1 HOUR CE CBDN Approved

The IMPACT of Nutrition on Preventing Falls

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Preventing falls in older adults continues to be a primary focus area for quality care and services. Older adults value their independence, and a fall can significantly reduce their ability to remain self-sufficient. Falls are very common and occur to more than one-third of people aged 65 and older, and those who fall once are two to three times more likely to fall again. Among older adults, falls are the leading cause of both fatal and nonfatal injuries and are responsible for significant disability, hospitalization, loss of independence, and reduced quality of life. It should not be surprising that most fractures among older adults are caused by falls.

Falls also have a huge economic impact. Direct medical costs for fall injuries in the United States total $34 billion annually. States such as Florida share that for every older adult fall prevented, the following costs could be saved: the median admission charge for non-fatal fall injury hospitalizations was $46,067, with total charges to the state of more than $3.64 billion. The median length of stay in a hospital was four days.

In addition to deaths and injuries, as well as the costs associated with them, falls can have many negative consequences for older adults, including:

- Fear of falling again
- Forced relocation from the home
- Loss of independence
- Stress in the family

WHY DO OLDER ADULTS FALL?

There are many reasons why an older adult might fall, including a variety of biological, behavioral, and environmental factors. Risk factors include:

- A previous fall
- Chronic health conditions (e.g., arthritis, stroke)
- Conditions in the home (e.g., slippery floors, loose rugs, cords on the floor, poor lighting)
- Fear of falling
- Medicines (including interaction effects)
- Mobility problems (e.g., muscle weakness, balance)
- Poor nutrition (leading to weakness, dizziness, fainting)
- Poor vision or hearing

Note that older adults who have one or more of these conditions may have a higher risk of falling.

FALLS AND THE IMPACT ACT OF 2014

Falls are one of the Quality Measure Domains to be standardized as part of the IMPACT Act of 2014. The IMPACT Act addresses all of the priorities within the CMS Quality Strategy, which is framed using the three broad aims of the National Quality Strategy:

- Better Care
- Healthy People, Healthy Communities
- Affordable Care

The IMPACT Act of 2014 supports these three aims while upholding the CMS Quality Strategy's goals, which are:

- Making care safer by reducing harm caused in the delivery of care.
- Ensuring that each person and family is engaged as partners in their care.
- Promoting effective communication and coordination of care.
- Promoting the most effective prevention and treatment practices for the leading causes of mortality.
- Working with communities to promote wide use of best practices to enable healthy living.
- Making quality care more affordable for individuals, families, employers, and governments by developing and spreading new healthcare delivery models.

A part of the IMPACT Act of 2014 requires developing and reporting measures pertaining to resource use, hospitalization, and discharge to the community. Incidence of major falls is one of the Measure Domains to be standardized.

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PREVENTION OF FALLS

Prevention of falls is multifaceted, and nutrition plays a very important role. We know that falls are not an inevitable result of aging. In recent years, systematic reviews of fall intervention studies have established that prevention interventions can reduce falls. Over time, lifestyles often change and many people lose their strength and endurance as they age.

Several studies found the following:

- In a study in Australia, malnutrition was associated with increased risk for falls among older adult patients and increased risk for hospitalization. The conclusion was that nutrition screening and assessment of patients deemed malnourished may help avoid subsequent falls, and may save the patient further suffering and healthcare costs. (Vivanti AP et al. Emergency Medicine Australasia. 2009, 21: 386-394)
- *Malnutrition is associated with an increased risk of falls and impaired activity in elderly patients in Dutch residential long-term care (LTC): A cross-sectional study* concluded that their study clearly shows an association between malnutrition and an increased risk of being a faller and that malnourished residents who receive nutritional intervention have a lower risk of being a faller. (Archives of Gerontology and Geriatrics 56 (2013) 265–269)
- *Dietary protein intake and subsequent falls in older men and women: The Framingham study* research looked at the association between dietary protein intake and risk of subsequent falls in a population-based cohort of elderly men and women. The findings highlighted the importance of adequate protein intake as a potentially modifiable risk factor for fall prevention in older adults. (The journal of nutrition, health & aging, Volume 15, Issue 2, pp 147-152, 2011-02)

Muscle Mass and Muscle Loss (Sarcopenia)

It is important to remember that the normal aging process results in lost muscle mass, even when maintaining the same weight. After age 70, there is approximately 15 percent muscle loss per decade. Comparing the thigh muscle of a 25 year old active individual with a 75 year old sedentary individual, when both are the same weight and height, the 75 year old will have considerably less muscle. This loss of muscle is called sarcopenia.

Loss of muscle mass often leads to diminished strength, mobility issues, osteoporosis, frailty, and loss of physical function and independence.

