Middle Age and Nutrition

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LEARNING OBJECTIVES
1. Summarize nutritional requirements and dietary recommendations for middle-aged adults.
2. Discuss the most important nutrition-related concerns during middle age.
3. Define “preventive nutrition” and give an applied example.

During this stage of the human life cycle, adults begin to experience the first outward signs of aging. Wrinkles begin to appear, joints ache after a highly active day, and body fat accumulates. There is also a loss of muscle tone and elasticity in the connective tissue. Elaine U. Polan, RNC, MS and Daphne R. Taylor, RN, MS, Journey Across the Life Span: Human Development and Health Promotion (Philadelphia: F. A. Davis Company, 2003), 212–213. Throughout the aging process, good nutrition can help middle-aged adults maintain their health and recover from any medical problems or issues they may experience.

Middle Age (Ages Thirty-One to Fifty): Aging Well

Many people in their late thirties and in their forties notice a decline in endurance, the onset of wear-and-tear injuries (such as osteoarthritis), and changes in the digestive system. Wounds and other injuries also take longer to heal. Body composition changes due to fat deposits in the trunk. To maintain health and wellness during the middle-aged years and beyond, it is important to:
- maintain a healthy body weight
- consume nutrient-dense foods
- drink alcohol moderately or not at all
- be a nonsmoker
- engage in moderate physical activity at least 150 minutes per week

Energy

The energy requirements for ages thirty-one to fifty are 1,800 to 2,200 calories for women and 2,200 to 3,000 calories for men, depending on activity level. These estimates do not include women who are pregnant or breastfeeding (see Chapter 12 “Nutrition through the Life Cycle: From Pregnancy to the Toddler Years”). Middle-aged adults must rely on healthy food sources to meet these needs. In many parts of North America, typical dietary patterns do not match the recommended guidelines. For example, five foods—iceberg lettuce, frozen potatoes, fresh potatoes, potato chips, and canned tomatoes—account for over half of all vegetable intake. Adam Drewnowski and Nicole Darmon, “Food Choices and Diet Cost: an Economic Analysis.” The Journal of Nutrition. © 2005

**Macronutrients and Micronutrients**

The AMDRs for carbohydrates, protein, fat, fiber, and fluids remain the same from young adulthood into middle age (see Section 13.5 "Young Adulthood and Nutrition" of this chapter). It is important to avoid putting on excess pounds and limiting an intake of SoFAAS to help avoid cardiovascular disease, diabetes, and other chronic conditions. There are some differences, however, regarding micronutrients. For men, the recommendation for magnesium increases to 420 milligrams daily, while middle-aged women should increase their intake of magnesium to 320 milligrams per day. Other key vitamins needed during the middle-aged years include folate and vitamins B\textsubscript{6} and B\textsubscript{12} to prevent elevation of homocysteine, a byproduct of metabolism that can damage arterial walls and lead to atherosclerosis, a cardiovascular condition. Again, it is important to meet nutrient needs with food first, then supplementation, such as a daily multivitamin, if you can’t meet your needs through food.

**Preventive/Defensive Nutrition**

During the middle-aged years, preventive nutrition can promote wellness and help organ systems to function optimally throughout aging. Preventive nutrition is defined as dietary practices directed toward reducing disease and promoting health and well-being. Healthy eating in general—such as eating unrefined carbohydrates instead of refined carbohydrates and avoiding trans fats and saturated fats—helps to promote wellness. However, there are also some things that people can do to target specific concerns. One example is consuming foods high in antioxidants, such as strawberries, blueberries, and other colorful fruits and vegetables, to reduce the risk of cancer.


Omega-3 fatty acids can help to prevent coronary artery disease. These crucial nutrients are found in oily fish, including salmon, mackerel, tuna, herring, cod, and halibut. Other
beneficial fats that are vital for healthy functioning include monounsaturated fats, which are found in plant oils, avocados, peanuts, and pecans.

**Menopause**

In the middle-aged years, women undergo a specific change that has a major effect on their health. They begin the process of menopause, typically in their late forties or early fifties. The ovaries slowly cease to produce estrogen and progesterone, which results in the end of menstruation. Menopausal symptoms can vary, but often include hot flashes, night sweats, and mood changes. The hormonal changes that occur during menopause can lead to a number of physiological changes as well, including alterations in body composition, such as weight gain in the abdominal area. Bone loss is another common condition related to menopause due to the loss of female reproductive hormones. Bone thinning increases the risk of fractures, which can affect mobility and the ability to complete everyday tasks, such as cooking, bathing, and dressing. Academy of Nutrition and Dietetics. “Eating Right During Menopause.” © 1995–2012. Accessed March 5, 2012. [http://www.eatright.org/Public/content.aspx?id=6809](http://www.eatright.org/Public/content.aspx?id=6809).

