UF IFAS Extension UNIVERSITY of FLORIDA

FCS2213

Elder Nutrition[1]

Linda B. Bobroff and Martie Gillen[2]

Aging in the 21st Century

According to the US Census Bureau, by the year 2050 the nation's over-65 population will more than double to 88 million, and the more frail, over-85 population will quadruple to 19 million. Currently, Florida ranks first in the percent of the population who are full-time and seasonal residents over the age of 65 in the United States. Older Floridians, their families, and communities face many issues related to aging. *Aging in the 21st Century* is an eight-topic program that addresses issues such as:

By 2050 in the United States, the over 65-popluation will more than double and the over-85 population will quadruple.
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- Health and medical care
- Family relationships
- Economic concerns
- Caregiving
- Home modifications
- Retirement
- Nutrition and diet

This fact sheet focuses on how aging affects nutrition and diet and choices that older adults can make to improve or maintain their health and well-being as they age.

What You Will Learn

- Physiological Changes: What are the main changes in the body that affect nutrition during older adulthood?
- Socioeconomic Changes: What social and financial changes can interfere with healthful nutrition during older adulthood?
- Focus on Nutrients: What nutrients are most critical during older adulthood, and how can they be incorporated into a healthful eating plan?

The Importance of Eating Well

Good nutrition is important throughout life, starting even before we are born. However, at certain stages in life, such as infancy, pregnancy, and in older age, the importance of having good eating habits is especially critical. A healthful eating pattern can help people age successfully by

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2. Linda B. Bobroff, PhD, RD, LD/N, professor, Department of Family, Youth and Community Sciences; and Martie Gillen, PhD, assistant professor, Department of Family, Youth and Community Sciences, UF/IFAS Extension Gainesville, FL, 32611.

- supporting positive nutritional status;
- aiding in weight management;
- promoting a healthy immune system;
- decreasing risks of infection, illness, falls, and chronic diseases; and
- maintaining digestive health.

A number of age-related factors can adversely affect food choices of older Americans. Nutrition educators provide information to older adults that can help them make healthy food choices, and, when necessary, direct them to programs that provide additional assistance. These programs can help older adults in need improve their nutritional health, reduce risk of chronic diseases and conditions, and maintain good quality of life.

Physiological Changes

As people age, their bodies can change in ways that can directly or indirectly affect their nutritional status and eating habits. This is important because eating habits impact nutritional status and overall health. The following are some of the major physiological changes experienced by older persons and potential nutrition-related consequences or health risks. This information can be used to explain to interested seniors how changes in their bodies affect nutrient needs and overall health.

Change: Decreased Lean Body Mass (including muscle, bone, connective tissue, organs, and water)

- Increase in obesity risk if energy intake is not decreased in later years
- Decreased strength
- Increased risk of falls and bone fractures

Change: Increased Body Fat

- Increased risk of glucose intolerance and insulin resistance, which may result in development of diabetes

Change: Decreased Body Water

- Increased risk of dehydration

Change: Decreased Immune Function

- High incidence of infection
- Increased risk for hospitalization

Change: Decreased Sense of Taste and Smell

- Decreased food intake, which can affect nutritional status
- Poor quality of life

**If consumers experience a change in their sense of taste or smell with a new medication, they can ask their doctor if a different medication can be prescribed.*

Change: Impaired Vision

Impacts ability to

- shop for food;
- read food labels and recipes;
- prepare foods;
- clean the kitchen (and keep food safe); and
- attend congregate nutrition site or participate in other community activities.

Change: Decreased Saliva Production

- Reduced taste perception
- Impact on chewing and swallowing
- Decreased oral digestion of food
- Increased risk of gum disease and tooth loss
- Limited food choices, which can reduce diet quality and nutritional status

Change: Decreased Intestinal Motility

- Decreased food intake
- Constipation

Adequate fiber intake can help to maintain normal intestinal functioning.

