



# Fall Prevention

**milestone  
HCQU Northwest**

- \* Falls are the most common cause of traumatic brain injury.
- \* Women who suffer a hip fracture are more likely to die within a year than women the same age without a hip fracture.
- \* Women are up to three times more likely to suffer a hip fracture as a result of a fall than men.

Falls are not a natural occurrence of aging; however normal aging changes can affect fall risk.

One in three adults over age 65 will fall, with one in ten resulting in a serious injury. This risk increases as age increases – one in two people 80 years old fall annually. Falls are the leading cause of fatal and nonfatal injuries in the elderly. Statistics show that almost 23,000 older adults died from fall injuries in

2011. Falls are actually more common than strokes and the most common cause of Traumatic Brain Injuries (46% of fatal falls in people over age 65 are due to TBI). The fear of falling frequently contributes to limited activity, which ultimately decreases mobility, increasing the risk for further falls. Women that incur a hip fracture from a fall are more likely to die within a year than women the same age without a hip fracture.

## Treatable risk factors:

- \* Difficulty ambulating
- \* Taking four or more medications, related to side effects
- \* Foot problems (deformities, foot ulcers, etc.) or wearing unsafe footwear.
- \* Postural hypotension - lightheadedness/dizziness related to a drop in blood pressure with a change in upward positioning.
- \* Visual difficulties
- \* Environmental hazards in the home and community

Observe for problems with these movements:

- \* Steadiness standing on one foot for five seconds
- \* Steadiness rising from a chair
- \* Sitting down without plopping or falling into the chair
- \* Straight walking path
- \* Steadiness with turns while walking
- \* Normal step length as opposed to a shuffle gait



## Risk factors we cannot control:

- \* Age. After age 65, bones can become weaker and break easier. Calcium levels decrease from diet and/or absorption, increasing the risk for fractures. Vision and balance decline and reaction time slows.
- \* Gender. Females are 2-3 times more likely to incur a hip fracture (as a result of falling)

than males. Females lose bone density at a greater rate and sooner as they age than men.

- \* Heredity. Having a parent with osteoporosis contributes to fractures with increasing age. This occurs more commonly in Caucasian and Asian people, as they tend to be small-boned and of low body weight. This increases their risk for osteopo-

rosis.

## Risk factors that we can control:

- \* Nutrition. Reduced ability to absorb calcium and reduced dietary intake of calcium and Vitamin D. Loss of weight can also predispose to osteoporosis.
- \* Personal habits like smoking and excess alcohol use.

**Normal aging changes and medical risks:**

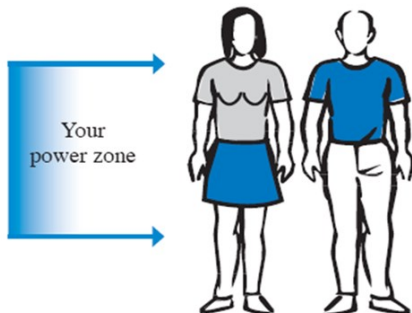
- \* Impaired musculoskeletal function.
  - \* Gait abnormalities frequently occur with aging. Men tend to have a small stepped gait and wide walking and standing base (less risk), whereas women tend to have a waddle gait and a narrow walking and standing base, which increases their risk for falls
  - \* Arthritis (osteo and rheumatoid) cause joint stiffness and pain, decreasing the range of motion and muscle weakness
  - \* Balance difficulties due to loss of flexibility and muscle strength
  - \* Osteopenia and osteoporosis and bone cancer
  - \* Previous fall causing fear of falling
- \* Cardiovascular and pulmonary impairments
  - \* Weakness, shortness of breath with exertion, dizziness and fatigue will increase the risk for falling
  - \* Postural hypotension related to the many medications taken to control the conditions
- \* Mental Impairments
  - \* Depression causing muscle weakness from inactivity and fear of falling
  - \* Dementia and Mental illness can cause abnormal gait, aggression, agitation, hyperactivity/



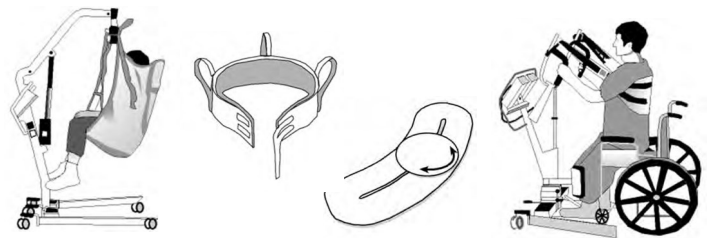
- impulsivity, balance disturbances and judgment impairment
- \* Neurological Conditions
  - \* Stroke causing decreased sensation and weakness or paralysis
  - \* Parkinson's disease can cause shuffle gait, poor balance, slow limited movement, tremors and medication side effects (dizziness), postural hypotension
  - \* Multiple Sclerosis causing an unsteady gait, visual disturbances, weakness/numbness of extremities and hyperactive tendon reflexes
  - \* Peripheral neuropathy from diabetes causing numbness or pain in the extremities
  - \* Seizure disorder
  - \* Bladder and bowel dysfunction
    - \* Incontinence contributing to falls
    - \* Urgency causing hurrying to avoid incontinence
  - \* Hearing loss, Meniere's disease – cause dizziness and affects balance
  - \* Vision loss causing difficulty judging distance, decreased depth perception and decreased peripheral vision
    - \* Cataracts
    - \* Glaucoma
    - \* Macular degeneration
    - \* Diabetic retinopathy

**Prevention**

Our “Power Zone” is from the shoulders to knees where our largest muscle groups are. Keeping these muscles at their best is essential for good balance.



