

# DAIRY'S ROLE IN THE FOOD GUIDE PYRAMID

The U.S. Department of Agriculture's (USDA) Food Guide Pyramid, introduced in 1992, currently is under review in anticipation of an update by early 2005. The National Dairy Council® actively supports USDA's efforts to update the Food Guide Pyramid so that it continues to reflect the latest nutrition science and provides guidance based on nutrients that naturally occur in foods.

## Dairy's Unique Nutrient Package

- Dairy foods are the best – and most abundant – natural source of dietary calcium available to Americans. In fact, dairy foods provide nearly 73 percent of the calcium in our nation's food supply.  
Gerrior S, et al. Nutrient Content of the U.S. Food Supply, 1909-99. Home Economics Research Report No. 55, Washington, DC: U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. March, 2002.
- In addition to calcium and protein, milk, cheese and yogurt naturally provide other essential nutrients including phosphorus, potassium, riboflavin, vitamin A, vitamin B12, magnesium, and zinc. Milk, cheese and yogurt provide a unique combination of nutrients that, studies show, improves the overall nutritional quality of the diet and offers many health benefits including improving bone health, reducing high blood pressure and managing weight.

## Three to Four Servings of Dairy

The Dietary Reference Intake (DRI) values for Adequate Intake (AI) of calcium were increased in 1997 – after the release of the current (1992) Food Guide Pyramid.

- A recent assessment by USDA scientists indicates that at least three servings of dairy a day are needed for the majority of the population to meet current calcium recommendations.  
Shaw AM, et al. Reassessing the food guide pyramid: decision-making framework. *Journal of Nutrition Education*. 2000; 32:111-118.
- A research review of over 90 studies suggests that increasing dairy intake to 3 – 4 servings each day as part of a lower calorie diet rich in nutrients could lead to a significant reduction in chronic disease risk, including obesity, diabetes and stroke, and treatment costs of more than \$200 billion over five years.  
McCarron DA, Heaney RP. Estimated healthcare savings associated with adequate dairy food intake. *American Journal of Hypertension*. 2004; 17(1):88-97.
- A new survey shows 100 percent of family physicians, dietitians and pediatricians recommend 3-4 servings of dairy a day for ages 1-18, and 100 percent of family physicians and dietitians recommend 3-4 for ages 19 and up.  
GFK Custom Research Inc. Health Professionals Dairy Nutrition Tracking Study, 2003 Benchmark. September 2003.

## The Health Benefits of Dairy

Dairy's role in bone health has long been established. More recent research indicates that dairy foods also play a role in lowering blood pressure and reducing the risk of obesity.

### *Bone Health:*

- Several studies have shown that calcium, vitamin D and phosphorus, all found in dairy foods, are an important nutrient combination in promoting bone health.  
Dawson-Hughes B, et al. Effect of calcium and vitamin D supplementation on bone density in men and women 65 years of age or older. *New England Journal of Medicine*. 1997; 337: 670.  
Dawson-Hughes B, et al. Rates of bone loss in postmenopausal women randomly assigned to one or two dosages of vitamin D. *American Journal of Clinical Nutrition*. 1995; 61:1140.

Heaney RP et al. Calcium effects on phosphorus absorption: implications for the prevention and co-therapy of osteoporosis. *Journal of the American College of Nutrition*. 2002; 21: 239-244.

- A research review of 138 studies exploring the relationship between calcium, dairy foods and bone health, including numerous studies that used dairy products as the calcium source, found overwhelming evidence that high calcium or dairy food intake throughout life is one of the most important factors for reducing the risk of osteoporotic fracture.  
Heaney RP. Calcium, dairy products and osteoporosis. *Journal of the American College of Nutrition*. 2000; 19: 83S-99S.
- The American Academy of Pediatrics recommends 3-4 servings a day of milk, cheese, yogurt, and other calcium-rich foods for children's daily diets to help prevent future risk of osteoporosis, as well as decrease the risk of childhood and adolescent fractures.  
Calcium for You Facts for Teens, 2001.

