-efficacy and fear of falling (FOF) are often used interchangeably, and for the purpose of this current discussion, the term falls self-efficacy/FOF will be used. Falls self-efficacy/FOF is viewed as a separate construct that measures the psychological consequences of falls and a person’s perceived fall risk.

Balance confidence pertains to a person’s perceptions/efficacy of maintaining balance during ADLs (Powell & Meyers, 1995). For the purpose of this discussion in relation to functional assessment, collectively falls self-efficacy/FOF and balance confidence are referred to as fall-related efficacy, otherwise described as “confidence in one’s ability to perform activities without losing balance or falling” (Schepens, et al., 2012, p. 138).

Fall-related efficacy impacts an older adult’s motivation to engage/participate in and perform ADLs, IADLs, leisure, and work activities. A person with a low fall-related efficacy may have a low perception of being able to safely perform an activity without falling.

Assessments addressing falls self-efficacy/FOF should be considered by occupational therapists as part of the functional assessment. Practitioners may determine low fall-related efficacy is preventing activity engagement rather than poor motivation, stubbornness, or a flat affect. Additionally, a low falls self-efficacy/FOF may cause depression and/or anxiety, as well as decreased strength, endurance, and quality of life, all of which furthers the reluctance of the older adult to engage in occupations. Unless fall-related efficacy is included as part of the functional assessment, your patient may display poor outcomes and never reach his or her full potential. This further affects discharge planning, possible re-admittance, assistive living or skilled nursing home placement, and/or the caregiver’s roles, finances, work, affect, and additional time needed for caregiving.

Falls Self-Efficacy/FOF Assessments

Schepens and associates (2012) suggested that a client-centered approach is needed in addressing fall-related efficacy, and the occupational therapist should consider the interrelationship between the person, environment, and occupation by collecting both physically based outcomes and subjective information. They further suggest assessing and treating both falls self-efficacy/FOF and balance confidence separately. (Refer to recommended lower extremity screenings listed under Physical Examination for balance confidence.)

Standardized falls self-efficacy/FOF assessments that are valid, reliable, and quick to use in occupational therapy practice include the long and short form of the Falls Efficacy Scale-International (Kempen, et al., 2008; Yardley, et al., 2005), the Activities-Specific Balance Confidence Scale (Powell & Meyers, 1995), and the Survey of Activities and Fear of Falling in the Elderly.
The Falls Efficacy Scale-International (FES-I) is a self-report, 4-point scale. An older adult is asked to rank how concerned he or she is that he or she might fall when performing 16 different activities. A person has a low falls-related efficacy/FOF concern regarding falling if the score ranges between 16-19 points; a moderate concern between 20-27 points, and a high concern if between 28-64 points (Halvarsson, Franzén, & Ståhle, 2013). The condensed Short Falls Efficacy Scale-International is a self-report, 4-point scale. The older adult is asked to rank how concerned he or she is that he or she might fall when performing 7 different activities. A person has a low falls self-efficacy/FOF concern regarding falling if the score ranges between 7-8 points; a moderate concern between 9-13 points, and a high concern if between 14-28 points (Kempen et al., 2008). There is excellent internal reliability, and the correlation between the Short FES-I and the FES-I is 0.97. These tools are widely used and are readily available in the public domain online.

The Activities-Specific Balance Confidence scale (ABC) is also a self-report. Older adults are asked to rate their confidence they will lose their balance or become unsteady in performing 16 daily activities from 0% (no confidence) to 100% (complete confidence). Norms include scores < 50 = low level of functioning; scores between 50-79 reflect medium level of functioning; high functioning individuals receive a score of 80 or more points (Powell & Meyers, 1995). A score of less than 67 points reflects that the older adult is at risk for falling (Lajoie & Gallagher, 2004). This tool is widely used and is readily available in the public domain online.

The Survey of Activities and Fear of Falling in the Elderly (SAFFE) is a self-report. Following an algorithm for each of the 11 activities, the older adult responds only to those activities s/he actually performs rather than making hypothetical guesses on activities not performed (Lachman, et al., 1998). This assessment takes more time to administer. It measures the level of activity engagement versus fear of falling by taking several factors into account instead of solely focusing on self-efficacy or on a single item. It also measures negative consequences to fear of falling (e.g. activity restriction and well-being). This tool is widely used and is readily available in the public domain online.

### Visual Assessment & Interventions

(B/C/D/I ratings)

Age-related vision changes may include decrease in acuity, strabismus, amblyopia, diplopia, nystagmus, and visual deficits such as cataracts, glaucoma, age-related macular degeneration, and diabetic retinopathy (Ambrose, et al., 2013; AGS/BGS, 2010; Panel on Prevention, 2011; Tuunainen, et al., 2014). van Landingham and associates (2014) suggested older adults with age-related macular degeneration and associated vision loss have a greater fear of falling.

Since the Guidelines were published, research has suggested that poor visual contrast sensitivity and depth perception as a person moves about familiar and unfamiliar environments may cause falls among older adults (Fairhall, et al., 2013; Gleson, Sherrington, & Keay, 2014; Salonen & Kivela, 2012). Salonen and Kivela (2012) found diminished depth perception to be one of the strongest visual risk factor for multiple falls among community-dwelling older adults.

Contrast sensitivity, the ability to distinguish between subtle changes between light and dark, may be evaluated using the quick and easy to use standardized MARS Sensitivity Assessment. It comes with three charts, one for the left eye, one for the right eye, and binocular testing. The charts' matte surface allows even lighting, thereby alleviating any glare areas. Each chart is printed with 48 different contrast levels, declining gradually in 0.04 log unit steps by letter or number. The assessment takes less than a minute to administer, and score per eye(s) is easy to store.

Depth perception is the ability to identify how much space there is between objects and/or how far away something is located. One quick and easy depth perception screening is the Frisby Stereopsis Test (Frisby Stereopsis, n. d.).

Currently, there is mixed research (I) related to falls and vision (AGS/BGS, 2010; Panel on Prevention, 2011). Insufficient evidence demonstrates that vision assessment/intervention should be used as a single intervention to fall prevention (D) (AGS/BGS, 2010; Panel on Prevention, 2011).

However, it is recommended that cataract surgery among older women, if needed, be expedited to decrease fall risk (B) (AGS/BGS, 2010; Keay, et al., 2014; Panel on Prevention, 2011). Thus, during the fall history intake information, it is important to ascertain if the person has had an eye exam within the past year, if cataracts are present, and if so whether surgery has been recommended.

Wearing multifocal glasses while walking or going up steps has been found to cause an older adult to fall (AGS/BGS, 2010; Panel on Prevention, 2011). Therefore, caution should be given to the older adult requiring such eyewear, particularly if the prescription(s) has recently changed.
Exercise

Evidence-based exercise programs should be part of a multi-factorial fall prevention intervention for community-dwelling older adults (A rating), and may be performed individually (home) or in groups (B rating). Identified older adults at risk for future falls should engage in exercises focusing on balance, strength training, and coordination (A rating) (AGS/BGS, 2010; Panel on Prevention, 2011). The Guidelines suggest at minimum, exercise programs should be at least 12 weeks long and be offered one-to-three times a week, however caution should be taken for those with limited mobility or frailty since too strenuous exercise activities could increase the rate of falls (A rating). Exercise programs for older adults should be taught by trained healthcare professionals or a fitness instructor who is capable of regularly reviewing the progression and adjusting an older adult’s exercise program (I rating) (AGS/BGS, 2010; Panel on Prevention, 2011). Suggested exercise programs are listed below under Evidence-Based Programs.

