

# Nutritional Guidelines in Canada and the US: Differences between Younger and Older Adults

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*The requirement for some nutrients changes as adults age. The Dietary Reference Intakes, the 2007 Canada Food Guide, and the 2005 Dietary Guidelines for Americans (MyPyramid.gov) provide guidance for the consumer and the professional for nutritional needs throughout the life span. The Guidelines provide recommendations in user-friendly messages. MyPyramid.gov and the Food Guide allow the public to access information on the internet that is individualized for age, gender, and physical activity. The Dietary Reference Intakes provide the health professional with nutrition requirements for gender and specific age groupings through the entire lifespan. This article will address those nutrients whose requirements significantly change with adult aging.*

**Key words:** Dietary Reference Intakes, Canada Food Guide, Dietary Guidelines of America, MyPyramid, aging, nutrition

## Introduction

In 2004, the Food and Nutrition Board of the National Academies' Institute of Medicine (IOM) completed the Dietary Reference Intakes (DRIs) for individuals throughout the life stages from birth to >70 years of age in both the United States and Canada.<sup>1-6</sup> The IOM has given their DRI recommendations in four ways. The Estimated Average Requirement (EAR) represents the estimated median requirement for healthy individuals in a specific life stage and gender group. Recommended Dietary Allowances (RDA) which are two standard deviations above the EAR are provided when the needs of almost all (97-98%) individuals in a group is believed to be met. Adequate Intake (AI) covers the needs of all individuals in the group but data are lacking to specify with confidence the percentage of individuals covered by this

intake because an EAR could not be determined. Tolerable Upper Limit (UL) is the maximum level of a daily nutrient intake that is likely to pose no risk of adverse effects. Specific numbers are given for the quantities of macro- and micronutrients that should be an average of daily intakes over the long-term.<sup>1-6</sup>

To describe the amounts and types of foods that would meet the DRIs, Health Canada released the Food Guide (FG) in 2007,<sup>7</sup> which provides guidance in food choices, physical activity, label reading, portion sizes, and eating patterns for 16 different age and gender categories and is available in hard copy and interactively on the web at [www.healthcanada.gc.ca/foodguide](http://www.healthcanada.gc.ca/foodguide). The FG also provides ten statements that are the basis for modeling the food intake pattern (Table 1).

In 2005, the Dietary Guidelines for Americans (DGA) were released by the

United States Department of Health and Human Services (HHS) and the Department of Agriculture (USDA) to the general public of America two years of age and older.<sup>8</sup> The Guidelines are the recommendations of the Dietary Guidelines Advisory Committee who used scientific evidence and expert testimony to arrive at nine key messages (Table 2). MyPyramid.gov provides the details for following the American recommendations (Figure 1). By inputting age, gender, and level of physical activity, each individual is provided the amounts of food to eat from each of the food groups. The website also has a meal tracking worksheet and allows people to assess their daily diet and physical activity.

This article will discuss the recommendations of the IOM within the context of the Canada Food Guide and the DGA as well as highlight those nutrients that have significant differing recommendations with aging.

## Energy Needs

As adults age, caloric requirement decreases. The DRI for daily energy intake is based on gender specific equations using body mass index (BMI), physical activity, basal energy expenditure, and age to arrive at an estimated energy requirement (EER). For each year above 30, resting energy needs of women and men decrease by 7 and 10 kcal/day, respectively.<sup>5</sup> Individuals who are younger than 30 years can add the same number of calories per day. Thus, a sedentary female with a BMI of 24.99 who requires 1,982 kcal at age 30 would need 1,842 calories by the age of 50.