As people age, they lose muscle mass faster whenever there is a period of inactivity such as a hospitalization and bed rest. It is possible to lose up to 10 percent of leg muscle mass in 10 days of inactivity, even while eating an adequate amount of protein.

Loss of muscle mass is an important predictor of overall health status. Muscle loss often leads to diminished strength and decreased activity levels and can contribute to mobility issues, osteoporosis, frailty, and loss of physical function and independence. The weakness that accompanies sarcopenia can dramatically increase the

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risk of falls for older adults, and one-half of all accidental deaths among people over the age of 65 are related to falls. Therefore, it is very important to maintain muscle mass for independence, mobility, and normal walking speed.

Maintain Muscle Mass with Protein and Physical Activity

Muscle mass can be maintained by paying attention to both nutrition and physical activity. It is important to consume an adequate amount of protein evenly throughout the day. Unfortunately, only 15 percent of older adults consume 75 percent of the protein they need. When less protein is consumed than is needed, there is muscle breakdown and muscle loss. Muscle growth requires adequate protein intake and exercise.

Studies have shown that consuming 20 to 30 g of protein or approximately three to four ounces of meat or high protein foods (depending on your body size) three times a day can help increase muscle growth both in the young and old. Protein containing the amino acid leucine provides additional benefits. Consuming more than 30 g of protein at one time is not beneficial. Adding exercise along with the protein is needed to maximize the muscle growth and strength. The best response is when protein foods are consumed 60-90 minutes before exercise, or a protein beverage is consumed up to 60 minutes after exercise.

DIETARY TIPS TO MAINTAIN MUSCLE MASS

Be sure to consume adequate protein three times a day. The following sample menu has approximately 30 grams of protein at each meal.

Sample Menu:

Breakfast

- 2 egg omelet
- 1 slice wheat toast
- 8 oz. skim milk

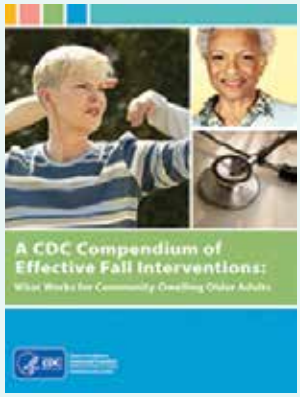
Lunch

- Sandwich (2 oz. chicken, lettuce, tomato, whole wheat bread)
- Peach and ¼ cup cottage cheese
- 8 oz. skim milk

HELPFUL RESOURCE:

Downloadable Document from CDC

A CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Older Adults 3rd Edition by Judy A. Stevens, PhD and Elizabeth Burns, MPH, Division of Unintentional Injury Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, Ga., 2015



www.cdc.gov/HomeandRecreationalSafety/Falls/compendium.html

Dinner

- 3 oz. fish
- Asparagus
- Strawberries on angel food cake
- Whole grain roll
- 8 oz. skim milk

Tips for Adding Protein

- Add cheese to vegetables, salads, potatoes, rice, noodles, and casseroles.
- Add hard-cooked eggs to salads.
- Consider Greek yogurt alone or add to fruit and cereal.
- Make fruit smoothies with milk or yogurt.
- Add peanut butter to sandwiches, toast, crackers, or muffins or use as a dip for vegetables and fruit.
- Add powdered milk to cream soups, mashed potatoes, casseroles, puddings, and milk-based desserts.
- Add a scoop of powdered milk, whey protein, or powdered commercial supplement mix to each cup of regular milk (2 cups) daily or add to hot cereal.

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#MenuDirections

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- Add nuts, seeds, or wheat germ to casseroles, breads, muffins, pancakes, and cookies; or use nuts, seeds, or wheat germ to top fruit, cereal, ice cream, and yogurt or in place of breadcrumbs.
- Add beans (i.e., navy, kidney, pinto, black) and lentils to soups, casseroles, or salads.

Vitamin D

In addition to protein, vitamin D has been shown to impact muscle strength. Low blood levels of vitamin D are associated with low muscle strength and falls.

It is very difficult for older adults to obtain adequate amounts of vitamin D from the diet or sunshine, so supplements may be necessary. It is important to know blood levels of vitamin D levels.

In individuals with sarcopenia, vitamin D supplementation is needed in doses sufficient to increase levels to within normal ranges. Supplementation may range from 800-2000 mg per day, in doses sufficient to increase levels above 100 nmol/L as an adjunctive therapy. Always check with a physician on the amount needed. Supplementation of vitamin D in individuals with low levels has been shown to increase muscle strength.

SUMMARY

Nutrition plays a vital role in preventing falls in the aging, and appropriate medical nutrition therapy (screening, assessment, and interventions) can assist in preserving independence and physical functioning for improved quality of life. Of course there is the added benefit of helping save billions of dollars on healthcare costs related to treatment of falls.

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