Medication Review

Action Plan’s Medication Goals (Cameron, et al., 2015)

Goal A: “All older adults will become aware that falling is a common adverse effect of some prescription and nonprescription medications and discuss these effects with their health care provider” (p. 12).

Goal B: “Health care providers will be aware that falling is a common adverse effect of some prescription and nonprescription medications, and therefore will adopt a standard of care that balances the benefits and harms of older adult medication use” (p. 16).

The primary care provider and/or pharmacist should annually perform a medication review of current prescribed medications – including drug classification(s) and side effects whenever a prescribed dosage is changed or new drug prescribed – and any over-the-counter supplements. Once this has been done, consideration should be given to reducing the total number of medication prescriptions or dosage of individual medications, particularly for high risk medications that cannot be discontinued. During the review, it may also be determined some medications are no longer needed (AGS/BGS, 2010; Naples, Hanlon, Schmader, & Semla, 2016; Panel on Prevention, 2011).

Several drug classifications pose a fall risk due to side effects.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Fall Risk</th>
<th>Fracture Risk</th>
<th>Hip Fracture Risk</th>
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<tr>
<td>Sedatives &amp; hypnotics</td>
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<tr>
<td>Benzodiazepines</td>
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<td>Antipsychotics</td>
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<td>Antidepressants</td>
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<td>Cholinesterase inhibitors</td>
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<td>Antihypertensives</td>
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<td>Anticholinergics</td>
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Comparing your patient’s medications to the Beers Criteria (http://www.americangeriatrics.org/files/documents/beers/BeersCriteriaPublicTranslation.pdf) will help you identify any medications with high fall risk side effects such as psychotropics, tertiary tricyclic anti-depressants and serotonin reuptake inhibitors (SSRIs), benzodiazepines, non-benzodiazepine hypnotics, alpha blockers and agonists, and over-the-counter sleeping pills (AGS/BGS, 2010; AGS, 2015; Enderlin, et al., 2015; Panel on Prevention, 2011; Williams, et al., 2015).

Note that in specific instances, it may be challenging for a patient, and/or the family and physician, to balance the positive and negative effects of taking a commonly used medication. For example, medications used to enhance cognitive functioning may be prescribed to a person with early Alzheimer’s disease. The possible negative side effects of dizziness, fatigue, ataxia, syncope, and drowsiness could cause falls; conversely, an improvement in cognitive functioning may help the older adult to avoid unnecessary fall risk-taking behaviors (Enderlin et al., 2015).

Though there is limited evidence regarding occupational therapy practitioners’ role(s) in addressing medications, there are several considerations based on the OTPF (AOTA, 2014) pertaining to the older adult’s roles, habits, routines, client factors, and performance skills related to taking prescribed medications. Leland and associates (2012) suggested more research is needed in relation to the efficacy of occupational therapy interventions surrounding medication management to decrease fall risk. Suggestions included strategies to open medication containers, read medication labels (pill bottle magnifier or enlarged font), and take correct medication(s) at correct times (automatic pill dispensers, medication daily checklist, visual cueing, or medication boxes).
The Guidelines also recommends daily vitamin D supplementation of at least 800 International Units (IU) to reduce falls among those with a low Vitamin D level.

**Physical Examination**

**Action Plan’s Physical Mobility Goals (Cameron, et al., 2015)**

Goal A: “All older adults will have knowledge of, and access to, effective programs and services that preserve or improve their physical mobility and lower the risk of falls” (p. 11).

Goal B: “Health care and other service providers will be more aware of, and actively promote, strategies and community resources/programs designed to improve older adult physical mobility and lower the risk of falls” (p. 13).

A thorough neurological, lower extremity, and cardiac exam are recommended when performing the physical examination. The geriatrician or primary provider typically performs the majority of the physical examination, but other healthcare professionals may also be involved in the assessment. Areas typically evaluated as part of the neurological test pertain to lower extremity sensation, proprioception, reflexes, and cortical, extrapyramidal, and cerebellar function. Sensation tests relate to vision, hearing, peripheral nerves. Cardiac tests relate to heart rate/rhythm, postural pulse/blood pressure, and heart rate and blood pressure responses to carotid sinus stimulation. Other areas evaluated relate to urinary continence, feet, and lower extremity function evaluation should include gait and balance, mobility levels, and strength, and is typically performed by a physical therapist. However, other disciplines trained in performing each of the following assessments may perform the evaluations. Recommended STEADI fall risk assessments include the Timed Get Up and Go (TUG), 30 Second Chair Stand, 4-Stage Balance, and orthostatic blood pressure (CDC, 2016a). The TUG, a valid and reliable standardized tool, is quick and easy to perform (Shumway-Cook, Brauer, & Woollacott, 2000): a person stands up from a chair with arms, walks 10 feet, turns around, walks back to the chair, and sits down. Instructions are critical to the validity of this assessment, and the following parameters should be observed:

- The clinician should first demonstrate what is being asked of the person to do, and then have the person complete 1-3 trials prior to the actual timed test.
- Any assistance device normally used by the older adult should be used during this process; the therapist should walk beside the person and hold onto the gait belt.
- The therapist should ask the person to walk “as quickly as you safely can.”

If the performance is unsafe, the test is invalid, and should be repeated. During the timed test, observe postural stability; gait; stride length and sway; slow tentative pace; loss of balance; short strides; little or no arm swing; steadying self on walls; shuffling; end bloc turning; and/or not using assistive device properly or not properly adjusted. Interpretation of results for community-dwelling older adults includes: 1) low risk: 7-9 seconds (typically a fit & active older adult); 2) moderate risk: 10-12 seconds (typically an “average” older adult); and, 3) high risk: > 13.5 seconds (CDC, 2016a; (Shumway-Cook, et al., 2000). This tool is widely used and is readily available in the public domain online.

The standardized, valid, and reliable 30 Second Chair Stand evaluates leg strength and endurance. A chair with a straight back without arm rests (seat 17” high) and stopwatch are needed for this evaluation. The person is instructed to sit in the middle of the chair, place hands on the opposite shoulder crossed at the wrists, keep feet flat on the floor, back straight, and arms against the chest. On the command of “Go,” the person rises to a full standing position and then sits back down again, and repeats standing up and down for 30 seconds (CDC, 2016a). Norms are based on gender and age ranges (Rikli & Jones, 1999). This tool is widely used and is readily available in the public domain online.

Static balance is assessed by the valid, reliable, and standardized 4 Stage Balance assessment (CDC, 2016a; Granacher, Gollhofer, Hortobágyi, Kressig, & Muehlbauer, 2013). The clinician should describe and demonstrate each of four progressively more challenging positions prior to the person attempting them. The clinician should stand next to the person, hold his/her arm, and help the person assume the correct foot position. Once the person is steady, the clinician should let go, but remain ready if person loses his/her balance. An assistive device (cane or walker) should NOT be used for each of the four progressively more challenging positions. If the person can hold a position for 10 seconds without moving his/her feet or needing support, s/he may progress to the next position; if not, the test should be halted (CDC, 2016a). This tool is widely used and is readily available in the public domain online.