Change: Decreased Lactase in Small Intestine

- Decreased ability to digest lactose in milk and milk products.

Older adults with lactose intolerance may limit milk and other good calcium sources in their diet, leading to increased risk of bone loss, fractures, and falls. Persons with lactose intolerance can choose lactase-treated milk or milk substitutes that are fortified with calcium and vitamin D. Taking a calcium/vitamin D supplement can help ensure adequate intake of these nutrients. Many persons with lactose intolerance can tolerate small quantities of milk at meals. Yogurt is often well-tolerated in small amounts, and hard cheeses do not contain lactose.

Socioeconomic Changes

Two major socioeconomic changes that can markedly affect eating patterns and nutritional status are social isolation and limited income.

Social Isolation

As people age, they are at increased risk for being socially isolated. They may be faced with the death of their spouse and/or other loved ones and friends. Retired people may lose contact with work colleagues, and if not involved in community groups, may spend increasing amounts of time alone.

Physical restrictions may contribute to decreased participation in activities that would otherwise keep older persons socially involved.

Social isolation is associated with increased risk for food insecurity among older persons, especially among those with limited financial resources. This may be related to the inability to shop and/or prepare food, inadequate resources to purchase food, and decreased appetite.

Older persons who eat alone typically consume fewer calories, and they may have a less varied diet than those who eat with other people. This can place them at risk for poor nutritional status and associated health consequences.

For some older people, social isolation leads to depressive symptoms, such as lack of interest in usual activities, or to clinical depression. In addition to its effect on appetite, depression can cause confusion, memory loss, and other debilitating conditions. It is critical for older persons experiencing these symptoms to be diagnosed and, if necessary, treated for depression. Getting proper treatment can help improve food intake and nutritional status, as well as overall quality of life.

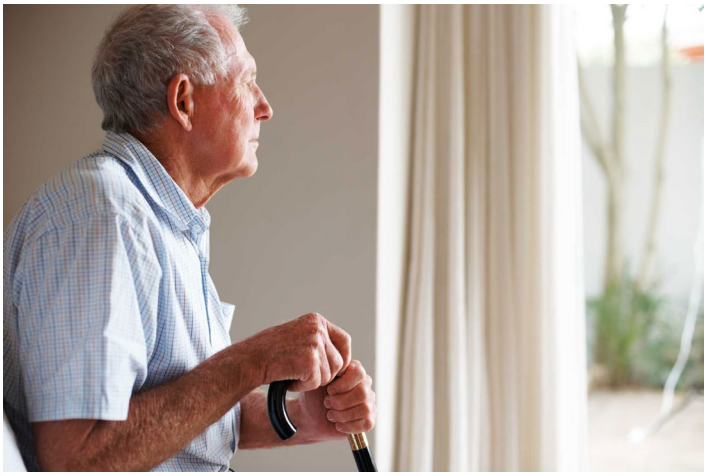

Figure 2. Social Isolation can negatively influence older adults' nutritional status.
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Participating in Extension education programs, volunteering, being involved in religious activities, and attending congregate nutrition sites are a few ways that older persons can stay active and involved in community life.

Limited Income

The poverty rate for persons 65 and above was 9.1% in 2013, representing 3.9 million persons. Women, older adults living alone, those living in the South, in large cities, or rural areas and small towns, and Hispanic or African-American seniors are more likely than others to live in poverty. Limited income may lead to inadequate food intake due to lack of money available to purchase food. It is estimated that in 2011, 8.8% of elderly Americans who lived alone were food-insecure due to lack of resources. These individuals often have less nutritious diets or rely on food assistance programs or emergency food sources to have adequate food. An additional 3.7% of older adults living alone had **very** low food security, which placed them at risk for hunger at least some of the time. An insufficient diet contributes to poor nutritional status and is associated with adverse health effects, such as bone loss and fractures, infection, and chronic diseases.

