

CARBOHYDRATES: GOOD OR BAD?

Carbohydrates are making the headlines. Are carbohydrates good for our health or should they be avoided? What should we believe? Let's examine some information about carbohydrates so you can make a better choice.

WHERE ARE CARBOHYDRATES FOUND?

Fruits, vegetables and whole grains are plant-based carbohydrates. **Milk** is also a natural food that contains carbohydrate. Many snacks and sweetened beverages contain carbohydrates in a highly refined form.

Food Examples:

<u>Food</u>	<u>Carbohydrate</u>
1 slice of bread	15 grams
1 piece of fruit	15 grams
1 c. milk	12 grams
½ c. vegetables	5 grams
½ c. legumes	15 grams
1 oz. (about ¼ c.) peanuts	5 grams
1 tsp. sugar	4 grams
12 oz. sweetened beverage	38 grams

HOW MUCH CARBOHYDRATE IS RECOMMENDED?

For a **2000 calorie diet** the recommended amount of carbohydrate is **225-325 grams per day (or 45-65 percent of calories)**.¹ **Carbohydrate is a primary source of energy** in our food supply.

WHAT IS A MINIMUM CARBOHYDRATE AMOUNT?

A suggested minimum amount of carbohydrate for adults is **130 grams per day**.¹ This provides an minimal amount of carbohydrate for various organs in the body such as 1) the central nervous system-for brain function, and 2) skeletal muscles-for movement) that prefer to burn carbohydrate as an energy source.

WHY IS RECOMMENDED CARBOHYDRATE HIGHER THAN THE MINIMUM AMOUNT?

Foods that contain carbohydrate help **balance the source of energy in our diet**. Energy is derived primarily from carbohydrate and fat with smaller amounts contributed from protein. When carbohydrate is limited, more energy comes from fat and protein. Depending on the total amount and type, higher fat and protein in our diets may cause adverse health effects.

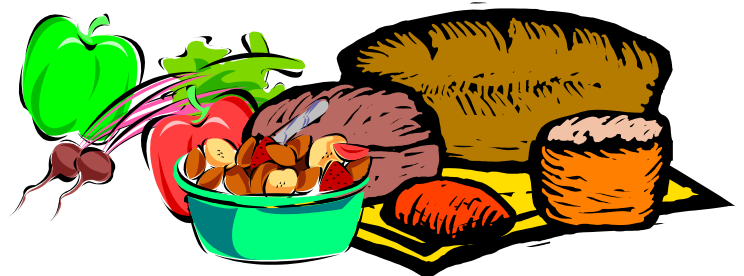
Physically active individuals require additional carbohydrate, as it is the preferred source of energy for the skeletal muscle.

ARE ALL CARBOHYDRATES CREATED EQUAL?

Plant-based, nutrient dense whole foods containing carbohydrate such as **legumes (beans), whole grains, vegetables, and fruits** are significant sources of many nutrients important to good health. Examples of nutrients provided by these whole foods include the following: dietary fiber, phyto-chemicals, folate, vitamin C, potassium, magnesium, and other micronutrients.

Dietary fiber helps slow the rate of absorption of carbohydrate following eating. Slowed absorption provides a sense of feeling full, delaying hunger, and **assists with weight control**. Slowed absorption also helps moderate the increase in blood sugar after a meal, which is **helpful for those who are at risk for or have diabetes**.

In contrast, **foods with refined sources of carbohydrates**, such as sweetened beverages and snack foods, often contain calories but few other nutrients. The recommendation is to limit portion size or eliminate these foods entirely.



DO HIGH-CARBOHYDRATE DIETS PROMOTE OBESITY?

High calorie diets with high amounts of carbohydrate (especially highly refined) are rapidly absorbed stimulating insulin release and encouraging fat synthesis.² This sequence may increase the metabolic risk for developing heart disease and diabetes.

Large portion sizes and excessive calorie intakes (above current energy needs) promote fat synthesis more than any single dietary component, such as carbohydrate.

DO LOW-CARBOHYDRATE DIETS WORK?

Current low-carbohydrate diet regimens claim that carbohydrates make you fat. They recommend restricting carbohydrate and eating primarily protein and fat.

The most famous of the low-carbohydrate diets, **The Atkins Diet**, initially advises less than 20 grams carbohydrate per day.³ Since 1 slice of bread has 15 grams of carbohydrate, the initial level of carbohydrate restriction **requires nearly complete elimination of fruits, breads, cereals, pasta, milk, and many vegetables.** The eliminated foods are good sources of dietary fiber and/or many vitamins and minerals, necessary to promote good health and prevent chronic disease.

Weight loss does occur on low-carbohydrate diets. Reducing the intake of calories (via reduction of carbohydrate containing foods) will result in weight loss. Initial weight loss will also include water loss as the carbohydrate stores in the body (bound to water) are broken-down.

Low-carbohydrate diets can't usually be sustained for extended periods. After one year, those who started a low-carbohydrate diet were found to be consuming a more balanced diet.^{4,5} Weight regain will occur unless energy balance is achieved at the new lower weight.

Sources:

1 National Academy of Sciences. Dietary Reference Intakes for Energy, Carbohydrates, Fiber, Fat, Protein, and Amino Acids, 2002 (see www.nap.edu)

2 Ludwig DS, JAMA 2002;287(18):2414-2423.

3 Anderson JW et al., J Am Coll Nutr. 2000;19(5):578-590.

4 Foster GD et al., N Engl J Med 2003;34:2082-2090.

5 Stern L et al. Ann Intern Med. 2004;140:778-785.

6 Eisenstein J et al., Nutr Rev. 2002;60(7):189-200.

WHAT ARE POSSIBLE ADVERSE HEALTH EFFECTS FROM LOW-CARBOHYDRATE DIETS?⁶

- **Less protection from chronic disease as nutrient dense foods are eliminated.**
- **Reduced dietary fiber may cause constipation.**
- **Reduced athletic performance with lower carbohydrate stored in the muscle.**
- **High protein intake can increase renal loss of calcium** so caution is advised for persons at-risk for osteoporosis.
- **High protein intake increases the load on kidneys** to excrete excess nitrogen so caution is advised for at-risk persons:
 - Diabetics
 - Pre-existing renal disease
 - Prior experience with kidney stones
- **High fat diets increase the intake of total and saturated fat from animal-based proteins.** Saturated fats increase blood cholesterol more than any other dietary component. Elevated cholesterol is one of the primary risk factors for heart disease.

RECOMMENDATIONS FOR HEALTHY WEIGHT

- ✓ Reduce calories by eating smaller portions—**CALORIES DO COUNT!**
- ✓ Increase “whole foods” such as fruits, vegetables, whole-grains, beans, seeds, and nuts. They contain phyto-chemicals, dietary fiber, and micronutrients.
- ✓ Reduce highly processed, low nutrient-dense snack foods high in sugar and/or fat.
- ✓ Reduce or eliminate sweetened beverages.
- ✓ Increase low-fat or fat-free milk and dairy.
 - Calcium helps with weight control
- ✓ Increase protein with meals/snacks for satiety.
- ✓ Exercise-Exercise-Exercise!

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