



Diabetes and Nutrition: Carbohydrates

HOW ARE DIABETES AND NUTRITION LINKED?

Diabetes is a disease in which levels of glucose (sugar) in the blood are higher than normal. Glucose is produced by the body from the foods you eat, mainly carbohydrates. When you consume carbohydrates, your glucose levels go up. Keeping track of how many carbohydrates you eat can help you keep your blood glucose levels in your target range.

DID YOU KNOW?

Checking blood glucose levels two hours after meals will allow you to adjust the amount of carbohydrates you need to maintain blood glucose control.

WHAT ARE CARBOHYDRATES?

Carbohydrates (carbs) are the starches, sugars, and fiber in your diet. Starch is in breads, pasta, cereals, potatoes, beans, peas, and lentils. Natural sugars are in fruits, milk, and vegetables. Desserts, sweetened beverages, and candy contain added sugars. Fiber is in all plant foods—vegetables, fruits, grains, and beans.

Whole grains contain more fiber, vitamins, and minerals than refined grains like white flour. Brown rice, wild rice, oats, corn, barley, whole wheat breads, whole wheat pasta, millet, and quinoa are some examples of whole grains.

While the amount of carbohydrate is important, so is the quality. Whole grains, beans, vegetables, and fruits are best.

EXAMPLES OF 1 CARBOHYDRATE CHOICE

- 1/3 cup of cooked rice or pasta
- 1/2 cup of cooked oatmeal
- 1 slice of bread (1 oz)
- 1/2 cup of corn
- 1/4 large cooked potato
- 1/2 cup of cooked beans (such as black or kidney)
- 1 small piece of fruit or 4 ounces of fruit juice
- 8 ounces of milk
- 6 ounces of plain yogurt

HOW DOES COUNTING CARBS HELP CONTROL BLOOD GLUCOSE LEVELS?

Managing your diabetes depends on controlling the amount of glucose in your bloodstream. Eating the same amount of carbs each day can help blood glucose levels stay on target. The goal is to keep glucose levels as close to normal as possible. For people who take insulin, sometimes the amount of insulin needed is based on the amount of carbs in a meal.

RECOMMENDED LEVELS OF BLOOD GLUCOSE

Levels Before and After Meals

Before a meal	70–130 mg/dl (5.0–7.2 mmol/l)
After a meal	Less than 180 mg/dl (less than 10.0 mmol/l)

HOW CAN YOU MAKE SURE YOU HAVE THE RIGHT AMOUNT OF CARBS AT MEALS AND SNACKS?

To start, ask your doctor or a registered dietitian or certified diabetes educator to help you plan the amount of carbohydrates to include in your meals and snacks.

Learn to read food labels for carbohydrate content. Check the serving size and look at the amount of total carbohydrate. Decide how many servings you are going to eat and calculate the amount of carbohydrate. For example, if the label shows that one slice of bread has 15 grams of carbohydrates and you choose to eat two slices, then your total carbohydrate intake will be 30 grams or 2 carbohydrate choices.

People with diabetes need to pay particular attention to their carbohydrate intake. But don't forget to include foods containing lean protein and healthy fats to round out your meal plan.

Questions to ask your doctor

- How many grams of carbohydrate should I have at each meal and snack?
- When should I check my blood glucose level?
- How are my glucose levels?
- What else can I do to keep my glucose levels on target?
- Should I see a diabetes educator and/or a registered dietitian to learn more about carbs?
- Should I see an endocrinologist for my care?

RESOURCES

- Find-an-Endocrinologist: www.hormone.org or call 1-800-HORMONE (1-800-467-6663)
- Find a diabetes educator (American Association of Diabetes Educators): www.diabeteseducator.org/DiabetesEducation/Find.html
- Hormone Health Network information about diabetes: www.hormone.org/diabetes
- The American Diabetes Association: www.diabetes.org/food-and-fitness/food/planning-meals/carb-counting/
- Joslin Diabetes Center: www.joslin.org/info/Carbohydrate_Counting_101.html
- National Diabetes Information Clearinghouse (National Institutes of Health): diabetes.niddk.nih.gov

EDITORS

Lorena Drago, MS, RD, CDN, CDE
Amparo Gonzalez, RN, CDE
Mark Molitch, MD

April 2011, 2nd Edition

The Hormone Health Network offers free, online resources based on the most advanced clinical and scientific knowledge from The Endocrine Society (www.endo-society.org). The Network's goal is to move patients from educated to engaged, from informed to active partners in their health care. This fact sheet is also available in Spanish at www.hormone.org/Spanish.

Diabetes and Nutrition: Carbohydrates Fact Sheet



www.hormone.org