## Calorie Intake

Obesity has become a global concern to the extent that the term globesity has been coined. Obesity and overweight are prevalent among all adults regardless of age. Due to multiple factors, adults may find themselves either overweight (BMI 25-29.9) or obese (BMI  $\geq 30$ ).<sup>9</sup> Controlling calorie intake is one part of the equation to prevent further weight gain or to lose some of the excess weight. If other health risk factors are present, controlling

weight becomes even more important. Studies have shown that weight losses of 5–10% are enough to improve the risk factors.<sup>9</sup>

## Physical Activity

The recommendation for moderate physical activity is a minimum of 30 minutes per day to promote fitness and reduce the risk of chronic diseases. Moderate activity is defined as walking at a pace of five to six kilometres per hour (three to four miles per hour). Many adults need between 30 and 60 minutes of moderate physical daily activity to prevent an undesirable weight gain. Canada's Physical Activity Guide recommends that older adults include a variety of activities that provide endurance (four to seven days per week), flexibility (daily), and strength and balance (two to four days per week).<sup>10</sup>

## Fats

The goal is for all adults to keep saturated and trans fat at <10 and <1 percent of calories, respectively, and dietary cholesterol at <300 mg daily. To meet these goals, the DGA and FG recommend limiting animal fats, partially hydrogenated vegetable oils, eggs, and organ meats. Studies are showing the benefit of eating 225 grams (eight ounces) of fish weekly as the n-3 fatty acids, eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) present in fatty fish may have a cardio protective benefit.<sup>11</sup> Thus, the DGA recommends this quantity of fish while the FG recommends at least 140 grams (five ounces) weekly. The FG limits fat intake to 30–45 mL (2–3 tablespoons/day) of unsaturated fat while the total amount of fat recommended by the DGA is between 20–35% of calories for everyone. The preferred fats are liquid vegetable oils, trans-free margarine, and nuts. Using lean meats, skinless poultry, fish, and fat-free or low-fat dairy products will reduce saturated fat intake. The FG encourages adding meat alternatives often. The trans-fat intake can be most efficiently lowered by reducing the intake of baked goods prepared with partially hydrogenated fats.

**Table 1:** Canada Food Guide Meal Planning Check List

Eat at least one dark green and one orange vegetable each day
Choose vegetables and fruit prepared with little or no added fat, sugar, or salt
Have vegetables and fruit more often than juice
Make at least half of your grain products whole grain each day
Choose grain products that are lower in fat, sugar or salt
Drink skim, 1% or 2% milk or fortified soy milk each day
Select lower fat milk alternatives
Have meat alternative such as beans, lentils, and tofu often
Eat at least two Food Guide Servings of fish each week
Select lean meat and alternatives prepared with little or no added fat or salt

Source: Health Canada, 2007.<sup>13</sup>

## Carbohydrates

The RDA for carbohydrate is 130 grams throughout the adult life cycle. An upper limit (UL) has not been set for this macronutrient but the suggested limit for added sugars is 25% or less of total calories. This level was determined after reviewing evidence of American subpopulations that had decreased intakes of some micronutrients when their intakes exceeded this level. The Adequate Intake

