

# Diabetes

## Life Lines



August-September, 2015

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### **Diabetes - the Medical Perspective**

Carbohydrates are an essential part of a healthy diet despite myths and misunderstanding around diabetes and carbohydrate intake. Carbohydrates are favorite foods of many and are important sources of vitamins, minerals, and fiber. Some individuals with diabetes incorrectly believe they can't eat foods containing sugar. Some go as far as eliminating potatoes, bread and even fruit. Like protein and fats, some carbohydrate foods are healthier than others; however there are no foods that can't be eaten in moderation. It was only before medications were developed that all carbohydrates were eliminated from the diet. Blood glucose levels did not rise as much, but children failed to thrive and were malnourished.

In thinking about healthy food choices for diabetes more emphasis is placed on carbohydrate intake than protein and fats. This is because carbohydrates directly affect blood glucose levels. Glucose levels begin to rise within a

few minutes of eating carbohydrate containing foods. With diabetes, the more carbohydrate you eat the more your blood glucose will increase. Medication is often necessary to keep blood glucose within target ranges. When medication is not needed, some insulin is still present to regulate the blood glucose rises when eating carbohydrate.

The right amount of carbohydrate intake for meals and snacks depends on your age; calorie needs, activity level, and what, if any diabetes medication you are taking. Eating about the same amount of carbohydrates for meals and snacks helps keep blood glucose levels more stable. A diabetes meal planning method called carbohydrate counting is a way to keep track of your carbohydrate intake.

A registered dietitian can help you set a daily carbohydrate goal that is divided between meal times and snacks. Your diabetes meal plan should be individualized to meet your particular needs. A starting place for most women is between 45-60 grams of carbohydrates (3-4 carb choices) at each meal. If desired, or part of a recommended meal plan, an additional 15 grams of carbohydrate (1 carb

choice) can be included for snacks. In general, most men need 60-75 grams of carb (4 to 5 carb choices) each meal. Again, if snacks are part of the meal plan they should be limited to 15-30 grams carb (1-2 carb choices) per snack. Be sure to check with your health care team, however.

A carbohydrate choice is the amount of food that equals 15 grams of carbohydrate. So 45-60 grams of carb per meals is equal to 3 to 4 carbohydrate choices per meal. Remember, 1 carb choice = 15 grams of carb, so 3 carb choices (3 x 15) = 45 grams of carb, 4 carb choices (4 x 15) = 60 grams of carb and so on.

Eating consistent amounts of carbohydrate for meals and snacks as part of a healthy diet, along with regular physical activity and taking medication as prescribed will help keep glucose within target ranges. Because diabetes is a progressive disease your carbohydrate and medication needs may change over time. Regular visits with your health care provider to make adjustments in your diabetes care plan will be necessary.

## Diabetes and Food

Carbohydrates are found in a wide variety of foods. There are three main types of carbohydrates in the foods we eat. These are starches, sugar and fiber. All carbohydrates, except fiber break down into sugar during digestion.

Starches include breads, cereals, crackers, grains, starchy vegetables, beans, peas, and lentils. Sugars may be naturally occurring as found in fruit and milk or added during processing, as in desserts or heavy syrup being added to canned fruit. Fiber is the indigestible part of plant foods found in vegetables, fruits, and whole grains. Choosing higher fiber carbohydrate foods can be beneficial. Fiber increases the feeling of being full after eating. Because the fiber part of the carbohydrate was not digested and passes through your body there is less carbohydrate available to increase glucose levels.

The serving sizes or quantity of various foods needed to equal 15 grams of carb per serving will differ depending on the food. It is important to remember: **15 grams of carbohydrate = 1 carb choice**. The following table shows the amount of carbohydrate per serving of the main food groups:

<b>Food Group</b>	<b>Grams of Carbohydrates per Serving</b>	<b>Number of Carbohydrate Choices</b>
Starches	15	1
Fruit	15	1
Milk	12	1
Non-Starchy Vegetables	5	Usually counted as free food. 3 servings = 1 carb choice
Meats	0	0
Fats	0 (some fat-free salad dressings contain carb)	0
Sweets, Desserts	15	1

Fresh fruits and vegetables generally do not come with a food label. It doesn't take long to become familiar with the amount of carbohydrate in these foods. Generally a small piece of fruit such as an apple or orange is 15 grams of carb (1 carb choice). The serving size for most starchy vegetables like corn, potatoes and peas to equal 15 grams of carb (1 carb choice) is ½ cup.

