

Nutritional Strategies for Managing Diabetes

Your individualized meal plan will include the number of servings you should eat each day from carbohydrate, protein and fat. However, the amount of carbohydrate or “carbs” that you eat affects your blood glucose/sugar level more than anything else in your diet. Foods that are high in carbohydrate are found in the Starch, Fruit and Milk groups, while the Vegetable group contains a small amount of carbohydrate. The Meat and Fat groups contain little or no carbohydrate. The amount of carbohydrate you eat at each meal and snack will primarily determine how high your blood glucose/sugar level subsequently rises.

Meal Planning for Diabetes

- Work with your Registered Dietitian or Certified Diabetes Educator to develop a meal plan personalized for your type of diabetes, medication, food preferences, lifestyle and goals (e.g. weight loss).
- Eat 3 meals and snacks (if needed) at relatively consistent times every day. Skipping scheduled meals and snacks can lead to large fluctuations in blood glucose levels.
- Eat about the same amount of carbohydrate at meals and snacks each day to help keep your blood glucose in control.
- Monitor your blood glucose level closely whenever you try new foods, vary your meal plan, or change your exercise routine.
- Plan for exercise, which helps control your blood glucose level by making your body’s cells more sensitive to insulin. For example, take a 10-20 minute walk after one or all meals each day.
- Eat a variety of foods each day including fruits, vegetables, whole grains, low-fat daily products and lean meats.
- Eat sweets, salty foods and fried foods in small amounts. Choose water or sugar-free beverages instead of juices, regular soda, sweet tea, or other sugar-sweetened soft drinks.
- Remember that your meal plan is individualized for you only. Each person with diabetes may have a slightly different meal plan.

The 3 Major Food Components: Carbohydrate, Protein and Fat

- **Carbohydrate**
 - Metabolism:
 - Carbohydrate is broken down into sugar.
 - Insulin helps the sugar get into the cells where it is used for energy or stored.
 - Functions in the body:
 - Energy source - certain cells can *only* use sugar/glucose for energy, i.e., red blood cells and brain.
 - Food sources:
 - **Starch** – found in bread, pasta, cereals, grains, potatoes, beans, peas, lentils and corn
 - **Sugar** – found naturally in fruits, milk and yogurt

- **Added Sugar** – found in desserts, candy, jams, syrups and sweetened food products (i.e., cereals, yogurt, beverages and baked goods)
- **Protein**
 - Functions in the body:
 - Growth and repair of tissues
 - Immune function (i.e., fight infections).
 - Food sources: meats, poultry, fish, eggs, legumes, dairy products
- **Fats**
 - Functions in the body:
 - Important component of cell membranes
 - Used to make bile acids, sex hormones, adrenal hormones, vitamin D and cholesterol
 - Types and food sources:
 - **Monounsaturated** (very healthy) – olive, canola, peanut oils
 - **Polyunsaturated** (healthy) – walnuts, omega-3 (i.e., fish)
 - **Saturated** (unhealthy) – most animal fats, bacon, butter, lard
 - **Trans** (unhealthy) – stick margarine, baked goods, fried food

Carbohydrate Counting

- 15 grams carbohydrate = 1 carbohydrate serving
- 30 grams carbohydrate = 2 carbohydrate servings
- 45 grams carbohydrate = 3 carbohydrate servings
- 60 grams carbohydrate = 4 carbohydrate servings

Exercise with Diabetes

- Always check with your doctor before starting any exercise program.
- Check blood glucose/sugar before exercise – do NOT exercise if blood glucose is less than 100 or greater than 240 with ketones.
- Begin your exercise program slowly - gradually increase *duration* (minutes/ exercise session), *intensity* (difficulty level) and *frequency* (times/week).
- Try to work up to 30-60 minutes of moderate-intensity exercise at least 3 to 6 times per week.
- Carry glucose tablets or a carbohydrate-containing snack with you in case of low blood sugar.
- Discuss a snack plan for exercise with your Registered Dietitian or Certified Diabetes Educator.
- Drink plenty of fluids – water and sugar-free beverages.
- Wear your ID bracelet while exercising.
- Wear appropriate clothing and shoes.
- Check your feet regularly for any sores or blisters that may develop.
- Check blood glucose again after exercise.

Exchange Lists and Carbohydrate Content of Selected Foods

Food	Amount	Carbohydrate (grams)
<i>Starch List</i>		
Bread	1 slice (1 oz.)	15
English muffin, bagel, hamburger bun	1/2 of one (1 oz.)	15
Cooked cereal	1/2 cup cooked	15
Ready-to-eat, unsweetened cereal	1 oz.	15
Grains (pasta, bulgur, barley)	1/2 cup cooked	15
Starchy vegetables (corn, peas, potatoes)	1/2 cup	15
Rice, beans, lentils, sweet potato	1/3 cup	15
Baked potato	1 small	15
Pretzels	3/4 oz.	15
Air-popped popcorn	3 cups	15
<i>Starch with Fat</i>		
Biscuit (2-1/2 inches)	1 each	15
Pancakes (4 inches)	2 each	15
Waffle (4-1/2 inches)	1 each	15
Muffin (1-1/2 ounces)	1 each	15
Crackers, round, butter-type	6 each	15
<i>Fruit List</i>		
Fresh fruit (apple, pear, orange)	1 medium	15
Chopped fresh fruit	1/2 cup	15
Canned fruit (no sugar added)	1/2 cup	15
Strawberries or watermelon	1-1/4 cups	15
Cantaloupe or honeydew melon	1 cup	15
100% fruit juice	1/2 cup (4 fl. oz.)	15
<i>Milk List</i>		
Low fat milk	1 cup (8 fl. oz.)	12
Buttermilk (nonfat or low fat)	1 cup (8 fl. oz.)	12
Yogurt (nonfat or low fat, plain or artificially sweetened)	3/4 cup (6 oz.)	12
<i>Vegetable List</i>		
Raw vegetables	1 cup	5
Cooked vegetables	1/2 cup	5
Vegetable or tomato juice	1/2 cup	5
<i>Meat and Meat Substitutes</i>		
Meat, fish, poultry, cheese, eggs	Any amount	0
<i>Fats</i>		
Oil, margarine, butter, peanut butter, cream cheese, bacon	Any amount	0

REFERENCES

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