Older persons with limited means should be encouraged to participate in programs such as the Older Americans Act Nutrition Program (congregate nutrition sites and home-delivered meals, such as Meals on Wheels), Supplemental Nutrition Assistance Program (SNAP, formerly called Food Stamps), and other programs available in their communities.

Focus on Nutrients

As people age, it becomes critical for them to select a diet rich in nutrient-dense foods. The need for energy (calories) decreases with age, while most other nutrient requirements remain the same or actually increase. Making healthful choices for a nutritious diet can be a challenge when the quantity of food eaten is limited due to lower energy needs.

This section focuses on some of the nutrients that are critical for older persons. These nutrients may be important to older adults due to increased need, low typical intake, or physiological changes that affect nutritional status.

Energy

With increasing age, lean body mass decreases and metabolism slows. There is a decline in the energy requirement with every passing decade of life starting at about age 30. In addition, physical activity often decreases as people age, further decreasing the energy requirement. Estimated daily calorie needs for older men and women are shown in Table 1.

Table 1. Estimated Daily Energy Needs for Older Adults at Three Activity Levels

Age	Sedentary (kcal per day)	Moderately Active (kcal per day)	Active (kcal per day)
60 (men) 60 (women)	2,200 1,600	2,400 1,800	2,600 2,200
75 (men) 75 (women)	2,000 1,600	2,200 1,800	2,600 2,000
85 (men) 85 (women)	2,000 1,600	2,200 1,800	2,400 2,000

Source: USDA/USDHHS. *Dietary Guidelines for Americans 2010* (Appendix 6)

In order to obtain all the nutrients needed for good health, older persons must select a diet rich in foods of high nutrient density—those with a high ratio of nutrients to calories. This becomes especially important in the later years of life when energy needs are quite low for many older persons.

Older adults who stay physically active are able to consume a higher calorie diet without gaining weight and have more flexibility in their food choices. Strength training can help older adults maintain or even increase their muscle mass and offset, at least in part, the natural decline in lean body mass and energy requirement that occurs with age. Educational programs that incorporate physical activity can help older persons increase their strength, flexibility, and energy level.

Water

Dehydration can be a significant problem for some older adults. During older age, the thirst mechanism often is compromised, so by the time an older person feels thirsty, he or she may already be dehydrated. In addition, in older adults, the kidneys are often less able to concentrate urine, so more water is lost from the body. Also, some medications commonly taken by older persons have a diuretic effect, which further exacerbate hydration status. Dehydration can lead to headache, confusion, fatigue, and constipation.

It is critical that elderly persons drink fluids on a regular basis, before they become thirsty. Some older persons limit fluid intake due to concerns about incontinence or having to use the bathroom during the night. Health professionals can encourage older adults to drink more fluids early in the day, and they should emphasize the importance of hydration to motivate older adults to drink adequate amounts of fluid.

How Much Is Needed?

Approximately six to eight glasses of fluid daily are often recommended to promote hydration. Individuals may need more or less based on their body composition, activity level, and state of health. Fluids include water, carbonated water (seltzer or club soda), fruit juices, milk, and other non-alcoholic beverages. Evidence confirms that habitual caffeine consumption has no effect on hydration status. Coffee, tea, and other caffeinated beverages do not need to be excluded. **If a person is under the care of a physician for congestive heart failure or another condition related to fluid balance, he or she may need to restrict their fluid intake, and these general recommendations would not apply.**

Protein

Adequate intake of dietary protein minimizes loss of skeletal muscle, helps older adults maintain strength and mobility, and decreases risk of falls. Individuals who are chronically ill, have suffered a trauma, or have an infection have a higher protein requirement. Foods high in protein