Based on the results of all three assessments, physical therapy and/or evidence-based exercise programs focusing on lower extremity strength, balance, flexibility and endurance (A rating) should be recommended, and may be performed individually (home) or in groups (B rating) (AGS/BGS, 2010; Panel on Prevention, 2011).
Determining orthostatic blood pressure is also recommended in a multifactorial fall risk assessment, and is usually performed by a nurse, nurse practitioner, or physician assistant (C rating) (AGS/BGS, 2010; CDC, 2016a; Panel on Prevention, 2011). Orthostatic hypotension, also called postural hypotension (“head rush”), is a form of low blood pressure related to suddenly rising from a lying or sitting position, and is a frequent cause of falls, particularly for those who are dehydrated, take certain prescribed medications (i.e., alpha blockers), and/or display autonomic neuropathy (AGS/BGS, 2010; Panel on Prevention, 2011). Dehydration may be caused by taking diuretics, which cause an older person to frequently go to the bathroom, particularly at night. As a result, the person may attempt to prevent these trips by not drinking sufficient water during the day. There was no evidence found demonstrating occupational therapy’s role in addressing orthostatic hypotension. However, you could notify the physician if your patient is complaining about a medication’s side effect(s) that cause frequent trips to the bathroom. Recommendations to promote hydration may mean an adjustment to type of or dosage of medication(s) and/or time of day medication(s) is taken, a bowel and bladder schedule, and/or usage of support stockings or abdominal binders.

**Foot and Footwear Evaluation**

The Guidelines recommend an evaluation for foot deficits and footwear management (C rating).

Foot neuropathy, commonly found among those with diabetes or other neurological impairments or injuries, may cause a person to experience difficulty in feeling what type of surface he or she is on, prevent him or her from noticing an uneven surface, or even feel as if there is a rock or other item in his or her shoes. Any of these associated outcomes of neuropathy could cause a person to fall and/or develop a poor falls self-efficacy. Another ramification of diabetes is poor proprioception of the feet; not knowing where your feet are when you are walking or going up/down steps could impact a person’s sense of balance, and, again, create a poor falls self-efficacy which could result in activity disengagement and poor quality of life. Arthritic toe deformities, bunions, ulcers, ingrown toe nails, and/or deformed nails could also cause a person to have an unsteady balance and fall.

It is also important to assess a person’s shoes: for instance, do the shoes have a non-skid surface, have good arch support, and are they stable when the person walks? The Guidelines recommends older adults walk with shoes of low heel height; tie shoelaces; not wear shoes with worn soles, flip flops, house slippers, or other shoes without a back; and/or not walk around the house in socks, particularly for those with some type of non-carpet surface (C rating).

**Falls Prevention Education**

The Guidelines recommend fall education and other informative programs as part of a multifactorial fall prevention program for community-dwelling older adults (C rating), but stress that they should not be the sole fall prevention intervention provided (C rating).

**Cognition Evaluation**

There was insufficient evidence that supported any specific recommendations to reduce fall risk for those with a cognitive change (AGS/BGS, 2010; Panel on Prevention, 2011). However, since the updated Guidelines (2010) were published, new evidence demonstrates how clinicians can use cognitive screening results, and/or consider how the side effects of commonly prescribed dementia medication’s side effects impact fall risk.

Suggested screenings occupational therapy practitioners could administer include the Mini-mental State Examination (MMSE), St. Louis University Mental Status (SLUMS), or Montreal Cognitive Assessment (MOCA). Each of these screenings is valid, reliable, and standardized.

A MMSE score of < 26 demonstrates a high risk for future falls (Muir, Gopaul, & Odasso, 2012). The SLUMS screening is more sensitive in identifying older adults with mild cognitive impairment compared to the MMSE (Tariq, et al., 2006). For those who have a high school education a normal cognitive screening score is between 27-30; mild neurocognitive disorder is reflective of scores between 21-26, while dementia relates to scores between 1-20. For adults without a high school education, a normal cognitive screening score is between 25-30; mild neurocognitive disorder is reflective of scores between 20-24, while dementia relates to scores between 1-19.

The MOCA is highly recommended to use with Stroke population in all settings (Toglia et al., 2011). Normal cognitive function on average is 26-30; however, there are different norms established by select impairments.

**Missing Pieces?**

Since the Guidelines was published, depression and anxiety have been identified as independent factors causing, and resulting from, falls and fear of falling (Pietrzak, Kinley, Enns, Fawcett, & Sareen, 2013; Rodda, Walker, & Carter, 2011). Additionally, perceptions of caregivers and even health care providers, in relation to falls and fear of falling, may interfere with an older adult’s confidence and activity engagement which may ultimately impact the older adult’s quality of life and living environment (as mentioned earlier, the Guidelines ignores the habits and routines of older adults in relation to person, environment, and
occupational performance). Lastly, evidence-based programs had not yet been as refined, as they are now, in addressing fall interventions and fear of falling. The role of state and local fall prevention coalitions should also be considered.

Psychosocial Deficits Associated with Falls and Fear of Falling (DSM-V)

Depression

According to the National Institute of Mental Health (2012), many healthcare professionals view older adults’ complaints as an expected part of aging rather than considering that the person may have depression. Despite this misconception, depression is the most prevalent mental health disorder experienced by older adults, and the symptomatology within this age group differs from those under 55 years of age (Pietrzak, Kinley, Enns, Fawcett, & Sareen, 2013; Rodda, Walker, & Carter, 2011). Many older people may not complain of symptoms of depression, but – like the aforementioned professionals – rather may consider such symptoms part of the aging process. When depression presents in tandem with other medical conditions, it may exacerbate the physical illness and possibly cause early placement in skilled nursing or assisted-living settings (Wang, 2011). Older adults may present with vague somatic complaints, including severe back pain or neck pain. In addition to the somatization of symptoms, depressed older adults may present with an apathetic rather than sad affect.

Depression disorders may include major depression, persistent depressive disorder (dysthymia), substance/medication-induced depressive disorder, or depressive disorder due to another medical condition (American Psychological Association [APA], 2013). According to The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), APA, 2013), individuals who, during most of a consecutive two-week period, experience either a depressed mood or loss of interest in activities that were previously pleasurable may have a major depressive disorder. When addressing falls and depression and fear of falling and depression, practitioners are challenged since past and current research is based on the DSM-IV rather than DSM-5. Additionally, the generic term depression is associated with both falls and fear of falling rather identifying the specific type of depression. Nevertheless, depression is an independent fall and fear of falling risk factor (Iaboni & Flint, 2013; Kvelde, et al., 2015).

In an eleven-year longitudinal study related to predictors of fall-related injuries and FOF, Clemson and associates (2014) found depression was an independent predictor of future fall-related injuries requiring medical attention. They suggested this finding may be due to changes in gait speed, as well as decreased balance and strength resultant of self-imposed physical inactivity and activity disengagement. Thus, depression impacted overall quality of life through social isolation, disengagement from past enjoyable leisure and daily activities, decreased strength from inactivity, and an increased risk of sustaining future fall(s), with or without injuries, and/or developing a fear of falling and overall low fall-related self-efficacy (Clemson, Kendig, Mackenzie, & Browning, 2014; Donoghue, et al., 2013; Jefferis, et al., 2014; Patil et al., 2014; Pohl, Ahlgren, Nordin, Lundquist, & Lundin-Olsson, 2014; Schepens, et al., 2012).

