



## Nutrition Recommendations for the Independent-Living Older Person

*Brenna Brucker, Lynn McNicoll, MD, Renee Shield, PhD*

Up until her 83rd birthday, Mrs. had steadfastly refused to comply with dietary recommendations for her diabetes. She continued to boil her oatmeal in sugar-water and meet her friends daily at a local bakery for pie.

However, after a bout with a urinary tract infection exacerbated by uncontrolled blood sugar, Mrs. W agreed to see the nutritionist. She wanted to continue living independently and explained that she had been resistant because she did not want to drastically change her lifestyle. Now, on her 83rd birthday, she was ready to listen.

### NUTRITION AND HEALTH

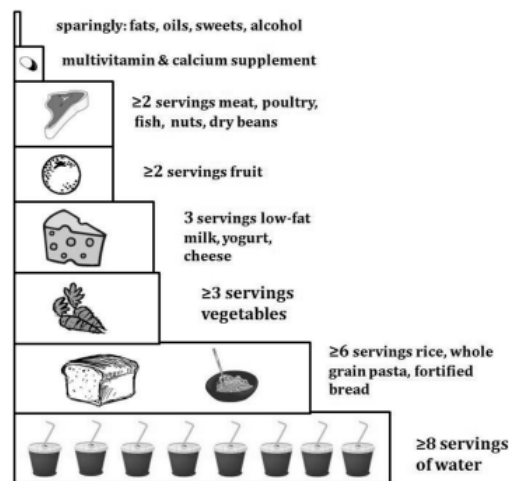
Independence is based on mobility and cognitive function; the ability to go where you want, remember what you want to do when you get there, and carry out your intended activities. High function in old age is achieved by maintaining a healthy weight, observing proper nutrition, and maintaining or even improving muscle strength. Gentle changes to lifestyle, such as taking a multivitamin, taking short walks, or joining a water aerobics class, can have a substantial impact on preserving independence. Often, independently living older persons do not have calorie malnutrition but do have macronutrient and micronutrient deficiencies. Overall health, especially mobility, is dependent on maintaining a healthy weight.

Older persons typically experience weight gain because they are less active and have less metabolic need, yet consume the same caloric amount as when they were more active. This weight gain can lead to less mobility and premature mortality. High protein foods, such as low-fat dairy and meat products, are linked to fewer regained pounds post weight-loss. In an ongoing large randomized controlled study at eight different European centers, preliminary data showed that higher protein content enhanced weight loss and prevented regaining the lost weight.<sup>1</sup> Dietary calcium decreases fat absorption, and a sufficient intake may also prevent excessive hunger during weight loss diets.

However, older persons sometimes experience unintentional weight loss. Physicians should monitor the elderly patient for a weight loss of more than ten pounds or 10% of body weight in six months. If this loss was unintentional, it may be due to several conditions; e.g., depression, hyperthyroidism, ill-fitting dentures, undiagnosed cancer, and occult infection. Weight loss from increasing exercise can be healthy because muscle is built as fat is lost. However, weight loss from anorexia and immobility can lead to loss of muscle and the risk of falls.

Sometimes it is difficult to choose foods that are high in nutrients, low in calories, and inexpensive. Meals on Wheels is a national organization that uses local volunteers to deliver hot meals to many independent older persons; (Sidebar: RI Nutrition Resources) however, not all meals meet individual taste preferences. This is true for other community nutrition pro-

Figure: Nutrition recommendations for older persons over 70<sup>4</sup>



Examples of 1 serving:

Water: 1 cup. Carbohydrate: 1/2 cup of cooked cereal, rice, or pasta, 1 slice of bread, 1 ounce of ready-to-eat cereal. A normal dinner-sized portion of spaghetti would count as 2-3 servings. Vegetable: 1 cup of raw leafy vegetables, 1/2 cup of non-leafy vegetables (cooked or chopped raw), 3/4 cup of vegetable juice. Dairy: 1 cup of milk or yogurt, 2 ounces of processed cheese. Fruit: 1 medium apple, banana, orange, 1/2 cup of chopped, cooked, or canned fruit, 3/4 cup of fruit juice. Meat and nuts: 2-3 ounces of cooked lean meat, poultry, or fish, 1/2 cup of cooked dry beans, 1 egg, 1/3 cup nuts. Fats, oils, sweets, alcohol: No serving sizes because these items should be consumed in very small quantities. The number of servings one should consume is based on how many calories the individual needs; the lowest number of servings in each category is based on a 2,000 calorie/day diet.