Recommendations for women experiencing menopause or perimenopause (the stage just prior to the end of the menstruation) include:

- consuming a variety of whole grains, and other nutrient-dense foods
- maintaining a diet high in fiber, low in fat, and low in sodium
- avoiding caffeine, spicy foods, and alcohol to help prevent hot flashes
- eating foods rich in calcium, or taking physician-prescribed calcium supplements and vitamin D
- doing stretching exercises to improve balance and flexibility and reduce the risk of falls and fractures

**Old Age and Nutrition**

**LEARNING OBJECTIVES**

1. Summarize nutritional requirements and dietary recommendations for elderly adults.
2. Discuss the most important nutrition-related concerns during the senior years.
3. Discuss the influence of diet on health and wellness in old age.

Beginning at age fifty-one, requirements change once again and relate to the nutritional issues and health challenges that older people face. After age sixty, blood pressure rises and the immune system may have more difficulty battling invaders and infections. The skin becomes more wrinkled and hair has turned gray or white or fallen out, resulting in hair thinning. Older adults may gradually lose an inch or two in height. Also, short-term memory might not be as keen as it once was. Beverly McMillan, *Illustrated Atlas of the Human Body* (Sydney, Australia: Weldon Owen, 2008), 260.
In addition, many people suffer from serious health conditions, such as cardiovascular disease and cancer. Being either underweight or overweight is also a major concern for the elderly. However, many older adults remain in relatively good health and continue to be active into their golden years. Good nutrition is often the key to maintaining health later in life. In addition, the fitness and nutritional choices made earlier in life set the stage for continued health and happiness.

**Older Adulthood (Ages Fifty-One and Older): The Golden Years**

An adult’s body changes during old age in many ways, including a decline in hormone production, muscle mass, and strength. Also in the later years, the heart has to work harder because each pump is not as efficient as it used to be. Kidneys are not as effective in excreting metabolic products such as sodium, acid, and potassium, which can alter water balance and increase the risk for over- or underhydration. In addition, immune function decreases and there is lower efficiency in the absorption of vitamins and minerals.

Older adults should continue to consume nutrient-dense foods and remain physically active. However, deficiencies are more common after age sixty, primarily due to reduced intake or malabsorption. The loss of mobility among frail, homebound elderly adults also impacts their access to healthy, diverse foods.

**Energy**

Due to reductions in lean body mass and metabolic rate, older adults require less energy than younger adults. The energy requirements for people ages fifty-one and over are 1,600 to 2,200 calories for women and 2,000 to 2,800 calories for men, depending on activity level. The decrease in physical activity that is typical of older adults also influences nutritional requirements.

**Macronutrients**

The AMDRs for carbohydrates, protein, and fat remain the same from middle age into old age (see Section 13.5 "Young Adulthood and Nutrition" of this chapter for specifics). Older adults should substitute more unrefined carbohydrates for refined ones, such as whole grains and brown rice. Fiber is especially important in preventing constipation and diverticulitis, and may also reduce the risk of colon cancer. Protein should be lean, and healthy fats, such as omega-3 fatty acids, are part of any good diet.

**Micronutrients**

An increase in certain micronutrients can help maintain health during this life stage. The recommendations for calcium increase to 1,200 milligrams per day for both men and women to slow bone loss. Also to help protect bones, vitamin D recommendations increase to 10–15 micrograms per day for men and women. Vitamin B₆ recommendations rise to 1.7 milligrams per day for older men and 1.5 milligrams per day for older women to help lower levels of homocysteine and protect against cardiovascular disease. As adults age, the production of stomach acid can decrease and lead to an overgrowth of
bacteria in the small intestine. This can affect the absorption of vitamin B$_{12}$ and cause a deficiency. As a result, older adults need more B$_{12}$ than younger adults, and require an intake of 2.4 micrograms per day, which helps promote healthy brain functioning. For elderly women, higher iron levels are no longer needed postmenopause and recommendations decrease to 8 milligrams per day. People over age fifty should eat foods rich with all of these micronutrients.

**Nutritional Concerns for Older Adults**

Dietary choices can help improve health during this life stage and address some of the nutritional concerns that many older adults face. In addition, there are specific concerns related to nutrition that affect adults in their later years. They include medical problems, such as disability and disease, which can impact diet and activity level. For example, dental problems can lead to difficulties with chewing and swallowing, which in turn can make it hard to maintain a healthy diet. The use of dentures or the preparation of pureed or chopped foods can help solve this problem. There also is a decreased thirst response in the elderly, and the kidneys have a decreased ability to concentrate urine, both of which can lead to dehydration.

**Sensory Issues**

At about age sixty, taste buds begin to decrease in size and number. As a result, the taste thresholds higher in older adults, meaning that more of the same flavor must be present to detect the taste. Many elderly people lose the ability to distinguish between salty, sour, sweet, and bitter flavors. This can make food seem less appealing and decrease the appetite. An intake of foods high in sugar and sodium can increase due to an inability to discern those tastes. The sense of smell also decreases, which impacts attitudes toward food. Sensory issues may also affect the digestion because the taste and smell of food stimulates the secretion of digestive enzymes in the mouth, stomach, and pancreas.

**Gastrointestinal Problems**

A number of gastrointestinal issues can affect food intake and digestion among the elderly. Saliva production decreases with age, which affects chewing, swallowing, and taste. Digestive secretions decline later in life as well, which can lead to atrophic gastritis (inflammation of the lining of the stomach). This interferes with the absorption of some vitamins and minerals. Reduction of the digestive enzyme lactase results in a decreased tolerance for dairy products. Slower gastrointestinal motility can result in more constipation, gas, and bloating, and can also be tied to low fluid intake, decreased physical activity, and a diet low in fiber, fruits, and vegetables.