Since depression may be present with or without a fall and is frequently undiagnosed, it is important that the occupational therapist or other healthcare providers include a depression screening during any evaluation process. If it is determined that the older adult has depression, then it would be wise to do a fall and fear of falling screening, and if needed, a multifactorial fall risk assessment. Some screening tools may be more appropriate in a hospital setting versus community-based practice or with a specific population.

The Geriatric Depression Scale (GDS) is cost effective, highly reliable and valid, and quick to administer. It is comprised of 30 yes and no questions (Yesavage, et al., 1983), which address somatic concerns, lowered affect, cognitive impairment, feelings of discrimination, impaired motivation, lack of future orientation, and lack of self-self-esteem. The tool is scored by tallying the total number of responses indicative of depression. Each question is awarded a score of 0 for a negative response and a score of 1 for a positive response. A score of 10 yes responses is used as the cutoff to indicate depression. Scores between 10-19 yes responses are indicative of mild depression, while scores of 20-30 positive responses indicate severe depression.

The related GDS-Short Form (GDS-SF) is designed to use with older adults living in the community, acute, or long-term settings and may be used to monitor depression over time (Sheikh & Yesavage, 1986). It is comprised of 15 yes and no questions. Scores higher than a 5 warrant a more in-depth assessment. Scores of 5-8 are indicative of mild depression, scores of 9-11 are indicative of moderate depression, and scores of 12-15 are indicative of severe depression.

It is important to remember that the GDS and GDS-SF are not substitutes for a formal depression evaluation by a trained mental health professional. Rather, they may be used with healthy, medically ill, and mild-to-moderate cognitively impaired older adults in community, acute, and long-term settings. The older adult’s primary care physician should be contacted for a more in-depth assessment if the results are positive for depression. Both tools are widely used and readily available in the public domain online.

The Patient Health Questionnaire-9 (PHQ-9) is a 9-item, valid and reliable self-administered depression screening tool that is based on DSM-IV rather than
DSM-V depression criteria (Bian, Li, Duan, & Wu, 2010). Because this tool assists the practitioner in assessing not only symptoms and functional impairment, but also the severity of the depression, it can also be useful in selecting and monitoring treatment. A score of 0-4 indicates no depression, 5-9 reflects mild depression, 10-14 indicates moderate depression, 15-19 indicates moderately severe depression, and 20-27 indicates severe depression. The occupational therapist or other healthcare professional administering the PHQ-9 should contact the older adult’s primary care physician for a more in-depth assessment if the results are positive for depression.

There is also a PHQ-2, which is an ultra-brief screening tool consisting of the first 2 questions from the PHQ-9. The PHQ-2 has been used as a “pre-screener,” and can be printed on a card the person completes and reviews with the nurse or other healthcare professional prior to seeing the primary care physician. It may also be used for repeated monitoring (Kroenke, Spitzer, Williams, & Löwe, 2010).

The PHQ-9 and PHQ-2 are widely used and readily available in the public domain online.

Other depression scales more appropriate for hospitalized older adults include the 7-item Beck FastScreen for Medical Patients (Beck, Steer, Brown, 2000), which is available for purchase at http://www.pearsonclinical.com, and the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983), readily available in the public domain online. The HADS is comprised of the HADS-D, which measures depression symptoms through 7 questions, and HADS-A, which measures anxiety symptoms via 7 questions.

Anxiety disorders, though often underdiagnosed and undertreated, are prevalent in adults 65 years and older. These disorders impair functional performance and decrease quality of life. Based on DSM-5 criteria, anxiety disorders include generalized anxiety disorder (GAD), social anxiety disorder (social phobia), panic disorder, and agoraphobia, among others (APA, 2013). Further, with the updated DSM-5 (2013), fear of falling was added to the specific phobia section. Unlike their classification in DSM-IV, post-traumatic stress disorder (PTSD) and obsessive-compulsive disorder (OCD) are no longer considered to be specific types of anxiety disorders in DSM-5 (APA, 2013). Rather, PTSD is now listed with trauma and stress-related disorders, and OCD is listed in the obsessive-compulsive and related disorders section (APA, 2013).

In a comprehensive systematic review and meta-analysis, Payette and associates (2016) determined anxiety is a significant factor associated with falls self-efficacy/FOF and other fall-related psychological factors including fall-related efficacy. They strongly recommend practitioners screen for anxiety, such as generalized anxiety disorder, using standardized, reliable, and valid screening tools.

One such anxiety screening tool occupational therapists or others could utilize in practice is the quick, reliable, and valid Generalized Anxiety Disorder-7 Item Scale (GAD-7) (Robert, Spitzer, Kroenke, Williams, & Löwe., 2006; Spitzer, Kroenke, Williams, Löwe, 2006). The norms for this anxiety scale include normal if between 0-4 points, mild anxiety if between 5-9 points; moderate anxiety if between 15-21 points; and further evaluation warranted if the person’s scores are > 10 points (Spitzer et al., 2006). If positive, the primary care provider should then be notified. If confirmed the older adult does indeed have an anxiety disorder, a fall screening and, if needed, a multifactorial risk assessment should be administered. The GAD-7 is widely used, and readily available in the public domain online.

Caregiver Influence

More recent research is now demonstrating how the family caregiver’s fear of their loved one falling, and/or personal perceptions of an older adult’s fall risk, actually impacts the older adult’s occupational performance and affect, and may, in itself, cause the older adult to develop a fear of falling. Thus, occupational therapy practitioners should consider the caregiver’s personal perspective(s) of falls and fear of falling. For example, Shen and associates (2015) determined family caregivers were actually more concerned about future falls than were their family members (older adults) who were in rehabilitation after sustaining a fall-related hip fracture. Additionally, the greater the disparity of this concern between the family caregiver and older adult with the hip fracture, the greater the negative impact on the older adult’s rehabilitation. Administering the FES-I to the caregiver(s) may assist the rehab team in gaining a better perspective of what needs to be included in family education and discharge planning: for example, recommending the Matter of Balance (MOB) course, discussed below, to both the caregiver and patient would be of help to decrease fear of falling and promote occupation engagement and quality of life.

Further challenges arise when an older adult with dementia sustains a fall-related injury requiring hospitalization: addressing fall prevention and fear of falling for older adults with dementia may be particularly difficult.

The combination of the family caregiver’s strain level and the person with dementia’s baseline of physical function upon hospital admission may affect the caregiver’s anxiety level, which in turn may affect retention of patient/family education and discharge planning (Boltz, Chippendale, Resnick, & Galvin, 2015). An occupational therapist or other healthcare professional could administer one of these caregiver’s screening tools to learn...
what degree of stress the caregiver has while their family member is hospitalized: Caregiver Self-Assessment Questionnaire (Epstein-Lubow, et al., 2010); Caregiver Strain Index (Brannan, et al., 2012); Caregiver Stress Check (Alzheimer's Association, 2017).