<sup>4</sup> Russell RM, Rasmussen H, et al. Modified Food Guide Pyramid for People over Seventy Years of Age. *J. Nutr* 1999;129(1):751-3.

**Table: Key Points in the treatment of nutritional issues for Independent-Living Older Person**

|           | Lab Test  | Recommendation to Patient  |
|-----------|---|--|
| Nutrition | Albumin, prealbumin   | (Figure: Nutrition recommendations)  |
| Vitamins  | Blood test for vitamins D, B12, methylmalonic acid, homocysteine levels, and folate | Take a multivitamin plus an additional calcium supplement daily (goal: 1500 mg calcium/day with 800 IU vitamin D)                          |
| Hydration | Blood urea nitrogen and creatinine  | Drink 8 glasses of water per day, even if not thirsty unless contraindicated   |
| Exercise  | Creatinine Phosphate, Kinase  | Resistance training for 15 minutes every day, focusing on quadriceps and triceps<br>Walk, swim, or water aerobics for 30 minutes every day |

grams. This can lead to older persons either not eating enough to receive sufficient nutrients or choosing primarily low-cost, low-nutrient, convenient snack foods, in order to feel full. Furthermore, lifelong eating habits can be difficult to change. Several sets of guidelines recommend a balanced diet such as the food pyramid (Figure: Nutrition recommendations).

ries for the day). Multivitamins contain the recommended daily allowance of most of the major vitamins, including vitamins D, B6, and B12 (to guarantee macronutrient and micronutrient sufficiency) at \$15 - \$35 per year if taken once daily.

Some multivitamins may contain several times the recommended daily allowance of vitamin B12, which is harmless even

## VITAMIN SUPPLEMENTS

Most geriatricians believe that multivitamins are important, cost very little, and carry little if no risk. These geriatricians believe that multivitamins are justified in all elderly populations (not just those losing weight or with absorption problems) because it is extremely difficult to ensure that each meal contains essential nutrients while fighting the constraints of budget, availability, time, taste preference, and caloric balance (not exceeding the recommended calories

## RI NUTRITION RESOURCES

### Delivered Meals and Sit-down Meal Sites:

#### RI Meals On Wheels [www.rimeals.org](http://www.rimeals.org) (401) 351-6700

- Daily deliveries to over 2,000 homes; waiting lists vary
- For those unable to cook, living alone, 60 years old or older, and homebound
- Suggested donation of \$15.00 per week
- Example main entrée: potatoes, rice or pasta, a vegetable, milk or juice, bread, dessert and occasional salad.
- "Diabetic," finely chopped and kosher meals also available

#### The Ocean State Senior Dining Program [www.dea.ri.gov/programs/food\\_assistance.php](http://www.dea.ri.gov/programs/food_assistance.php) (401) 847-7821

- Hot nutritious lunches M-F for older or disabled individuals at 75+ meal sites
- Small donation encouraged
- Transportation available with 24 hours notice

#### Senior Centers [www.providenceri.com/senior/centers.php](http://www.providenceri.com/senior/centers.php)

- Majority of Senior Centers provide hot lunches, outreach, transportation and health services
- Website with calendar of events for most RI senior centers: [www.seniordigestnews.com/Calendar/tabid/1528/Default.aspx](http://www.seniordigestnews.com/Calendar/tabid/1528/Default.aspx)

### Food Delivery Services and Nutrition Access:

#### RI's extensive network of online grocery ordering and delivery: [www.online-grocery-shopping.net](http://www.online-grocery-shopping.net)

#### Ask Rhody [www.askrhody.org](http://www.askrhody.org)

- Rhode Island's social service website, which provides information on all services for seniors in RI

#### Eldercare Locator [www.eldercare.gov](http://www.eldercare.gov) 1-800-677-1116

- Free national service that will connect seniors with people who will set up home-delivered meals, transportation, legal advice, adult day care, home health services and housing options