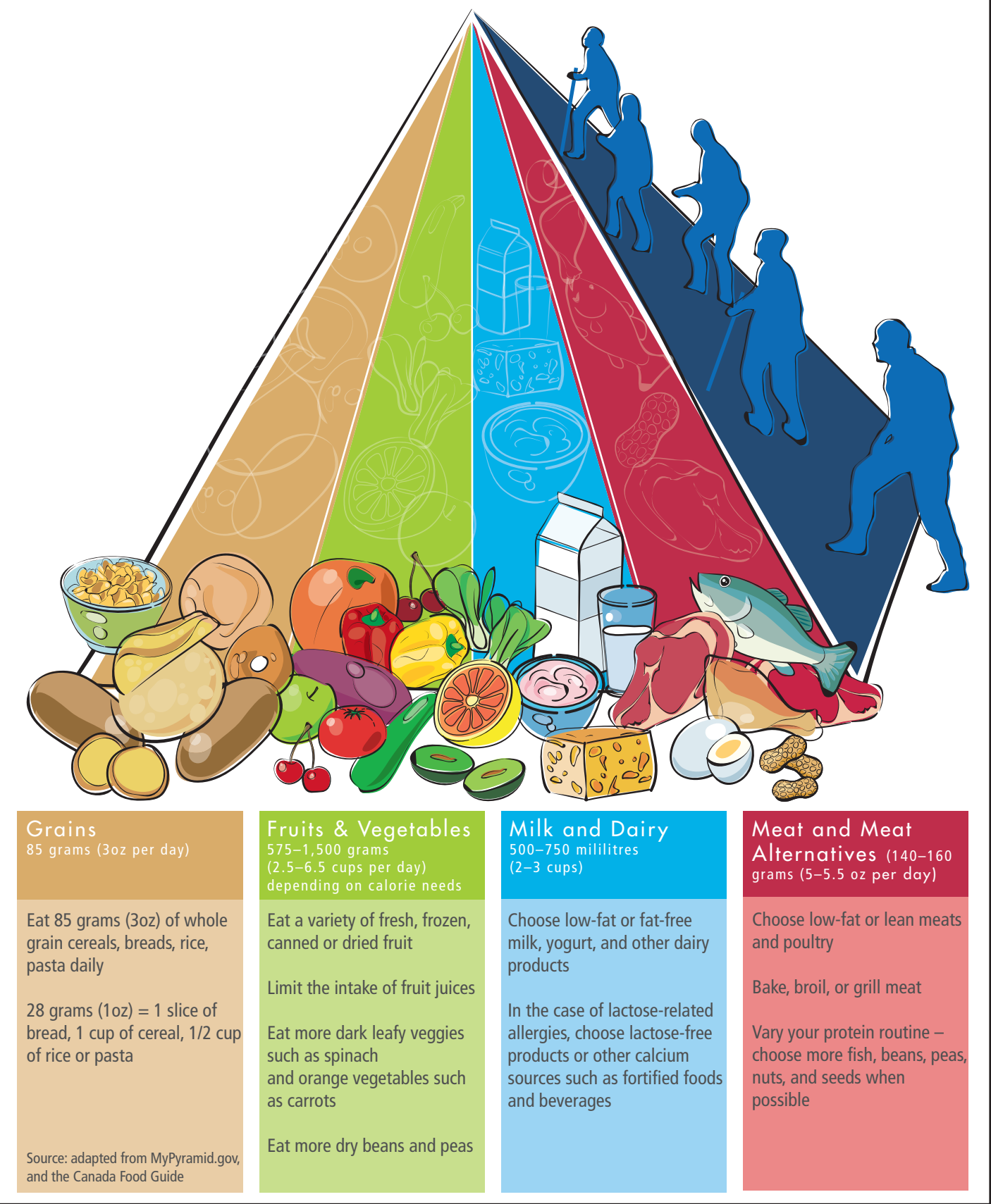
(AI) for fibre has been set at 14 g/1000 kcal of median energy intake. Since calorie requirement decreases with age, the AI for fibre for women and men over 50 years is 21 and 30 grams, respectively, while for those between 19 and 50 years it is 25 and 38 grams, respectively.<sup>5</sup> The major food sources of fibre are the whole grains, whole fruits and vegetables, and dried peas and beans.

**Table 2:** Dietary Guidelines for Americans 2005 Key Recommendations for the General Population

Consume a variety of foods within and among the basic food groups while staying with energy needs
Control calorie intake to manage body weight
Be physically active every day
Increase daily intake of fruits and vegetables, whole grains, and non-fat or low-fat milk and milk products
Choose fats wisely for good health
Choose carbohydrates wisely for good health
Choose and prepare foods with little salt
If you drink alcoholic beverages, do so in moderation
Keep food safe

Source: Adapted from Dietary Guidelines Committee Report, 2005.<sup>8</sup>

Figure1:  
Nutritional Guidelines in Canada and the US:  
Food Intake Recommendations for Older Adults



## Fruits and Vegetables, Whole Grains, and Non-fat or Low-fat Milk and Milk Products

These foods are excellent sources of many nutrients as well as being associated with a decreased risk of several chronic diseases, some cancers, and type II diabetes, and aid in the loss and maintenance of body weight. The amount of fruits and vegetables recommended ranges from 575–1,500 grams (2.5 to 6.5 cups) per day depending on calorie needs. Eighty-five grams (3 ounces) of whole grains are recommended per day and 500 to 750 millilitres (2 to 3 cups) milk or yogurt or an equivalent calcium source is recommended daily.<sup>8,13</sup> The FG more prominently advises its citizens to include one dark green and one orange vegetable daily and to have vegetables and fruit more often than juice.