In addition, the healthcare provider(s) may also develop a fear their patients with dementia will fall. Occupation restriction, deconditioning, loss of functional ability, and poor quality of life emerge as the healthcare provider's fear of falling develops or escalates (Fitzgerald, Hadjistavropoulos, & MacNabb, 2015). It may be helpful to administer the FES-I and offer the MOB course to healthcare providers as well as to the caregiver. (The MOB may be too challenging for the older adult, depending on the dementia level.)

**Evidence-Based Programs**

**Action Plan’s Expansion of Evidence-Based Program Goal** (Cameron, et al., 2015)

Goal: “Expand the availability of evidence-based falls prevention programs” (p. 30).

Though there are currently excellent evidence-based programs addressing identified fall and fear of falling risk factors for community-dwelling older adults, there is still the need to train those providing the evidence-based programs, financially support the programs, and continually develop new evidence-based programs for those not living in the community (i.e. assisted living and skilled nursing facilities).

Note that motivating older adults to participate in an evidence-based fall and/or fear of falling program remains challenging. Habits are hard to break, particularly if one has or has not been doing the same activity/exercise level for his or her entire life. While between 28-95% of older adults adhere to various aspects of recommended multi-faceted falls prevention programs (Nyman & Victor, 2012), only 21% of older adults fully adhere to prescribed home-based, falls prevention exercise programs (McPhate, Simek, & Haines, 2013). The rationales for non-compliance included:

1) they perceive the changes as better for others than for themselves;
2) they don’t think they are at risk for falls;
3) they are already engaged in activities (even though the activities were not appropriate to increase strength and endurance);
4) they think their home is already safe and does not need any changes;
5) their perception/self-efficacy of being physically unable to participate (Haines, Day, Hill, Clemson, & Finch, 2014).

A Matter of Balance (MOB) is a community-based course that helps older adults reduce fear of falling, increase activity level, and learn how to modify the home for safety through attending eight two-hour classes taught by two trained volunteer lay leaders (National Council on Aging (2014). Those attending this course are typically > 60 years of age, able to problem-solve, concerned about falling and/or fear of falling, interested in improving balance, flexibility, and strength, and have disengaged from activities due to concern about falling. Topics for the program include:

1) Introduction to the MOB program;
2) Exploring thoughts and concerns about falling;
3) Exercise and fall prevention;
4) Assertiveness and fall prevention;
5) Managing concerns about falls;
6) Recognizing fall-ty habits;
7) Recognizing fall hazards in the home and community;
8) Practicing no fall-ty habits and putting it all together.

Sessions 3-8 have an exercise component that promotes strength and balance. It is beneficial to provide participants with a listing of local exercise classes, particularly if they are evidence-based exercise classes, so they can continue exercising.

**INTERESTED IN LEARNING MORE?**

A Matter of Balance provides an excellent evidence-based course for occupational therapy practitioners to become trained to teach due to their experience in leading groups, promoting activity engagement, addressing the person, environment, and occupation as well as having holistic perspective in working with clients. For more information, go to www.mainehealth.org/pfha, and/or check with your State’s fall prevention coalition for MOB master trainers.

The CDC (Cameron, et al., 2015) recommends two different Tai Chi courses for preventing falls, both of which have been proven to improve flexibility and muscle strength, balance, gait, posture, body awareness, proprioception, executive function, and affect (Wang, et al., 2014; Wayne, et al., 2014): Dr. Lam’s Tai Chi for Arthritis and Tai Ji Quan: Moving for Better Balance (formerly known as Tai Chi: Moving for Better Balance). Many YMCAs and Senior Centers are offering one of these two forms of Tai Chi, and both have been found to be effective in reducing falls and promoting quality of life.

The Otago Exercise Program, from New Zealand, was originally designed for those more home-bound and/or for those who were unable to or did not want to
attend a group exercise course. Since home health agencies are required by Medicare to provide a falls prevention program, Otago is a perfect match for older adults being seen by home health occupational and/or physical therapy practitioners. Otago is an accepted program and reimbursed by Medicare for those clients being seen in home health or outpatient settings. Though it was originally designed for physical therapists, occupational therapy practitioners may find the program beneficial and appropriate for their practices, particularly those working in home health or continual care retirement communities. Otago works to improve balance and strength with a simple, easy-to-implement, and affordable home-exercise program that lasts about 30 minutes. The older adult is encouraged to do the program about three times a week, and add a walk outside at least two times a week as strength and endurance progresses (Stevens & Burns, 2015). Initially, a 35% fall rate drop was found for those participating in this year-long program, compared to those not participating in Otago. Shubert and associates’ (2015) pilot study, using a virtual delivery of the Otago program via a Kinect camera and avatar, determined that virtual technology usage may also be an effective method of offering this exercise program; however, further research is needed.

INTERESTED IN LEARNING MORE?

Training is done online and is quite inexpensive (https://www.ahecconnect).


State and Local Fall Coalitions

Involvement in your local and/or State’s Fall Prevention Coalition is paramount in promoting occupational therapy’s roles in addressing falls and fear of falling among older adults. If your community does not have such a coalition, please check with your local State Falls Prevention Coalition or contact the National Council on Aging.

There is a National Falls Prevention Day, which typically is on or near the first day of fall. State and local coalitions often get proclamations from the governor and/or mayor, and plan local and statewide events to promote fall and fear of falling prevention awareness.

Additional Action Plan goals, beyond the scope of this course, include:

Funding and Reimbursement

Goal: “Increase available funding and reimbursement sources and mechanisms to support falls prevention programs, interventions, and activities” (p. 27).

Public Awareness and Education Goal:

Goal: “Effectively move the falls prevention communications and marketing agenda/action plan forward” (p. 32).

Public Policy and Advocacy

Goal: “Effectively move the Falls Free® National Falls Prevention Action Plan forward through policy and advocacy efforts” (p. 33)

(Cameron, et al., 2015)

CONCLUSION

In summary, falls are the leading cause of unintentional injuries and death among older adults – but they are NOT a normal part of the process of aging. Occupational therapy practitioners have a direct role, and may become leaders, in preventing falls, particularly among community-dwelling older adults.

With that in mind, be proactive!

1) Review the AOTA’s Occupational Therapy Practice Framework, 3rd edition; the AGS/BGS Clinical Practice Fall Prevention Guidelines; STEADI resources and assessments; and the Falls Free®: 2015 National Falls Prevention Action Plan;

2) Determine how the interrelationship of the OTPF, Guidelines, STEADI, and Action Plan may be implemented within your practice area;

3) Take the lead in addressing and developing an efficacious falls prevention and fear of falling program within your practice and community;

4) Engage in fall-related and fear of falling research by collaborating with occupational therapy educational program(s) or other disciplines;

5) Ask every older adult if s/he has fallen the past year;

6) Identify fall risks and develop intervention plans on reducing fall risks;

7) Educate yourself and colleagues on evidence-based falls prevention programs,

8) Join your State’s Fall Prevention Coalitions, and,

9) Actively participate and/or help develop a local fall prevention coalition.