#### Senior Nutrition Awareness Project (SNAP) <http://www.rimeals.org/special-programs/snap>

- Free nutrition hotline (1-800-595-0929) for seniors with questions about food or nutrition; registered dietitians provide information by phone and mail
- Offers free nutrition newsletters, recipes, educational videos and fact sheets
- Provides free nutrition workshops in senior centers and offers educational material to borrow

#### AARP <http://www.aarp.org> (401) 248-2671

- Produces booklets and tapes and a monthly magazine with nutrition, drug and health information

#### Senior Companion Program (401) 462-0569

- Volunteers assist frail, isolated older adults in their homes, adult day centers and community sites
- Offer pleasant company for dining, socializing or help in receiving food delivery

at much higher doses. B12 deficiency can lead to dementia; in the US, more than 15% of people over sixty years old have a B12 deficiency.<sup>2</sup> In some, this deficiency is due to age-related gastric atrophy and hypochlorhydria or use of a proton-pump inhibitor, resulting in reduced gastric acid and less efficient absorption of vitamin B12 from foods. Nonetheless, crystalline vitamin B12 found in supplements can be absorbed even if there is a malabsorption syndrome; therefore, oral supplementation is usually sufficient. Clinicians should also consider monitoring methylmalonic acid and homocysteine.

In multivitamins, the dose of vitamin E is well below the levels reported to cause an increase in overall mortality, the dose of vitamin A is too small to increase risk for fractures and osteopenia, and the dose of beta-carotene (usually a part of the total vitamin A activity) is well below levels associated with lung cancer.

Multivitamins typically contain less than half the recommended levels of calcium and vitamin D. The recommended dose in older persons is 1500 mg calcium accompanied by 800 IU vitamin D. In summary, older persons should take a multivitamin plus an additional calcium supplement daily, to ensure adequate calcium and vitamin D (Table: Key Points).

## HYDRATION

To maintain weight and observe proper nutrition, it is as vital to stay hydrated and follow a high fiber diet as it is to take supplements. Kidney function declines with age, as does the ability to detect thirst. For healthy older adults without contraindications, it is recommended that they should drink eight or more glasses of water or juice every day to reduce stress on the kidneys, prevent delirium, and help maintain normal bowel function. However, older people often restrict their hydration to limit trips to the bathroom, minimize incontinence accidents, and reduce the risk of falls on the way to a bathroom.

## EXERCISE

Sarcopenia (Greek, *sarx* -flesh, *penia*- loss) is an age-related progressive loss of muscle mass. It is associated with decreased mobility and increased falls, fractures, and nursing home admissions. Sarcopenia is easy to diagnose in underweight older persons but is often overlooked in older persons with high body mass indexes. Overweight older persons can have legs that look strong, yet are only adipose tissue and bone, with such significant sarcopenia that a fall is imminent. Sarcopenia is associated with the loss of type II fibers.<sup>3</sup> However, with age, type I fibers hypertrophy. To maximize muscle, older persons should exercise every day, consume more than two servings of protein per day, and minimize periods of bed rest.



To preserve muscle, the recommendation is to promote resistance training for fifteen minutes each day, optimally every day of the week, concentrating predominately on quadriceps extension, but also on triceps extension (maintaining “get up and go”). Low impact exercise for thirty minutes per day is optimal to protect cardiovascular health, enhance mood, maintain bone density, improve balance and gait, as well as counteract the age-related increase in fat and decrease in skeletal muscle. Even minimal exercise (such as, walking, Wii, exercise bike, gardening) can be beneficial, as well as improve mood and outlook.

## BACK TO MRS. W

A month after her visit to the nutritionist, Mrs. W began to check her blood sugar and watch her diet. Most important, Mrs. W convinced her friends to join her three times a week for a water aerobics class (instead of pie); this activity increased her motivation as well as maintained her social network. The extent of social relationships is a powerful predictor of functional status and mortality. Preserving mobility and cognition by maintaining a healthy weight, observing appropriate nutrition, and exercising are cornerstones to healthy aging, almost as important as having somewhere to go and a purpose for going there.

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*Brenna Brucker is a medical student at The Warren Alpert Medical School of Brown University.*

*Lynn McNicoll, MD, is Assistant Professor of Medicine at The Warren Alpert Medical School of Brown University.*

*Renee Shield, PhD, is Clinical Associate Professor of Community Health at The Warren Alpert Medical School of Brown University.*

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