**Dysphagia**

Some older adults have difficulty getting adequate nutrition because of the disorder dysphagia, which impairs the ability to swallow. Any damage to the parts of the brain that control swallowing can result in dysphagia, therefore stroke is a common cause. Dysphagia is also associated with advanced dementia because of overall brain function.
impairment. To assist older adults suffering from dysphagia, it can be helpful to alter food consistency. For example, solid foods can be pureed, ground, or chopped to allow more successful and safe swallow. This decreases the risk of aspiration, which occurs when food flows into the respiratory tract and can result in pneumonia. Typically, speech therapists, physicians, and dietitians work together to determine the appropriate diet for dysphagia patients.

**Obesity in Old Age**

Similar to other life stages, obesity is a concern for the elderly. Adults over age sixty are more likely to be obese than young or middle-aged adults. As explained throughout this chapter, excess body weight has severe consequences. Being overweight or obese increases the risk for potentially fatal conditions that can afflict the elderly. They include cardiovascular disease, which is the leading cause of death in the United States, and Type 2 diabetes, which causes about seventy thousand deaths in the United States annually.

Centers for Disease Control, National Center for Health Statistics. “Deaths and Mortality.” Last updated January 27, 2012. [http://www.cdc.gov/nchs/fastats/deaths.htm](http://www.cdc.gov/nchs/fastats/deaths.htm). Obesity is also a contributing factor for a number of other conditions, including arthritis.

For older adults who are overweight or obese, dietary changes to promote weight loss should be combined with an exercise program to protect muscle mass. This is because dieting reduces muscle as well as fat, which can exacerbate the loss of muscle mass due to aging. Although weight loss among the elderly can be beneficial, it is best to be cautious and consult with a health-care professional before beginning a weight-loss program.

**The Anorexia of Aging**

In addition to concerns about obesity among senior citizens, being underweight can be a major problem. A condition known as the anorexia of aging is characterized by poor food intake, which results in dangerous weight loss. This major health problem among the elderly leads to a higher risk for immune deficiency, frequent falls, muscle loss, and cognitive deficits. Reduced muscle mass and physical activity mean that older adults need fewer calories per day to maintain a normal weight. It is important for health care providers to examine the causes for anorexia of aging among their patients, which can vary from one individual to another. Understanding why some elderly people eat less as they age can help health-care professionals assess the risk factors associated with this condition. Decreased intake may be due to disability or the lack of a motivation to eat. Also, many older adults skip at least one meal each day. As a result, some elderly people are unable to meet even reduced energy needs.

Nutritional interventions should focus primarily on a healthy diet. Remedies can include increasing the frequency of meals and adding healthy, high-calorie foods (such as nuts, potatoes, whole-grain pasta, and avocados) to the diet. Liquid supplements between meals may help to improve caloric intake.

consider a patient’s habits and preferences when developing a nutritional treatment plan. After a plan is in place, patients should be weighed on a weekly basis until they show improvement.

Vision Problems

Many older people suffer from vision problems and a loss of vision. Age-related macular degeneration is the leading cause of blindness in Americans over age sixty. American Medical Association, *Complete Guide to Prevention and Wellness* (Hoboken, NJ: John Wiley & Sons, Inc., 2008), 413. This disorder can make food planning and preparation extremely difficult and people who suffer from it often must depend on caregivers for their meals. Self-feeding also may be difficult if an elderly person cannot see his or her food clearly. Friends and family members can help older adults with shopping and cooking. Food-assistance programs for older adults (such as Meals on Wheels) can also be helpful.

Diet may help to prevent macular degeneration. Consuming colorful fruits and vegetables increases the intake of lutein and zeaxanthin. Several studies have shown that these antioxidants provide protection for the eyes. Lutein and zeaxanthin are found in green, leafy vegetables such as spinach, kale, and collard greens, and also corn, peaches, squash, broccoli, Brussels sprouts, orange juice, and honeydew melon. American Medical Association, *Complete Guide to Prevention and Wellness* (Hoboken, NJ: John Wiley & Sons, Inc., 2008), 415.

Neurological Conditions

Elderly adults who suffer from dementia may experience memory loss, agitation, and delusions. One in eight people over the age sixty-four and almost half of all people over eighty-five suffer from Alzheimer’s, which is the most common form of dementia. These conditions can have serious effects on diet and nutrition as a person increasingly becomes incapable of caring for himself or herself, which includes the ability to buy and prepare food, and to self-feed.

Longevity and Nutrition

The foods you consume in your younger years influence your health as you age. Good nutrition and regular physical activity can help you live longer and healthier. Conversely, poor nutrition and a lack of exercise can shorten your life and lead to medical problems. The right foods provide numerous benefits at every stage of life. They help an infant grow, an adolescent develop mentally and physically, a young adult achieve his or her physical peak, and an older adult cope with aging. Nutritious foods form the foundation of a healthy life at every age.