You now have the tools to Step UP in addressing falls and fear of falling in community-dwelling older adults.
ADDITIONAL RESOURCES

Fall Free®: 2015 National Falls Prevention Action Plan

Falls Prevention Resources (p. 51 – 54)

Research / Statistics

• Older Adult Falls Data and Statistics – Centers for Disease Control and Prevention (CDC) http://www.cdc.gov/homeandrecreationalsafety/falls/adultfalls.html

Coalitions / Grantees

• Falls Free Coalition – National Council on Aging (NCOA) http://www.ncoa.org/improve-health/center-for-healthy-aging/fallsprevention/falls-free-initiative.html#falls20free20coalition

• Falls Prevention Initiatives – Goals and Grantees – Administration on Aging (AoA) http://www.aoa.acl.gov/AoA_Programs/HPW/Falls_Prevention/index.aspx


Falls Prevention Initiatives


• Falls Prevention Center of Excellence—resources for service providers, individuals, families, researchers, and educators. http://stopfalls.org/

• Funding Opportunity Announcements – Administration for Community Living (ACL) http://www.acl.gov/Funding_Opportunities/Announcements/Index.aspx

• National Falls Prevention Resource Center – National Council on Aging (NCOA) https://www.ncoa.org/center-for-healthy-aging/falls-resource-center/ Includes these and other resources:

• NCOA / 2015 White House Conference on Aging Falls Prevention Summit – Slides

• Falls Free: Promoting a National Falls Prevention Action Plan

• Making a Difference: Progress Report on the Falls Free™ National Action Plan

• National Falls Free® Initiative: Report from the National Advisory Group Strategic Planning Meeting

• Evaluation Guidelines to Measure the Impact of State and Local Coalitions on Fall Prevention


Programs / Resources for Professionals

• CEU Courses – American Physical Therapy Association (APTA) http://www.apta.org/BalanceFalls/

• Effective Falls Interventions for Older Adults in the Community – Centers for Disease Control and Prevention (CDC) http://www.cdc.gov/HomeandRecreationalSafety/Falls/compendium.html


• Falls Prevention - The American Occupational Therapy Association, Inc. (AOTA) http://www.aota.org/Practice/Productive-Aging/Falls.aspx Includes AOTA’s Falls Prevention Toolkit, resources for Falls Prevention Awareness Day, AOTA’s Falls Project with the CDC, and Public Awareness and Advocacy resources. Online professional development courses, tip sheets, fact sheets on occupational therapy and falls, and evidence-based research are also included.

• Guide to Implementing Effective Community-Based Fall Prevention Programs – Centers for Disease Control and Prevention (CDC) http://www.cdc.gov/HomeandRecreationalSafety/Falls/community_preventfalls.html

• Injuries and Falls from Immobility - Centers for Medicare & Medicaid Services (CMS) http://partnershipforpatients.cms.gov/p4p_resources/tpinjuriesandfallsfromimmobility/toolinjuriesandfallsfromimmobility.html A variety of resources, including the manual The Falls Management Program: A Quality Improvement Initiative for Nursing Facilities (AHRO), the Johns Hopkins Hospital Fall Assessment Tool, the SAFE from FALLS Call to Action program from Minnesota Hospital Association (MHA), and several case studies.
Addressing Falls & Fear of Falling among Community-Dwelling Older Adults

**Resources for Older Adults**


- **American Occupational Therapy Association (AOTA) Tips for Older Adults** http://www.aota.org/About-Occupational-Therapy/Patients- Clients/Adults.aspx Includes falls prevention, remaining in your home as you age, Alzheimer's disease, low vision, and others.
- **Balance and Falls - American Physical Therapy Association (APTA)** http://www.apta.org/BalanceFalls/ Patient Care and Consumer Education including two videos: One for caregivers and one on improving balance and avoiding falls, and related resources.
- **Eldercare Locator Preventing Falls at Home Brochure** http://www.eldercare.gov/Eldercare.NET/Public/Resources/Brochures/docs/Preventing_Falls_Brochure_pagebypage.pdf Offers a home safety check to help people understand what to do to help prevent falls around the home.
- **Falls Prevention Tips and Materials for Older Adults – Centers for Disease Control and Prevention (CDC)** http://www.cdc.gov/Features/OlderAmericans/
- **Go4Life® Exercise and Physical Activity Campaign from the National Institute on Aging at NIH** -- https://go4life.nia.nih.gov/ - The campaign provides resources about a balanced exercise program of endurance, strength, flexibility, and balance designed to help older adults start moving and stay active.
- **NIH SeniorHealth Topic on Falls and Older Adults** –http://nihseniorhealth.gov/falls/aboutfalls/01.html Provides information and resources to consumers about falls, related risk factors, prevention, personal change, home proofing, and more.
- **Questions to Ask Older Adults to Prevent Falls – Medscape** http://www.medscape.com/viewarticle/841020
- **Stopping Elderly Accidents, Deaths and Injuries (STEADI) – Centers for Disease Control and Prevention (CDC)** http://www.cdc.gov/steadi/index.html Comprised of tools and educational materials for health care providers to help identify patients with risk factors and offer interventions.

**Agencies and Organizations**

- **Administration for Community Living (ACL)** http://www.aoa.acl.gov/AoA_Programs/HPW/Falls_Prevention/index.aspx
- **American Occupational Therapy Association, Inc. (AOTA)** http://www.aota.org/Practice/Productive-Aging/Falls.aspx
- **American Physical Therapy Association (APTA)** http://www.apta.org/BalanceFalls/
- **Centers for Disease Control and Prevention (CDC)** http://www.cdc.gov/HomeandRecreationalSafety/Falls/index.html
- **National Council on Aging (NCOA), National Falls Prevention Resource Center** https://www.ncoa.org/center-for-healthy-aging/falls-resource-center/
GERIATRIC DEPRESSION SCALE

(long form)

Choose the best answer for how you have felt over the past week:
1. Are you basically satisfied with your life?
2. Have you dropped many of your activities and interests?
3. Do you feel that your life is empty?
4. Do you often get bored?
5. Are you hopeful about the future?
6. Are you bothered by thoughts you can’t get out of your head?
7. Are you in good spirits most of the time?
8. Are you afraid that something bad is going to happen to you?
9. Do you feel happy most of the time?
10. Do you often feel helpless?
11. Do you often get restless and fidgety?
12. Do you prefer to stay at home, rather than going out and doing new things?
13. Do you frequently worry about the future?
14. Do you feel you have more problems with memory than most?
15. Do you think it is wonderful to be alive now?
16. Do you often feel downhearted and blue?
17. Do you feel pretty worthless the way you are now?
18. Do you worry a lot about the past?
19. Do you find life very exciting?
20. Is it hard for you to get started on new projects?
21. Do you feel full of energy?
22. Do you feel that your situation is hopeless?
23. Do you think that most people are better off than you are?
24. Do you frequently get upset over little things?
25. Do you frequently feel like crying?
26. Do you have trouble concentrating?
27. Do you enjoy getting up in the morning?
28. Do you prefer to avoid social gatherings?
29. Is it easy for you to make decisions?
30. Is your mind as clear as it used to be?

This is the original scoring for the scale: One point for each of these answers.

Cutoff: normal-0-9; mild depressives-10-19; severe depressives-20-30.

