

Diabetes Meal Plan

Goals for Healthy Eating

Good blood glucose levels:

- Checking your blood glucose will let you and your diabetes team know whether you are on the meal plan that is best for you.
- The ADA suggests the following blood glucose goals:

Before meals	80-120 mg/dl
Bedtime	100-140 mg/dl

Talk with your doctor to learn your blood glucose goals.

- Blood lipid level goals for people with diabetes:

Total cholesterol	Less than 200 mg/dl
HDL (good cholesterol)	Greater than 45 mg/dl
LDL (bad cholesterol)	Less than 100 mg/dl
Triglycerides	Less than 200 mg/dl

- Prevent, delay or treat conditions that relate to nutrition.
 - Hypoglycemia (low blood glucose) - if your blood glucose drops too low too often, you might need to make changes in your meal plan.
 - Sick days or illnesses - when you are sick, you will need to make changes in your meal plan.
 - High blood pressure - the goal of treatment is 130/80 or less.
 - Talk to your doctor about a low-sodium diet.
 - Kidney disease - if you have or develop kidney problems, you will need a special meal plan to follow.
- Balance food intake with diabetes medication and activity.
 - Eat at regular times.
 - Try not to skip meals.
 - Eat about the same amount of food at meal and snack times.
 - Improve overall health.

The diabetes meal plan:

- Is a healthy meal plan that is good for everyone.
- Does not require you to buy special foods.
- Should be based on **your** needs. A dietitian will help you know the number of calories and types of foods your body needs.

Food Groups

There are three food groups:

- Carbohydrate (CHO)
- Protein
- Fat

Carbohydrates

Foods containing carbohydrates serve as our main energy source. All carbohydrates in food turn to glucose. Starches, fruits and milk are high in carbohydrates. Non-starchy vegetables contain some carbohydrates, but less than these others.

There are two types of carbohydrates:

- Simple
- Complex

Foods containing **simple carbohydrates** include:

- Desserts (cakes, cookies, pies), soft drinks, candy, table sugar
- Milk
- Fruit juice
- Honey

Foods containing **complex carbohydrates** include:

- Whole-wheat breads and other grain products
- Vegetables
- Beans, peas, corn

Many **complex carbohydrates** contain fiber. **Fiber** in the diet:

- Prevents constipation
- Helps lower cholesterol
- May help prevent some types of cancer
- May help with appetite and weight control

We should eat more foods containing **complex carbohydrates**.

Protein

Foods containing protein are used for tissue building and repair. Some of the protein you eat turns into glucose. Foods containing **protein** include:

- Meat (beef, pork, chicken, turkey) and fish
- Eggs
- Dairy products (milk, cheese)
- Nuts
- Beans (pinto, garbonzo, navy)

Fat

Our bodies need some fat. Fats do not affect blood glucose very much but are high in calories. Too many foods containing fats, or foods containing the wrong kind of fat, may cause your blood lipids (cholesterol) to go high,

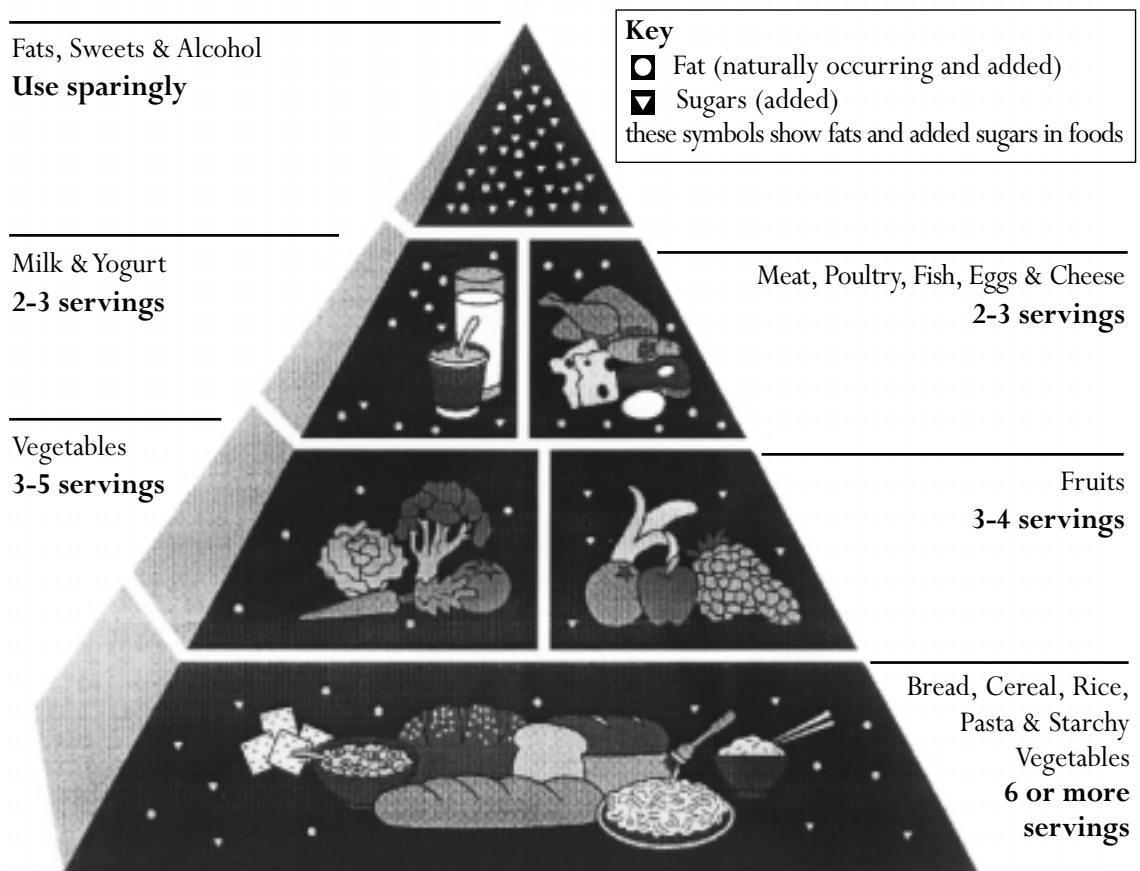
increase your risk for heart disease and cause weight gain. You should talk with your doctor and dietitian about the best meal plan for you. The right type and amount of fat will depend on your individual needs.

