

## **NUTRITION: THE FACTS ABOUT FOOD**

By [Nicholas DeGregorio, M.D., F.A.C.P.](#)

### ***Introduction:***

What is more on our minds every day than food? It's no wonder that we are served a constant barrage of information on nutrition by the media. It fills magazines and bookshelves, is a regular topic on television news, and dominates our conversations over coffee. So let's examine the data and try to separate the fat from the fiber.

### ***General Dietary Recommendations; Follow the Food Guide Pyramid:***

The [U.S. Department of Agriculture](#) (USDA) issued a daily [food guide pyramid](#) for general, healthy individuals that includes:

- **6-11 servings per day of bread, cereal, rice and pasta**
- **3-5 servings per day of vegetables**
- **2-4 servings per day of fruits**
- **2-3 servings per day of milk, yogurt, or cheese**
- **2-3 servings per day of meat, poultry, fish, dry beans, eggs, or nuts**
- **Fats, oils and sweets used sparingly**

### ***Mediterranean Diet:***

By comparison, the Mediterranean Diet Pyramid includes more fish, less poultry and eggs (a few times per week), and less red meat (a few times per month). Although higher in fat content than the USDA guideline, this diet appears to be more protective against coronary artery disease. This is probably because the main fat source in the Mediterranean Diet is olive oil, a monosaturated fat that reduces serum cholesterol levels.

The Mediterranean plan also includes regular physical activity and moderate amounts of wine. Many nutrition experts believe that red wine or other alcoholic beverages lower the risk of heart disease. 1-2 servings per day is all it takes, however, and more may be harmful (1 serving = 4 oz. wine = 12 oz. beer = 1 1/2 oz. liquor; red wine may have an advantage over other types of alcohol because it contains antioxidant chemicals that protect the arteries). More than 2 drinks per day have been correlated with a higher rate of all-cause mortality (including cirrhosis of the liver and automobile accidents). Some nutrition experts believe the evidence is not yet sufficient, and that even 1-2 drinks per day may have negative effects on blood pressure and the liver.

### ***Dietary Recommendations for Individuals with Elevated Serum Cholesterol Levels:***

The dietary treatment of individuals with elevated serum cholesterol levels as recommended by the [American Heart Association](#) is as follows:

[American Heart Association dietary recommendations:](#)

**Step I.** - Reduce overall fat intake to less than 30% and saturated fat intake to less than 10% of your total daily calories

**Step II** - Further reduce saturated fat intake to less than 7% of your total daily fat consumption

Consider replacing butter and margarine with the newer margarine substitutes containing plant stanol esters ([Beneco](#); Take Control). These latter products not only have an excellent taste, but also have actually been shown to help promote healthy cholesterol levels.

### ***The Benefits of Antioxidants:***

What about [antioxidants](#)? What are they, what do they do, and where can you find them? Intuitively, you would think that anything that prevents rust must be good for you, but let's look at the data. The human race evolved on a diet that was largely plant-based and contained many phytochemicals (from the Greek *phyton* = plant) and antioxidants (vitamins E,C and Beta-carotene and the mineral, selenium). These agents are micronutrients found in plant-based foods that help to protect our cells from damaging agents that are called free radicals. They reduce the formation, absorption and cell penetration of cancer causing agents. They also enhance the formation of enzymes that detoxify carcinogens. In essence, antioxidants are the good guys, the sentinels that serve and protect our DNA from the free-radical forces of biological aging and mutation.

### ***The Value of a Diet High in Fiber:***

What's the scoop on [fiber](#)? Fiber is necessary for regular bowel function. There are two basic types of fiber: soluble and insoluble. Soluble fiber has modest lipid-lowering potential. Sources of soluble fiber include: apples, barley, beans, carrots, citrus fruits, corn, peas, psyllium hydrophilic mucilloid (metamucil, citrucil, fiberall), rice bran and rolled oats. Insoluble fiber, such as that provided by wheat bran, mainly prevents constipation.

### ***The Importance of Folic Acid:***

#### ***In Women of Childbearing Years:***

Women of childbearing years must remember to take [folic acid](#). Ingesting .4mg of folic acid daily, before conception and during early pregnancy, reduced the risk of spina bifida and anencephaly by at least 50%!

#### ***In Maintaining Health Blood Vessels:***

By lowering blood levels of an atherogenic agent called [homocysteine](#), folic acid may also help to prevent artery disease of the heart and blood vessels in adults.