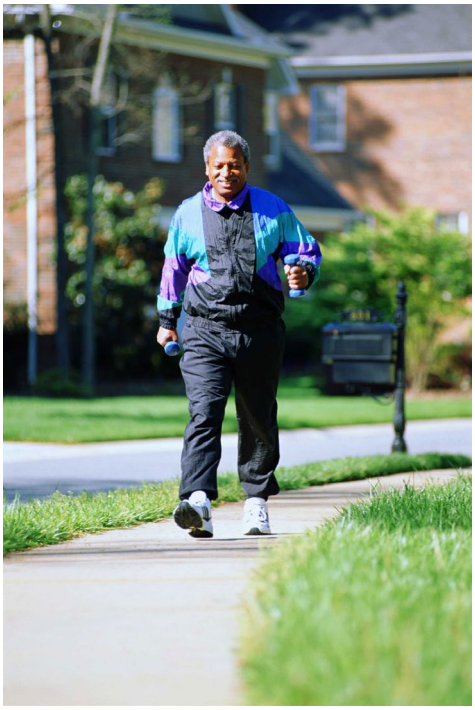

Figure 3. Being physically active helps older adults stay fit and healthy throughout life.
Credits: Thinkstock/Stockbyte

include lean meat, poultry, seafood, milk, legumes, eggs, and nuts.

The dietary recommendation for older adults is the same as for younger persons. Most Americans who eat enough food to meet their energy needs get an adequate amount of protein, often much more than they require. The Dietary Guidelines for Americans recommend that protein be obtained from a combination of plant and animal sources, especially those low in solid fats.

How Much Is Needed?

19 years and older:

Men: 56 g/day*

Women: 46 g/day*

*These amounts were calculated for average weight adults, 126 pounds for women and 154 pounds for men. Larger men and women need more protein in their diets, which they can get from eating enough healthful foods, including good sources of protein. To calculate your protein needs, divide your body weight in pounds by 2.2 to get your body weight in kilograms. Then multiply your weight in kilograms by 0.8 to get your dietary protein recommendation.

Fat

Fat provides taste and a pleasing texture to many foods. This is important for everyone who enjoys eating, but it can be especially important for older persons with a poor appetite. Fat adds energy density to foods, which may help those who have a poor appetite to obtain adequate calories and stay well nourished.

On the other hand, consuming a diet high in fat, especially saturated fat, over a period of time increases risk of cardiovascular disease, so the amount of fat in the overall diet should be moderate. Older adults at risk for cardiovascular diseases should limit their intake of saturated fat, *trans* fat, and cholesterol. The goals of having an adequate energy intake and reducing disease risk need to be individualized based on each person's nutritional status and health risks.

Fiber

There are two categories of fiber: dietary fiber, which is found naturally in foods, and functional fiber, which is found in supplements and fiber-fortified foods. Fiber can be classified as soluble or insoluble, both of which have health benefits. Most plant-based foods contain a mixture of soluble and insoluble dietary fiber.

Adequate intake of insoluble fiber from wheat bran, whole grains, vegetables, legumes, nuts, and seeds can reduce the risk of constipation, a common complaint among older persons.

The soluble fiber found in legumes, oat bran, barley, psyllium (found in some fiber supplements), and some fruits has been found to lower blood glucose and blood cholesterol in some people.

How Much Is Needed?

The recommendation for daily fiber intake is based on energy requirements. Since the estimated energy requirement for older persons is lower than for young adults, the fiber recommendation is lower as well.

51 years and older:

Men: 30 grams/day

Women: 21 grams/day

Calcium and Vitamin D

These two nutrients work together to promote bone health. Older individuals, especially women, are at risk for osteoporosis, and adequate intake of calcium and vitamin D is one way to prevent excessive bone loss in the later years.

The recommended intakes of calcium and vitamin D increase with age, and many older adults do not get what they

Figure 4. Low-fat yogurt with fresh fruit is a tasty snack that provides protein, calcium, fiber, and several vitamins important for good health. Credits: ChristianJung/iStock/Thinkstock

need from the food they consume. Older adults may limit their intake of dairy foods for a variety of reasons, including lactose intolerance, cultural preference, or personal taste.