### Calcium

The AI for calcium increases from 1,000 mg during the ages of 19–50 to 1,200 mg after age 50 for both genders.<sup>1</sup> One 250 mL (eight ounce) serving of milk or yogurt provides 300 mg of calcium. Two to three servings of dairy products together with the calcium present in the remaining foods eaten throughout the day will provide these amounts for younger and older adults. For individuals who have difficulty ingesting dairy products because of an allergy, intolerance, or dislike, there are other options. Many foods are now fortified with calcium. To determine the number of milligrams of calcium in a food add a zero to the percentage of calcium on the Nutrition Facts of the food label. That is, if the Nutrition Facts states that one serving provides 20% of the Daily Value (DV), it would provide 200 mg of calcium. Another option for meeting the requirement is to take calcium supplements.

### Vitamin D

The AI for vitamin D increases from 5 µg (200 IU) at age 19, to 10 µg at 51 years, and to 15 µg at 71 years.<sup>1</sup> The increase is due to the increasing likelihood of inadequate exposure to sunlight, the major

### Key Points

Energy requirements decrease as individuals age.

Individuals age 50 and older need an additional 200 mg of calcium each day beyond the 1,000 mg required for younger adults.

The recommendation for vitamin D increases at age 50 and again at age 70.

After age 50, vitamin B<sub>12</sub> should be obtained from fortified foods or a supplement.

Women require less iron after menopause.

source of vitamin D, and more importantly to the decreasing ability of the skin to convert sunlight to vitamin D. Since the only major food sources of vitamin D are fatty fish, milk (2.5 µg/8 oz) and some fortified cereals and juices, supplementation with vitamin D may become necessary. Individuals who live in southern latitudes and have an exposure to sunlight (without sunscreen with an SPF of 8 or greater) for 10–15 minutes twice a week to their skin may be exempt from the need for supplementation.<sup>12</sup> The Canada Food Guide recommends that everyone over the age of 50 take 400 IU (10 mcg) of vitamin D daily in addition to drinking 750 mL (3 cups) of milk.

### Folate

Folate requirements do not differ between younger and older adults, but the IOM recommends that women of childbearing age take a 400 µg supplement of folic acid daily to decrease the risk of neural tube defects in the fetus should pregnancy occur.<sup>2</sup>

### Vitamin B<sub>12</sub>

After the age of 50, individuals may malabsorb food-bound vitamin B<sub>12</sub>. Although the RDA (2.4 µg) for this nutrient does not change,<sup>2</sup> it is recommended that this group of adults include foods which have been fortified with vitamin B<sub>12</sub> or take a supplement.

### Iron

The need for iron decreases from 18 mg for women during the childbearing years to 8 mg at menopause, the same amount as recommended for men.<sup>4</sup> Postmenopausal woman should be advised

to use a dietary supplement that does not contain this mineral.

### Sodium

The IOM has recommended a daily sodium intake of 1,500 mg for 19–50 year olds.<sup>6</sup> Since many older adults have hypertension or are likely to be given that diagnosis, it is further believed that they will benefit from an even lower intake. Thus the IOM has published an AI of 1,300 mg for adults 50–70 years and 1,200 mg for those individuals over 70 years. Most sodium intake does not occur from salting food at the table but rather from processed foods and foods eaten at restaurants.

### Conclusion

The nutrients whose requirements change significantly with aging are calories, calcium, vitamin D, and iron. While the requirement for vitamin B<sub>12</sub> does not change, it is important that it is acquired from fortified foods or a dietary supplement. The FG and the DGA together with MyPyramid give the public both general and specific information for meeting the DRIs throughout the lifespan.



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