

Balance and Falls Prevention



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Risk Factor	Prevention Tips
<p>-Falls: The leading cause of injury in seniors -1 in 4 people over 65 will fall at home Conditions associated with aging</p> <ul style="list-style-type: none"> • May include osteoporosis and lack of physical activity 	<p>Risks can be minimized by performing exercises included in this handout</p> <ul style="list-style-type: none"> • Maintain physical activity, whether it be gardening, walking, yoga, etc. • Eat/drink sufficient calcium • Take a vitamin D supplement (See Handout)
<p>Muscle Weakness</p> <ul style="list-style-type: none"> • May be due to lack of physical activity, old age, or injury 	<ul style="list-style-type: none"> • Perform regular exercises <ul style="list-style-type: none"> ○ Either with weights or using body weight
<p>Balance Difficulties</p>	<ul style="list-style-type: none"> • Wear supportive shoes with rubber soles • Perform daily chores with caution • Perform balance exercises daily (attached) • Use prescribed assistive devices properly <ul style="list-style-type: none"> ○ Your physical therapist @ IMGPT can provide you with training
<p>Vision Problems</p> <ul style="list-style-type: none"> • Can be affected by cataracts, glaucoma, or age induced decrease in depth perception 	<ul style="list-style-type: none"> • Schedule regular check-ups with an ophthalmologist • Wear eyeglasses/contacts if needed • Apply a color strip to first and last step of stairs in home <ul style="list-style-type: none"> ○ Color strips may also help handrails stand out
<p>Medications that may affect balance and awareness</p>	<ul style="list-style-type: none"> • Know all of the common side effects of the medications you take • Limit alcohol while on medication • Speak with your doctor about whether your medication will increase your risk of falling • When a new medication is started take time when transitioning from lying to sitting and sitting to standing
<p>Environmental Hazards</p> <ul style="list-style-type: none"> • Poor lighting, loose railings, unsteady furniture • Tripping over rugs and decorative items 	<ul style="list-style-type: none"> • Remove clutter out of your home • Use step stools to reach for things • Use non-skid mats inside and outside of the tub • Install grab bars around the tub and toilet • Have a phone on each level of your house • Ensure that all rooms are well lit • Secure rugs with non-skid tape • Remove throw rugs from house

Vitamin D deficiency and increased risk of falls



In Vitamin D deficient individuals supplementation has been shown to reduce fall risk by as much as 43%. Falls are the most common accident of daily living in individuals over the age of 65. Falls can cause injury that often leads to disability and lifestyle changes.

- **Vitamin D improves muscle function, walking, balance, and attention capacity.**
- **Always consult with your physician prior to beginning any supplementation or exercise program.**
- **Vitamin D along with exercise can significantly reduce your risk of falls**

Fall Risk

The prevalence of falls increases with age due to physiological changes within the body. The incidence of falls is 30% in individuals over 65 and increases to 50% in those over the age of 80.

Vitamin D

Vitamin D is a hormone that can be utilized by the body in two forms. The first method is by sun exposure to the skin. The second is through dietary intake. Foods that naturally contain Vitamin D include: fatty fish, such as salmon, mackerel, tuna, sardines, and eggs. Foods such as milk, cereal, or margarine can be fortified with Vitamin D. This involves the incorporation of the vitamin into the foods while they are made. Vitamin D supplements are also available but you should consult with your physician before taking supplements.

How Vitamin D helps

Vitamin D plays a role in protein synthesis of muscle. It specifically acts on anti-gravity muscles that are important for maintaining balance. Low levels of vitamin D have been shown to cause decreased postural stability and decreased muscle force. Vitamin D supplementation has been shown to improve attention capacity in order to react more quickly to changes in the environment.

How much Vitamin D is enough?

Vitamin D insufficiency is defined as having blood concentrations between 10-30 ng/mL. Vitamin D deficiency is defined as blood concentrations of <10 ng/mL. If you are deficient it is recommended to supplement with 800 IU/day in order to show benefits. Studies have shown that supplementing with calcium further decreases fall risks.

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STANDING EXERCISES



One-Leg Balance
Balance on one leg.
Repeat on the other leg.
Begin on a firm surface.

Calf Raise

Balance on one leg.
Go up onto your toes.
Repeat on the other leg.



Hip Raise
Balance on one leg.
Lift your hip upward.
Repeat on the other leg.

Hip Extension

Balance on one leg.
Extend your hip behind
your body.
Repeat on the other leg.



Knee Bend
Balance on one leg.
Bend your knee.
Repeat on the other leg.

***** Perform all exercises by
holding onto a chair for
safety*****

Balance: Repeat 3 reps on each leg for 30 seconds

Calf Raise: Hold each Raise for 3-5 seconds
Repeat 15 times on each leg
Build up to 3 sets

Hip Raise: Hold for 1-3 seconds
Repeat 30 times on each leg

Hip Extension: Hold for 1-3 seconds
Repeat 30 times on each leg

Knee Bend: Hold 1-3 seconds
Repeat 30 times on each leg



Seated Stability

- Tighten core muscles prior to moving limbs
- For beginners: keep core tight and raise one arm or leg at a time
 - Repeat 15 times for each limb
- Advanced: Raise the opposite arm and leg simultaneously while keeping your core tight
 - Repeat 15 times and switch sides.
(DO NOT lift both legs together as pictured)

Minisquats

- With a chair behind you for safety, clasp hands around a pole and lower body weight as if you are about to sit in a chair
- Return to an upright position after lowering to an angle of 90 degrees
- Be sure to not allow knees to bend over toes.
- Do 2 sets of 15