Other sources of calcium include green leafy vegetables (NOT spinach due to high oxalate levels), tofu processed with calcium, and a variety of calcium-fortified foods, such as breakfast cereals and orange juice. Vitamin D is also found in some fortified foods, including milk, breakfast cereals, and orange juice. Check food labels to see if these nutrients are added to the food. For those who do not get adequate amounts of these critical nutrients from their diets, supplements are available to meet their nutrient needs.

How Much Is Needed?

Calcium—daily needs

Men

51–70: 1,000 milligrams

>70: 1,200 milligrams

Women

51 years and older: 1,200 milligrams

Vitamin D—daily needs

Adults up to age 70: 15 micrograms (600 IU*)

>70 years: 20 micrograms (800 IU)

*International Units

Fast Fact: Vitamin D is one of only a few nutrients for which there is an increase in recommended intake with age.

Putting It All Together

Since we select foods, not nutrients, to eat, the USDA has provided a food guide to help us make food choices that will meet our nutrient needs. Faculty at the University of Florida (UF) adapted USDA's MyPlate food guide to meet the special nutrient needs and lifestyles of older adults. The MyPlate for Older Adults mini-poster is presented in Figure 1 and is available to be downloaded from UF's Department of Family, Youth and Community Sciences website.

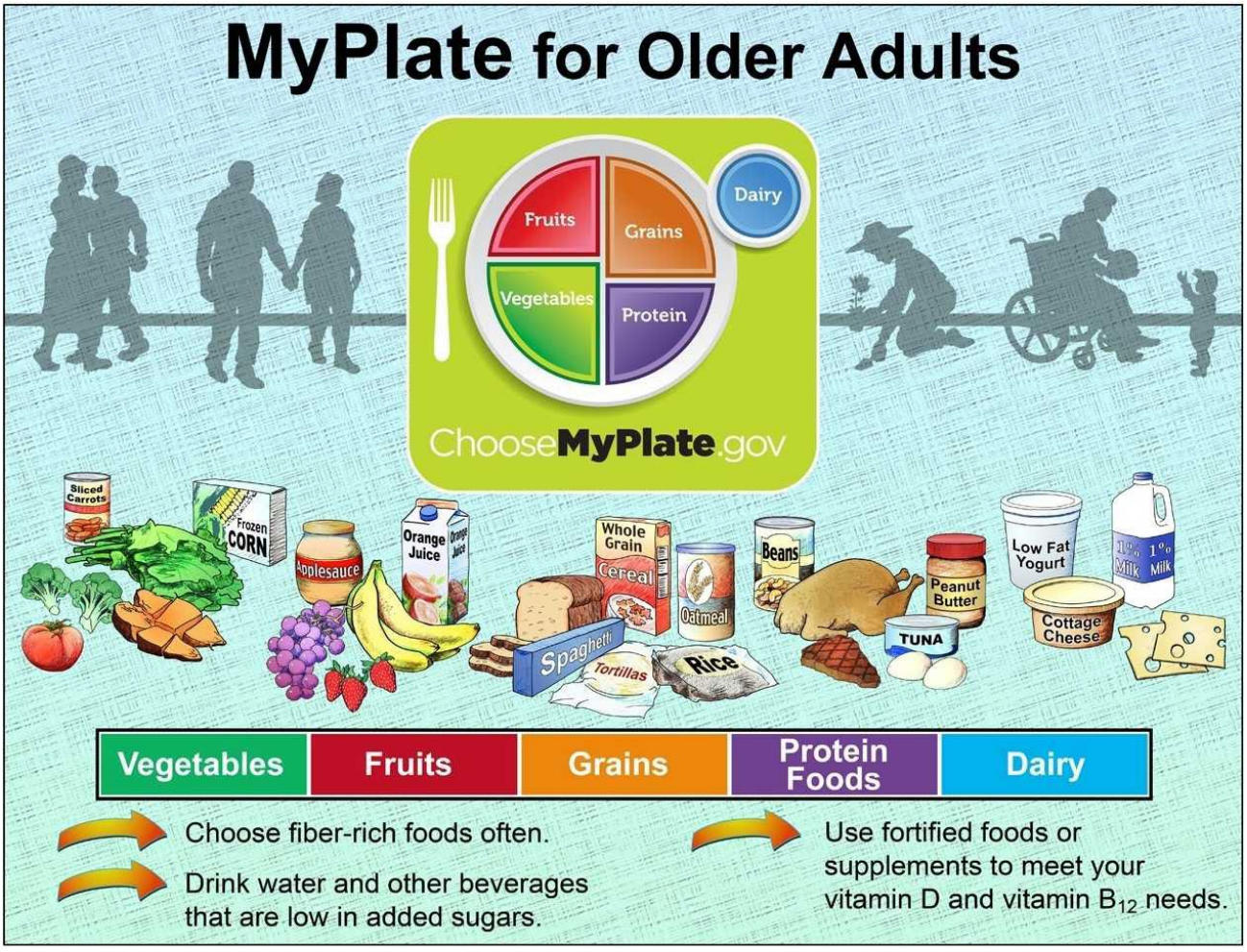

Figure 5A. MyPlate for Older Adults was developed by faculty at the University of Florida.