### *Hypertension:*

- According to the American Heart Association, one in four U.S. adults suffers from high blood pressure. Adopting the dairy-rich DASH (Dietary Approaches to Stop Hypertension) eating plan recommended by the National Heart, Lung and Blood Institute, which is lower in fat and includes 2-3 servings of dairy and 8-10 servings of fruits and vegetables, is clinically proven to reduce high blood pressure.  
Appel LJ, et al. for the DASH Collaborative Research Group: A clinical trial of the effects of dietary patterns on blood pressure. *New England Journal of Medicine*. 1997; 336:1117-24.  
Sacks FM, et al. for the DASH-Sodium Collaborative Research Group. A clinical trial of the effects on blood pressure of reduced dietary sodium and the DASH dietary pattern (the DASH-Sodium Trial). *New England Journal of Medicine*. 2001; 334:3-10.  
Joint National Committee on Prevention Detection, Evaluation, and Treatment of High Blood Pressure. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Journal of the American Medical Association*. 2003;289:2363-2369.

### *Weight Management:*

- A recent research review concluded that dietary calcium may play an important role in the regulation of energy metabolism and may result in a reduction of body fat and an acceleration of weight and fat loss compared to diets low in calcium. This review also concluded that dairy foods demonstrate significantly greater effects than supplemental calcium.  
Zemel MB. Role of dietary calcium and dairy products in modulating adiposity. *Lipids*. 2003; 38(2):139-146.
- Studies show that dairy foods can improve the overall nutritional quality of the diet without significantly increasing total calorie or fat intake, body weight or percent body fat.  
Zemel MB. Role of dietary calcium and dairy products in modulating adiposity. *Lipids*. 2003; 38(2):139-146.

## **Serving Size Matters**

USDA serving recommendations for dairy foods are based on serving sizes that deliver 300 mg of calcium per serving, whereas serving sizes on food labels are based on FDA's standardized Reference Amounts Customarily Consumed guidelines that are frequently much smaller than those referenced in the Food Guide Pyramid (FGP). For example:

**Milk:** one FGP serving is 8 ounces (1 cup) ...and... one label serving is 8 ounces (1 cup)

**Natural Cheese:** one FGP serving is 1.5 ounces ...and... one label servings is 1.0 ounces

**Processed Cheese:** one FGP serving is 2.0 ounces...and... one label serving can be:  $\frac{2}{3}$ , \_ or 1 ounce

**Yogurt:** one FGP serving is 8 ounces (1 cup) ...and... one label servings can be: 8 or 6 or 4 ounces

## **Best Value: Cost, Variety, Absorption**

- A recent study found that milk was among the least expensive food sources of calcium. It also noted that supplements do not provide other essential and nutritionally synergistic nutrients found in naturally calcium dense foods.

Keller JL, et al. The consumer cost of calcium from food and supplements. *Journal of the American Dietetic Association*. 2002; 102(11):1669-1671.

- Dairy products are available in hundreds of varieties – including lactose free, lowfat, fat free and flavored – and convenient packaging, to suit individual tastes and nutrition needs.
- Calcium may be poorly absorbed from foods rich in oxalic acid (spinach, sweet potatoes, rhubarb, and beans) or phytic acid (unleavened bread, raw beans, seeds, nuts and grains, and soy isolates). In comparison to a single 8-ounce glass of milk, an average of seven servings of dried beans or 16 servings of spinach would need to be consumed. Calcium absorption from soy beverages is 25 percent less efficient than calcium absorption from milk.

Weaver CM, et al. Choices for achieving adequate dietary calcium with a vegetarian diet. *American Journal of Clinical Nutrition*. 1999; 70(3):543S-548S.

Heaney RP, et al. Bioavailability of the calcium in fortified soy imitation milk, with some observations on method. *American Journal of Clinical Nutrition*. 2000; 71:1166-1169.

*Additional resources are available at [www.nationaldairycouncil.org](http://www.nationaldairycouncil.org).*

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