Use safe principals for lifting and transferring someone unable to transfer themselves.



Keep items in the kitchen, bathrooms and bedrooms (dressers) within easy, safe reach (approximately waist level) to avoid reaching up or bending down low.

Rooms should be well lit including hallways and stairways. Optimally there should be a light at the top and at the bottom of the stairs. Paint a contrasting

color on the edge of all steps to be seen more easily. A night light should be lit for nighttime bathroom use or wandering.



The bed height should optimally be so that when sitting on the side of the bed the feet will be touching the floor. This is necessary for ease in getting in and out of bed without compromising the balance. This can be challenging as the height of new mattresses are much greater than previously which can increase the height of the bed significantly

Keep in mind that the best throw rug is the absent one! If it is necessary to have a throw rug present (possibly where water dripping on the floor occurs), use a nonslip rug with rubber backing.



Keep all cords for lamps or the phone, etc. out of the walking path. Keep the walking pathway free of clutter and furniture. Stairs should optimally have railings on both sides, but at least one side and be in good repair (indoors and outdoors) without loose carpet.

NEVER use a chair for a step stool. If it is necessary to use a step stool, use one with a bar to hold for steadying.



Have adequate grab bars installed for safety getting in and out of the tub, shower and support using the commode. If someone is unsteady, using a shower chair is helpful and supervision may be necessary.

If a resident's balance or ambulation decreases suddenly, they should be seen by a physician in case of an emergency. A physical therapy / occupational referral is helpful to make suggestions to make the environment safer for the resident. They should also fit the resident for a walker or cane for optimal use and teach the resident and staff exercises for strengthening. You will need an order from the physician.



Strive to avoid dramatic changes in floor surfaces. Doorways and between rooms are the most common areas. Keep outdoor walkways clean and free of snow, ice, leaves, and stones and keep sidewalks in good repair.

Adequate calcium and vitamin D are necessary for bone strength. The physician should test the person's vitamin D level to properly order a supplement if deemed necessary. Dietary sources of calcium are dairy products, salmon and dark green leafy vegetables. High caffeine intake interferes with calcium and Vitamin D absorption. Dietary sources of Vitamin D are fortified milk and cereals, egg yolks, saltwater fish and liver. Sunlight is our main source of Vitamin D.



Sources state that any one that lives north of the 37th parallel in the U.S. may be deficient in Vitamin D.

<http://www.health.harvard.edu/newsweek/time-for-more-vitamin-d.htm>

Vision should be checked yearly. If a resident is to wear glasses, staff should make every effort to encourage them to wear them for safety. Keep in mind that when someone's eyeglass prescription changes it may take time to adjust, especially with bifocals and trifocals. Additional supervision may be indicated.

Safe footwear needs to be worn at all times. Unsafe footwear include high-heeled shoes, backless slippers or shoes, walking in socks only, shoes that are too tight or too loose. Safe footwear can include slip-on loafers, tie shoes, Velcro closure shoes, sneakers (unless the person has a shuffle gait). Replace shoes and slippers when old and loose.



Monitor the length of the residents pants and robes, etc. to make sure they are not too long causing them to trip.

Supervise residents at risk for falling during dressing and encourage them to dress sitting down.

Alcohol intake – "Approved" alcohol intake is 1 drink for females and 2 for males per day. A drink serving is a 12 ounce beer, 5 ounces of wine and 1½ ounces of liquor. Excess alcohol can impair balance and

sedate. It also can cause bone loss/osteoporosis by decreasing absorption of calcium in the stomach; interfere with the pancreas and its absorption of calcium and Vitamin D; decrease estrogen production causing early menopause; increase cortisol which decreases bone formation and increases breakdown; increase parathyroid hormone secretion which leaches calcium from bone; and kill osteoblasts which are bone making cells.

Smoking – the longer you smoke and the more cigarettes you smoke, the greater your risk of fracture in older age.

Fractures take longer to heal; women who smoke often produce less estrogen and tend to enter menopause earlier. Quitting smoking appears to reduce the risk of low bone mass and fractures.

Medications that can accelerate bone loss include, steroids, some anticonvulsants, thyroid medications, some diuretics and blood thinners, proton pump inhibitors to treat GERD (affects absorption of calcium), metformin, cancer treatment – radiation and chemotherapy.