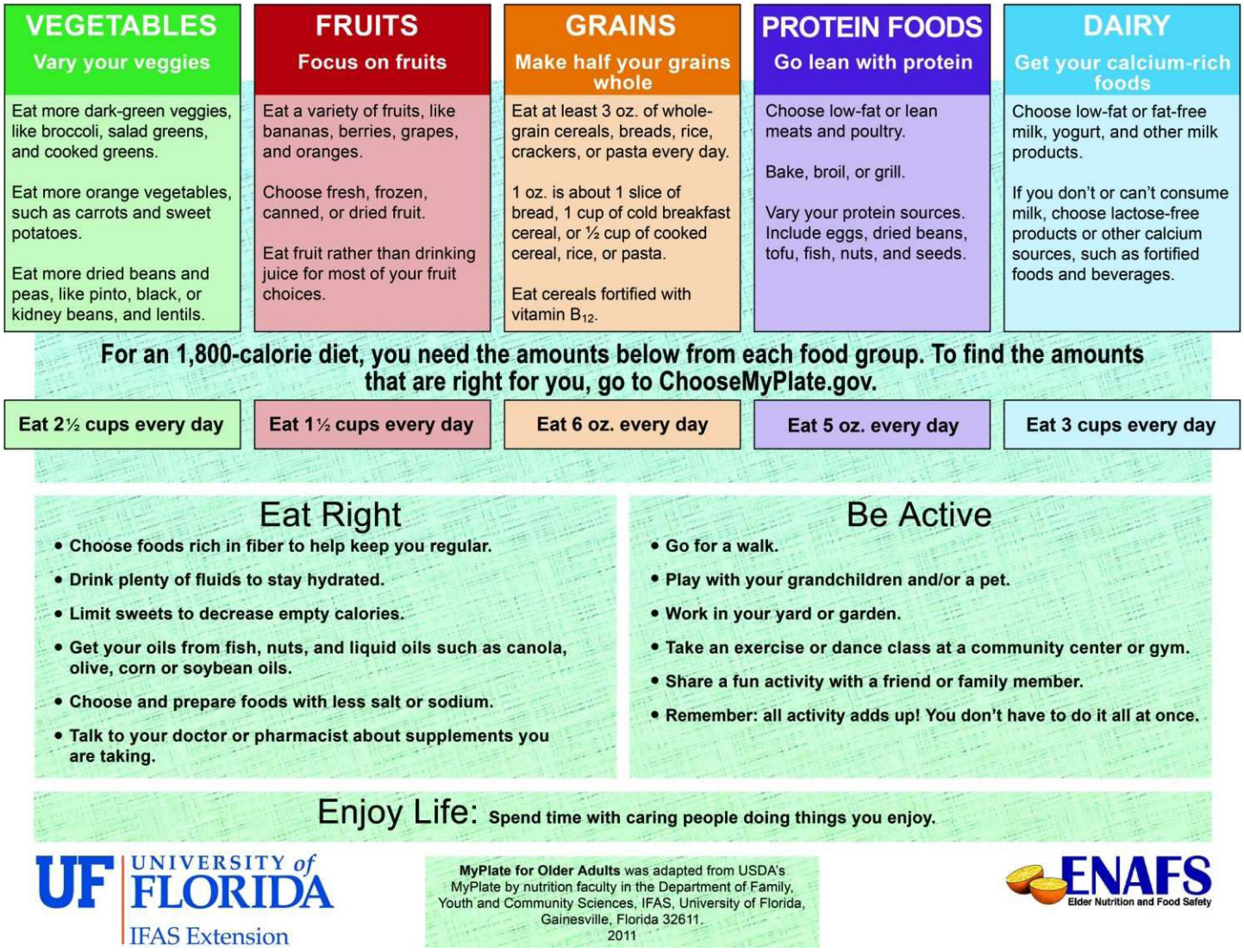

Figure 5B. It incorporates USDA's MyPlate food guide into a mini-poster designed to promote healthy lifestyle choices. (Available in English and Spanish at http://fycs.ifas.ufl.edu/extension/hnfs/enafs)

For More Information

Contact your local Extension office for additional resources and educational programs that may be offered. In Florida, you can find your local Extension office at http://solutions-foryourlife.ufl.edu/map.

Publications in This Series:

- (http://edis.ifas.ufl.edu/fy631), Martie Gillen, PhD, Carolyn Wilken, PhD, MPH, and Jenny Jump, M.S.
- (http://edis.ifas.ufl.edu/fy626), Meredeth Rowe, RN, PhD, and Martie Gillen, PhD
- (http://edis.ifas.ufl.edu/fy627), Martie Gillen, PhD, and Jo Turner, PhD, CFP
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- (http://edis.ifas.ufl.edu/fy629), Martie Gillen, PhD, and Kristen Smith, MPH
- (http://edis.ifas.ufl.edu/fy625), Martie Gillen, PhD, Terry Mills, PhD, and Jenny Jump, M.S.
- (http://edis.ifas.ufl.edu/fy630), Martie Gillen, PhD, Pat Dasler, MA, OTR/L, and Jenny Jump, M.S.
- (http://edis.ifas.ufl.edu/fy624), Martie Gillen, PhD, and Jeffrey Dwyer, PhD

References and Resources

Administration on Aging. *A Profile of Older Americans: 2010* http://www.aoa.gov/aoaroot/aging_statistics/Profile/2010/docs/2010profile.pdf

Bernstein M and Munoz N. Position of the Academy of Nutrition and Dietetics: Food and Nutrition for Older Adults: Promoting Health and Wellness. *J Acad Nutr Diet*. 2012; 112: 1255-77

Centers for Disease Control and Prevention. *Vision Health Initiative.* http://www.cdc.gov/visionhealth

Institute of Medicine. *Dietary Reference Intakes.* The National Academies Press: Washington DC, 2006.

Kamp BJ, Wellman NS, Russell C. Position of the American Dietetic Association, American Society for Nutrition, and Society for Nutrition Education: Food and Nutrition Programs for Community-Residing Older Adults. *J Am Diet Assoc.* 2010; 110: 463-72

National Library of Medicine. *Water in Diet.* MedlinePlus at: http://www.nlm.nih.gov/medlineplus/ency/article/002471.htm

U.S. Department of Commerce, U.S. Census Bureau Income and Poverty in the United States: 2013 - Current Population Reports, Table 3, Sept. 2014 http://www.census.gov/content/dam/Census/library/publications/2014/demo/p60-249.pdf