1. no 6. yes 11. yes 16. yes 21. no 26. yes
2. yes 7. no 12. yes 17. yes 22. yes 27. no
3. yes 8. yes 13. yes 18. yes 23. yes 28. yes
4. yes 9. no 14. yes 19. no 24. yes 29. no
5. no 10. yes 15. no 20. yes 25. yes 30. no

GERIATRIC DEPRESSION SCALE

(short form)

Choose the best answer for how you have felt over the past week:

1. Are you basically satisfied with your life? YES / NO
2. Have you dropped many of your activities and interests? YES / NO
3. Do you feel that your life is empty? YES / NO
4. Do you often get bored? YES / NO
5. Are you in good spirits most of the time? YES / NO
6. Are you afraid that something bad is going to happen to you? YES / NO
7. Do you feel happy most of the time? YES / NO
8. Do you often feel helpless? YES / NO
9. Do you prefer to stay at home, rather than going out and doing new things? YES / NO
10. Do you feel you have more problems with memory than most? YES / NO
11. Do you think it is wonderful to be alive now? YES / NO
12. Do you feel pretty worthless the way you are now? YES / NO
13. Do you feel full of energy? YES / NO
14. Do you feel that your situation is hopeless? YES / NO
15. Do you think that most people are better off than you are? YES / NO

Answers in **bold** indicate depression.

Although differing sensitivities and specificities have been obtained across studies, for clinical purposes a score > 5 points is suggestive of depression and should warrant a follow-up interview. Scores > 10 are almost always depression.

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems?

(Use “✔” to indicate your answer)

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

FOR OFFICE CODING: 0 + _____ + _____ + _____

= Total Score: _____

Depression Severity: 0-4 none, 5-9 mild, 10-14 moderate, 15-19 moderately severe, 20-27 severe.

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

<table>
<thead>
<tr>
<th></th>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.
Hospital Anxiety and Depression Scale (HADS)

Tick the box beside the reply that is closest to how you have been feeling in the past week.
Don’t take too long over your replies: your immediate is best.

<table>
<thead>
<tr>
<th>D</th>
<th>A</th>
<th>D</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel tense or ‘wound up’:</td>
<td>I feel as if I am slowed down:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Most of the time</td>
<td>3</td>
<td>Nearly all the time</td>
</tr>
<tr>
<td>2</td>
<td>A lot of the time</td>
<td>2</td>
<td>Very often</td>
</tr>
<tr>
<td>1</td>
<td>From time to time, occasionally</td>
<td>1</td>
<td>Sometimes</td>
</tr>
<tr>
<td>0</td>
<td>Not at all</td>
<td>0</td>
<td>Not at all</td>
</tr>
<tr>
<td>I still enjoy the things I used to enjoy:</td>
<td>I get a sort of frightened feeling like ‘butterflies’ in the stomach:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Definitely as much</td>
<td>0</td>
<td>Not at all</td>
</tr>
<tr>
<td>1</td>
<td>Not quite so much</td>
<td>1</td>
<td>Occasionally</td>
</tr>
<tr>
<td>2</td>
<td>Only a little</td>
<td>2</td>
<td>Quite Often</td>
</tr>
<tr>
<td>3</td>
<td>Hardly at all</td>
<td>3</td>
<td>Very Often</td>
</tr>
<tr>
<td>I get a sort of frightened feeling as if something awful is about to happen:</td>
<td>I have lost interest in my appearance:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Very definitely and quite badly</td>
<td>3</td>
<td>Definitely</td>
</tr>
<tr>
<td>2</td>
<td>Yes, but not too badly</td>
<td>2</td>
<td>I don’t take as much care as I should</td>
</tr>
<tr>
<td>1</td>
<td>A little, but it doesn’t worry me</td>
<td>1</td>
<td>I may not take quite as much care</td>
</tr>
<tr>
<td>0</td>
<td>Not at all</td>
<td>0</td>
<td>I take just as much care as ever</td>
</tr>
<tr>
<td>I can laugh and see the funny side of things:</td>
<td>I feel restless and have to be on the move:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>As much as I always could</td>
<td>3</td>
<td>Very much indeed</td>
</tr>
<tr>
<td>1</td>
<td>Not quite so much now</td>
<td>2</td>
<td>Quite a lot</td>
</tr>
<tr>
<td>2</td>
<td>Definitely not so much now</td>
<td>1</td>
<td>Not very much</td>
</tr>
<tr>
<td>3</td>
<td>Not at all</td>
<td>0</td>
<td>Not at all</td>
</tr>
<tr>
<td>Worrying thoughts go through my mind:</td>
<td>I look forward with enjoyment to things:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>A great deal of the time</td>
<td>0</td>
<td>As much as I ever did</td>
</tr>
<tr>
<td>2</td>
<td>A lot of the time</td>
<td>1</td>
<td>Rather less than I used to</td>
</tr>
<tr>
<td>1</td>
<td>From time to time, but not too often</td>
<td>2</td>
<td>Definitely less than I used to</td>
</tr>
<tr>
<td>0</td>
<td>Only occasionally</td>
<td>3</td>
<td>Hardly at all</td>
</tr>
<tr>
<td>I feel cheerful:</td>
<td>I get sudden feelings of panic:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Not at all</td>
<td>3</td>
<td>Very often indeed</td>
</tr>
<tr>
<td>2</td>
<td>Not often</td>
<td>2</td>
<td>Quite often</td>
</tr>
<tr>
<td>1</td>
<td>Sometimes</td>
<td>1</td>
<td>Not very often</td>
</tr>
<tr>
<td>0</td>
<td>Most of the time</td>
<td>0</td>
<td>Not at all</td>
</tr>
<tr>
<td>I can sit at ease and feel relaxed:</td>
<td>I can enjoy a good book or radio or TV program:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Definitely</td>
<td>0</td>
<td>Often</td>
</tr>
<tr>
<td>1</td>
<td>Usually</td>
<td>1</td>
<td>Sometimes</td>
</tr>
<tr>
<td>2</td>
<td>Not Often</td>
<td>2</td>
<td>Not often</td>
</tr>
<tr>
<td>3</td>
<td>Not at all</td>
<td>3</td>
<td>Very seldom</td>
</tr>
</tbody>
</table>

Scoring:
Total score: Depression (D) ________ Anxiety (A) ________

0-7 = Normal 8-10 = Borderline abnormal (borderline case) 11-21 = Abnormal (case)

The Generalized Anxiety Disorder 7-Item Scale

<table>
<thead>
<tr>
<th>Over the last 2 weeks, how often have you been bothered by the following problems?</th>
<th>Not at all</th>
<th>Several Days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeling nervous, anxious, or on edge</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Not being able to stop or control worrying</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Worrying too much about different things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Trouble relaxing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Being so restless that it is hard to sit still</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Becoming easily annoyed or irritable</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Feeling afraid as if something awful might happen</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Score: ________ = Add Columns ________ + ________ + ________

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
</tr>
</tbody>
</table>

Interpreting the Score:

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥10</td>
<td>Possible diagnosis of GAD; confirm by further evaluation</td>
</tr>
<tr>
<td>5</td>
<td>Mild Anxiety</td>
</tr>
<tr>
<td>10</td>
<td>Moderate anxiety</td>
</tr>
<tr>
<td>15</td>
<td>Severe anxiety</td>
</tr>
</tbody>
</table>