Postural Hypotension is when the blood pressure drops too low when standing. It can cause balance disturbance/dizziness. It is defined when the systolic blood pressure drops more than 20 points or to less than 90 and the heart rate increases 20 or more

points. It can be minimized by staying adequately hydrated (8 glasses a day) unless contraindicated by the physician; changing position slowly; clench fists and flex ankles 10 times before rising (increases the BP so any drop is less significant). Medications that typically cause this are medications for sleep, depression, blood pressure and heart medications.



Exercise makes people stronger, and improves balance and coordination: aerobic exercise, weight bearing exercises to slow osteoporosis, and strength training. Research demonstrates Tai Chi exercise can improve balance and decrease falls. Passive range of motion can help keep joints limber and protect contractures. Passive ROM requires a physician order to Physical Therapy to evaluate, establish an individualized plan and teach staff.



Results of falls can include fractures of hip, arm, skull, pelvis, spine and leg. Falls can also cause concussions, subdural hematoma, lacerations, contusions and burns.

An ounce of prevention is worth a pound of cure. It is very important to do the things that promote good health to prevent falls, not only because of the cost involved but also because of the risk of life or quality of life that falls cause.

**FALL PREVENTION TEST**

Name: \_\_\_\_\_

Role/Title: \_\_\_\_\_

Agency: \_\_\_\_\_

Date: \_\_\_\_\_

Please provide contact information (email address, fax number, or mailing address) where you would like your certificate to be sent:

---

---

You must submit your completed test, with at least a score of 80%, to receive **1/2 hour** of training credit for this course.

- \* To submit via fax, please fax the test and evaluation to 814-728-8887. Please fax only the test and evaluation, not the entire training packet.
- \* To submit via email, please send an email to [HCQUNW@MilestonePA.org](mailto:HCQUNW@MilestonePA.org). Please put "Fall Prevention Test" in the subject line, and the numbers 1—10, along with your answers, job title, and agency in the body of the email, OR scan the test and evaluations pages and email as attachments.
- \* To submit via mail, send the test and evaluation pages to Milestone HCQU NW, 247 Hospital Drive, Warren PA 16365.

**Knowledge Assessment:**

- |   |      |       |
|---|------|-------|
| 1. Hip fractures are the most serious of all fall-related fractures.                                    | True | False |
| 2. Postural hypotension is when the blood pressure rises with a change in position.                     | True | False |
| 3. Men tend to have small stepped gait and wide walking and standing base.                              | True | False |
| 4. Thigh muscles are part of the power zone.  | True | False |
| 5. It is good exercise for residents to reach up to cupboards above their heads.                        | True | False |
| 6. A night light is not good as it may keep the residents awake.  | True | False |
| 7. Throw rugs are necessary to keep the floors clean especially in the kitchen.                         | True | False |
| 8. Anyone can start to do range of motion exercises on a resident if they feel they will be beneficial. | True | False |
| 9. High caffeine intake can interfere with calcium and Vitamin D absorption.                            | True | False |
| 10. The Physical therapist is the best person to establish an exercise plan for a resident.             | True | False |

### EVALUATION OF TRAINING

Training Title: Fall Prevention

Date: \_\_\_\_\_

- |  |   |
|--|---|
| <input type="checkbox"/> Direct Support Professional | <input type="checkbox"/> Provider Administrator/        |
| <input type="checkbox"/> Program Specialist          | <input type="checkbox"/> Provider Clinical Staff        |
| <input type="checkbox"/> Consumer/Self-Advocate      | <input type="checkbox"/> Family Member                  |
| <input type="checkbox"/> Support Coordinator         | <input type="checkbox"/> Support Coordinator Supervisor |
| <input type="checkbox"/> PCH Staff/Administrator     | <input type="checkbox"/> County MH/MR/IDD               |
| <input type="checkbox"/> FLP/LSP                     | <input type="checkbox"/> Other (please list): _____     |

Please circle your PRIMARY reason for completing this home-study training:

- It's mandatory     
  interested in subject matter     
  need training hours     
  convenience

Please circle the best response to each question.

**5 = Strongly Agree**     
 4 = Agree     
 3 = Undecided     
 2 = Disagree     
 **1 = Strongly Disagree**

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1. As a result of this training, I have increased my knowledge. | 5 | 4 | 3 | 2 | 1 |
| 2. I learned something I can use in my own situation.           | 5 | 4 | 3 | 2 | 1 |
| 3. This training provided needed information.                   | 5 | 4 | 3 | 2 | 1 |
| 4. The training material was helpful and effective.             | 5 | 4 | 3 | 2 | 1 |
| 5. Overall, I am satisfied with this training.                  | 5 | 4 | 3 | 2 | 1 |
| 6. I am glad I completed this training.                         | 5 | 4 | 3 | 2 | 1 |

Suggestions for improvement: \_\_\_\_\_

Additional information I feel should have been included in this training: \_\_\_\_\_

I would like to see these topics/conditions developed into home-study trainings: \_\_\_\_\_