### ***Maintaining Healthy Bones:***

[Calcium](#), [Vitamin D](#) and [exercise](#) are the key components necessary to build, maintain and repair bones at all ages. Think of calcium as the building blocks, Vitamin D as the mortar and exercise as the bricklayer in building your bony infrastructure. It requires all three to get the job done. Unlike a brick wall, however, bone is living tissue that is in a state of continuous [remodeling](#). Within bone there exists a dynamic balance between cells that reabsorb bony tissue (osteoclasts) and cells that produce new bone (osteoblasts).

The amount of calcium and vitamin D required each day depends on the age and physiologic status of an individual. For example, pregnant or nursing women should consume 1200-1500mg of elemental calcium daily. Postmenopausal women should take 1500mg of calcium daily if not on hormone replacement therapy, and 1000mg daily if on estrogen therapy. It is equally important to take vitamin D daily to increase the intestinal absorption of calcium and to enhance its uptake into bone.

**Osteoporosis is not uncommon in young women** (in their 20s and 30s) who have significant risk factors or predisposing conditions such as eating disorders. **Men are also at risk for osteoporosis.** Consider that 20% of osteoporosis cases develop in men and that more men develop osteoporosis than prostate disease. See **Table I** for more information on how much daily calcium and vitamin D you should take and **Table II** to review some of the available calcium preparations and how they should be taken. Although walking is an excellent exercise, strengthening programs may be more effective in stimulating new bone formation, improving balance and reducing fractures.

### ***Summary Advice:***

- Follow a high fiber, low cholesterol and low saturated fat diet and replace saturated fats with unsaturated canola oil and mono-saturated olive oil.
- Maintain a high intake of foods that are rich in antioxidants.
- If you don't drink alcohol, you don't need to start.
- If you do drink alcohol, limit yourself to 1-2 drinks daily (preferable red wine) and do not drink and drive.
- If you are a woman of childbearing years, take .4mg of folic acid daily.
- Take the recommended amounts of calcium and vitamin D, according to your age and health status (see Tables I & II below)

- Exercise 3-4 times per week according to a program designed by you and your doctor. Consider 20-30 minutes of aerobic activity for your heart combined with weight-bearing, strengthening exercise for your bones.

**TABLE I - CALCIUM AND VITAMIN D REQUIREMENTS BY AGE GROUP**

Age Group	Daily Calcium Requirements	Daily Vitamin D Requirements
Birth – 5 months	400 mg	300 IU
5 months – 1 year	600 mg	400 IU
1 – 10 years	800 mg	400 IU
11 – 24 years	1200 mg	400 IU
Adults 25 – 65 years	1200 mg	400 IU
Pregnant and lactating women	1200 mg – 1500 mg	800 IU
Post menopausal women not on hormone replacement therapy (HRT)	1500 mg	800 IU
Postmenopausal women on HRT	1000 mg	400 IU
All people over 65 years of age	1500 mg	800 IU

**TABLE II - SOURCES OF CALCIUM SUPPLEMENTATION**

**(Calcium supplements should be taken in divided doses, with no more than 500-600 mg administered per dose.)**

Calcium Supplement (Brand Name)	Weight In mg	Weight in mg of elemental calcium	Tablets required to supply 1000 mg of elemental calcium
<b>Calcium carbonate<sup>1</sup></b>			
Generic 500	500 mg	200 mg	5 tablets
Generic 600	600 mg	240 mg	5 tablets
Os-Cal 500	1250 mg	500 mg	2 tablets
Caltrate 600	1500 mg	600 mg	2 tablets
<b>Tums:</b>			
Regular	500 mg	200 mg	5 tablets
E-X	750 mg	300 mg	4 tablets
500	1250 mg	500 mg	2 tablets
<b>Titralac:</b>			
Regular	420 mg	168 mg	6 tablets
X-strength	750 mg	300 mg	4 tablets
<b>Calcium citrate<sup>2</sup></b>			
Citracal 950)	950 mg	200 mg	5 tablets
Citracal Liquitab	2376 mg	500 mg	2 tablets
<b>Calcium PO4</b>			
Posture	1565.2 mg	600 mg	2 tablets

**1 Calcium Carbonate should be taken with food to ensure adequate absorption. Absorption may be impaired in the elderly who may have diminished production of acid in the stomach, or in patients on acid lowering medications.**

**2 Take Calcium Citrate between meals if you take meds that reduce gastric acid.**