REFERENCES


1. Evidence points to a hidden epidemic of falls among older adults: _______ of falls with no injuries are never reported.
   a. 10-15%
   b. 35-40%
   c. 65-70%
   d. 75-80%

2. _______ of all hip fractures are caused by a fall, placing them among the most common types of fractures associated with falls.
   a. 25%
   b. 55%
   c. 80%
   d. 95%

3. An older adult who has sustained two or more falls or has had one or more fall related injuries during the past year, and/or is taking four or more prescriptions (otherwise known as polypharmacy), is at _______ for falling in the future.
   a. A high risk
   b. A low risk
   c. A moderate risk
   d. An intangible risk

4. Which of the following is NOT part of the vicious cycle imposed by fear of falling?
   a. Depression
   b. Excessive activity engagement
   c. Physical weakness
   d. Social isolation

5. TOP multifaceted fall risk factors include _______.
   a. Balance and gait deficits and polypharmacy
   b. Cognitive impairments and fear of falling
   c. Depression and functional impairments
   d. Gender and socioeconomic status

6. Extrinsic risk factors for falling typically include _______.
   a. Age-related biopsychosocial changes
   b. Chronic health conditions
   c. The personal and public environments which an older adult frequents
   d. The various systems of the body

7. Grundstrom and associates (2012) determined that _______ was the predominant fall risk factor of 12,684 adults > 85 years of age.
   a. Alcohol consumption
   b. An overall decreased health status
   c. Being male
   d. Increased body mass index

8. The Stopping Elderly Accidents, Deaths, and Injuries (STEADI)'s toolkit for healthcare providers includes _______.
   a. 6 separate cases of patients at different fall risk levels
   b. 8 different graphics regarding fall statistics
   c. The 8-Stage Balance Test with accompanying video
   d. The Fall Risk Checklist

9. Per the rating scale put forward by the American Geriatrics Society/British Geriatrics Society Clinical Practice Guideline for Prevention of Falls in Older Persons (Guidelines), when “fair evidence exists that these interventions result in improved health outcomes; benefits may not outweigh harm,” they receive _______.
   a. An A rating
   b. A B rating
   c. A C rating
   d. A D rating

10. Interventions receiving A ratings under the Guidelines include _______.
    a. Home environment assessment and modification
    b. Postural hypotension management with a possible pacemaker
    c. Reducing the total number of medication prescriptions or dose of individual medications
    d. Vision-based interventions

11. The STEADI’s brochure, Stay Independent: Are you at Risk?, and the included Check Your Risk for Falling survey, _______.
    a. Can be completed by the older adult either independently or with assistance
    b. Can replace a multifactorial fall risk assessment
    c. Should not be used as a quick screening tool for acute and rehabilitation patients
    d. Was debunked by the Guidelines
12. The Guidelines states that either an occupational therapist or qualified health professional should perform a home safety assessment, provide recommendations, and follow up after the modifications have been completed. Recent studies ______.
   a. Determined only home hazard assessments, recommendations, and follow-up performed by an occupational therapist, rather than any other healthcare professional, significantly reduced falls among older adults
   b. Determined that home hazard assessments, recommendations, and follow-up can be performed by any member of the multidisciplinary fall risk team
   c. Determined that home hazard assessments, recommendations, and follow-up performed by an occupational therapist had minimal impact on falls among older adults
   d. Have disproven the need for a home safety assessment

13. The ______ is a comprehensive standardized home assessment which may assist occupational therapists in addressing home hazards. It considers 12 separate domain areas pertaining to living situation, mobility, environmental hazards, kitchen, eating, household, personal care, bathroom and toilet, medication, addiction/abuse, leisure, communication, scheduling, and wandering.
   a. AARP Network of Age-Friendly Communities
   b. Falls Efficacy Scale-International
   c. Home Safety Self-Assessment Tool (HSSAT) v.3
   d. Safety Assessment of Function and the Environment for Rehabilitation - Health Outcome Measurement and Evaluation (SAFER-HOME) v. 3

14. One strategy, which assists older adults not only in becoming less resistant to utilizing technology to lessen fall risk and enhance occupational performance, but also in taking more ownership of their therapeutic intervention plan, is ______.
   a. Encouraging them to become dependent on AT devices
   b. Pointing them towards “gerontechnologies” exclusively
   c. The use of digital photographs
   d. All of the above

15. The ______ assesses an older adult’s bathing, dressing, toileting, transferring, continence, and feeding skills. A score of 6 reflects that the older adult is independent; lower scores indicate differing levels of dependence.
   a. Aging and Technology Research Center
   b. Functional Reach Test
   c. Katz Index of Independence in Activities of Daily Living
   d. Lawton Instrumental ADL Assessment

16. According to the Guidelines, there is mixed research related to falls and vision. However, ______.
   a. Fair evidence demonstrates that vision assessment/intervention should be used as a single intervention to fall prevention (B rating)
   b. It is recommended that cataract surgery among older women, if needed, be expedited to decrease fall risk (B rating)
   c. Wearing multifocal glasses while walking or going up steps has been found to reduce the number of falls in older adults (A rating)
   d. All of the above

17. The 30 Second Chair Stand evaluates ______.
   a. Gait
   b. Leg strength and endurance
   c. Orthostatic blood pressure
   d. Static balance

18. In an eleven-year longitudinal study related to predictors of fall-related injuries and FOF, Clemson and associates (2014) found ______ was an independent predictor of future fall-related injuries requiring medical attention.
   a. Anxiety
   b. Caregiver perception
   c. Depression
   d. Health care provider perception

19. More recent research is now demonstrating how the family caregiver’s fear of their loved one falling, and/or personal perceptions of an older adult’s fall risk, actually impacts the older adult’s occupational performance and affect, and may, in itself, cause the older adult to develop a fear of falling. Administering the ______ to caregiver(s) may assist the rehab team in gaining a better perspective of what needs to be included in family education and discharge planning.
   a. Beers Criteria
   b. Falls Efficacy Scale-International (FES-I)
   c. Katz Index of Independence in Activities of Daily Living
   d. Montreal Cognitive Assessment (MOCA)

20. Initially, a 35% fall rate drop was found for those participating in a year-long ______ exercise program, compared to those not participating.
   a. Dr. Lam’s Tai Chi for Arthritis
   b. Matter of Balance
   c. Otago
   d. Tai Ji Quan: Moving for Better Balance
Occupational Therapy Practitioners Stepping UP: 
Addressing Falls and Fear of Falling among 
Community-Dwelling Older Adults 
Final Exam


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http://pdhacademy.com/policies/
### COURSE EVALUATION

Learner Name: ____________________________________________________________

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation was thorough and clear</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Instructional personnel disclosures were readily available and clearly stated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Learning objectives were clearly stated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Completion requirements were clearly stated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Content was well-organized</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Content was informative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Content reflected stated learning objectives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Exam assessed stated learning objectives</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Exam was graded promptly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Satisfied with learning experience</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Satisfied with customer service (if applicable)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**What suggestions do you have to improve this program, if any?**

__________________________________________________________________________________________

__________________________________________________________________________________________

**What educational needs do you currently have?**

__________________________________________________________________________________________

__________________________________________________________________________________________

**What other courses or topics are of interest to you?**

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________