ALL ABOUT CARBS

Katie Rankell, RD, CDE
Program Director
UCI Health Weight Management
What is a Carbohydrate?

- The 3 macronutrients in our diet are: carbohydrates, proteins and fats.
- Our food intake is around 50% carbohydrates.
- The daily recommended carbohydrate intake is 45%-50% (up to 55% if you are highly active).
The Role Of Carbohydrates

- Main source of fuel and energy for our bodies.
- Carbohydrates are broken down into glucose for immediate use or stored in our liver or muscles for later use.
- When our bodies lack glycogen (stored glucose) our bodies break down muscle for energy.
- Complex carbohydrates aid in digestion and can lower your risk of many chronic diseases.
Disease Prevention

The benefits of complex carbohydrates include:

- stroke risk reduced
- type 2 diabetes risk reduced
- heart disease risk reduced
- improved weight loss & better weight maintenance
- reduced risk of asthma
- healthier carotid arteries
- reduction of inflammatory disease risk
- lower risk of colorectal cancer
- lower blood pressure & cholesterol
**Dietary Sources**

- Starches, bread, grains
- Fruits & vegetables
- Beans & lentils
- Dairy: milk & yogurt
- Snacks & sweets
- Beverages
Not all Carbs are Created Equally

- **Simple carbohydrates “bad carbs”**
  - Refined
  - Higher in sugar
  - Spike blood sugars
  - Examples: sugary cereal, sweetened beverages, chips, cookies

- **Complex Carbohydrates “good carbs”**
  - Whole grain
  - Higher in fiber
  - Increased satiety
  - Maintain blood sugars
  - Examples: oatmeal, lentils, whole grain bread or cereals
Grain Anatomy

Whole Grains: contain the entire grain kernel – the bran, germ, and endosperm.

- **The bran** is the multi-layered outer skin of the edible kernel. It contains important antioxidants, B vitamins and fiber.

- **The germ** is the embryo which has the potential to sprout into a new plant. It contains many B vitamins, some protein, minerals, and healthy fats.

- **The endosperm** is the largest portion of the kernel. It contains mainly starchy carbohydrate, and very small amounts of protein, vitamins and minerals.
Types Of Grains

- **Refined Grains:** have been milled, a process that removes the bran and the germ. This is done to give grains a finer texture and improve shelf life, but it also removes dietary fiber, iron, and many B vitamins and minerals.

- **Whole Grains:** Finding whole grain foods can be a challenge. Some foods only contain a small amount of whole grain but will say it contains *whole grain* on the front of the package. Read the ingredient list and look for “*whole grain*” as the first ingredient.
Grains & Blood Sugar

Glycemic Index

- Refined Carbs
- Complex Carbs

Glycemic Load

- Buttered noodles vs whole wheat pasta with chicken & veggies
Fiber Facts

- **Soluble Fiber**: Dissolves in water to form a gel-like material. It can help lower blood cholesterol and glucose levels. Soluble fiber is found in oats, peas, beans, apples, citrus fruits, carrots, barley and psyllium.

- **Insoluble Fiber**: Promotes the movement of material through your digestive system and increases stool bulk; can be of benefit to those who struggle with constipation or irregular stools. Whole-wheat flour, nuts, beans and vegetables, such as cauliflower, green beans and potatoes, are good sources of insoluble fiber.
How Much Fiber Do We Need?

- Men up to age 50: 38 grams
  Women up to age 50: 25 grams

- Men age 51 or older: 30 grams
  Women age 51 or older: 21 grams
Super Starch

Dried beans, legumes, peas and lentils:

Try to include dried beans into several meals per week. They are a great source of both carbohydrate and protein and are loaded with fiber, vitamins, and minerals.
Step 1: How much Carbohydrate?

1) Determine your maintenance calories, include average daily PA calories:

Example:

Female 150 lbs: 150 x 10 = 1500 + 300 PA = 1800 cals

2) Calculate calories from carbohydrate (45%-50%):

Multiply 1800 cals x .45 = 810 cals

Multiply 1800 x .50 = 900 cals
Step 2: Convert Calories To Grams

There are 4 calories per gram of Carbohydrate.

Example:
810 ÷ 4 = 202 grams carbohydrate
540 ÷ 4 = 225 grams carbohydrate

202-225 grams Carbohydrate

This female requires 200 grams Carbohydrate/day
Let’s Look at Some Whole Grains and High Fiber Carbs…
Let’s Look at Some Whole Grains and High Fiber Carbs…
Let’s Look at Some Whole Grains and High Fiber Carbs…
Let’s Look at Some Whole Grains and High Fiber Carbs…

![Image of a box of whole grain pasta](image1.png)

![Image of a nutrition facts label](image2.png)
Let’s Look at Some Whole Grains and High Fiber Carbs...

Nature's Own 100% Whole Wheat Bread

Nutrition Facts
Serving Size 1 Slice (28g/0.90oz)
Servings Per Container 22

Amount Per Serving
Calories 60
Calories from Fat 5

Total Fat 0.5g
Saturated Fat 0g
Trans Fat 0g
Polyunsaturated Fat 0g
Monounsaturated Fat 0g
Cholesterol 0mg
Sodium 110mg

Total Carbohydrate 11g
Dietary Fiber 2g
Sugars Less than 1g

Protein 4g

Vitamin A 0% 
Vitamin C 0%
Calcium 5% 
Iron 4%
Thiamin 6% 
Riboflavin 2%
Niacin 4% 
Folic Acid 4%

Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

Calories: 2,000 2,500
Total Fat Less than 65g 80g
Sat. Fat Less than 20g 25g
Cholesterol Less than 300mg 300mg
Sodium Less than 2,400mg 2,400mg
Total Carbohydrate 300g 375g
Protein 25g 30g

The Dietary Guidelines for all Americans encourage physical activity. “MyPlate” is an easy way to choose healthy food choices at each meal and ensure balance in your diet. Eating grains, especially whole grains, plays a key role in maintaining a healthy body weight and reducing the risk of chronic diseases like heart disease, some cancers, and type 2 diabetes. When you’re trying to add whole grains to your daily diet, you’re not only adding whole grain carbohydrates, you’re adding fiber, vitamins, and minerals as well.
Let’s Look at Some Whole Grains and High Fiber Carbs...
Food For Thought

- Calculate your Carbohydrate and Fiber intake in grams on at least 1 day this week.

- Compare your actual intake to your goal intake.
Thank you

KATIE RANKELL, RD, CDE
KRANKELL@HS.UCI.EDU