It is easier to count carbs when a food label is available. Start with the serving size. All nutrition information on the label refers to that serving size. Next, look at the grams of total carbohydrate. This includes all the carbohydrate in the food – starches, sugar and fiber. If the item you planned on eating has more carb than appropriate for you meal or snack then you can adjust the serving size down or choose a different food.

Although total carbohydrate intake is what affects blood glucose the most it is also important to be aware of other information on the nutrition label. Pay attention to calories, amount and type of fat, and the sodium content to make sure your overall meal plan is heart healthy and within your calorie needs.

Favorite treats can be a part of your diabetes meal plan, but like any other healthy eating plan the majority of calories need to come from lean protein, low fat dairy, fruits, vegetables and whole grains. For resources on carb counting and diabetes meal planning visit the American Diabetes Association at <http://www.diabetes.org/> or the Academy of Nutrition and Dietetics at <http://www.eatright.org/>

## Recipes to Try

### Vegetables and Hamburger Skillet

#### Ingredients

- 1 pound lean ground beef
- 3 cups tomatoes, diced
- 1 cup chopped onion
- 1 cup frozen corn
- 2 cups chopped green peppers
- 1 tablespoon minced garlic

*5 – 1 cup servings*



#### Directions

1. Brown beef and onion in large skillet. Drain.
2. Add vegetables and garlic. Simmer 20 minutes.

#### *Nutrition Facts per serving*

Calories	292	Fat	16 grams
Protein	20 grams	Calories from fat	144
Carbohydrate	18 grams	Cholesterol	63 mg
Fiber	3 grams	Sodium	73 mg

This and other recipes available at  
<http://urbanext.illinois.edu/diabetesrecipes/intro.cfm>

## Lemon Cake

### Ingredients

*16 servings*

- 1 purchased angel food cake
- 1 box (4-serving size) lemon instant sugar-free pudding
- ½ cup skim milk
- 1 carton (8-ounce) lemon-flavored non-fat, no-sugar-added yogurt
- ½ carton (8-ounce) “lite” frozen whipped topping thawed



### Directions

1. Cut angel food cake in half, horizontally, using serrated knife in a sawing motion. Place bottom layer on serving plate.
2. Beat pudding with milk until thickened, about one minute. Stir in yogurt.
3. Fold thawed reduced-calorie whipped topping into pudding mixture.
4. Frost bottom layer of cake with lemon mixture. You may then place top layer on cake and frost with remaining mixture, or make a second cake with remaining topping mixture. Chill until served.

### *Nutrition facts per serving*

Calories	156	Fat	2 grams
Protein	3 grams	Calories from fat	18
Carbohydrate	30 grams	Cholesterol	0 mg
Fiber	0 gram	Sodium	361 mg

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## Sample Menu

BREAKFAST	Amount/ Portion
Soft boiled egg	1
Oatmeal	½ cup
Whole wheat toast	1 slice
Soft tub margarine	2 teaspoons
Fresh blueberries	¾ cup
Skim milk	1 cup
480 Calories; 58 Grams Carbohydrates; 4 Carb Choices	
LUNCH	
Chicken Salad	¾ cup
Cut raw vegetables	1 cup
Whole wheat crackers	6
Tomato Soup	1 cup
Lemon Cake †	1 serving
641 Calories; 60 Carbohydrates; 4 Carbohydrate Choices	
DINNER	
Vegetable and Hamburger Skillet †	1 cup
Steamed broccoli	1 cup
Brown rice	2/3 cup
Soft tub margarine	2 teaspoons
Sliced peaches	½ cup
652 Calories; 63 Carbohydrates; 4 Carbohydrate Choices	
Total: 1773 Calories, 181 Carbohydrates, 12 Carbohydrate Choices	

† Recipes from *Recipes for Diabetes* at  
<http://urbanext.illinois.edu/diabetesrecipes/>  
 or this newsletter



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