Foods containing **fat** include:

- Butter, margarine, shortening, lard, oils
- Bacon, sausage
- Sauces, gravies
- Nuts
- Salad dressing, mayonnaise, sour cream, cream cheese

The Food Guide Pyramid

The Food Guide Pyramid can be used as a guide for the diabetes meal plan and can help you know how much of which types of food to eat.



Start at the bottom of the pyramid and build up with your food choices. Fewer choices should come from the top of the pyramid. Select a variety of foods on a daily basis to help you with your diabetes meal plan.

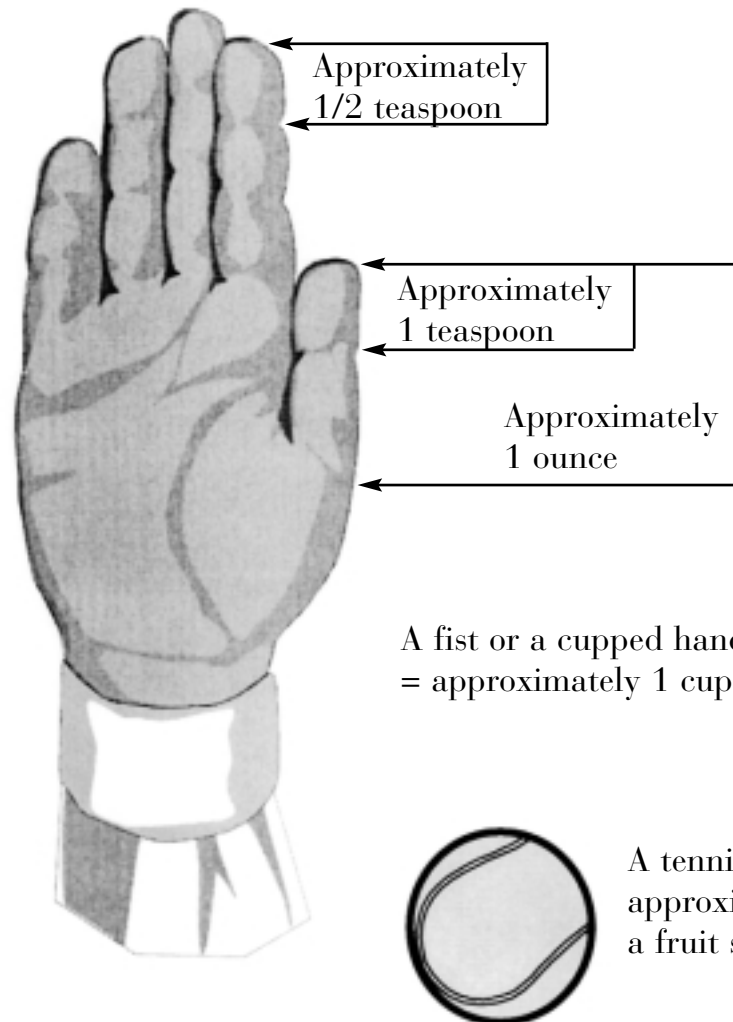
Note the number of servings you should have from each food group as well as the serving size.

Serving Size

It is important to know the serving or portion size of foods. Many times, the amount of a food we eat is two or more servings.

Using this handy measuring guide will also help you know portion size.

- The fist or a cupped hand is about one cup.
- The tip of the index finger is 1/2 teaspoon.
- The tip of the thumb is about one teaspoon.
- The thumb length is about one ounce of cheese.
- The palm of the hand is about three ounces of meat.
- A tennis ball is about one serving for a fruit.



Meal Planning with Carbohydrates

What is a carbohydrate? A carbohydrate is a nutrient found in food that breaks down into sugar (glucose) when eaten.

What foods contain carbohydrate? Carbohydrates are found in **milk, fruits, grains, starchy vegetables** and any food that is sweetened with added sugar.

Is there a “Diabetic Diet”? No! Recommendations are for a low-fat, healthy meal plan that provides constant amounts of carbohydrates throughout the day. Healthy meals include foods with carbohydrate, protein/meat and some fat. In this type of meal plan, carbohydrates are the most important nutrient for people with diabetes. The goals for meal planning are the same whether you have type 1 or type 2 diabetes. Your focus should be on the types of foods that you eat, the size of portions you eat and how often you eat during the day.

What about sugar? Sugar is a form of carbohydrate that is used to sweeten products. It can be counted as part of your total carbohydrate for the day. Desserts and other sweets should be used carefully because they are low in important nutrients and high in calories and fat.

How do I learn about carbohydrates in food? The **Nutrition Facts** panel on food labels is helpful in learning how many total grams of carbohydrate you are eating. Some foods do not have food labels. Your local bookstore and library also have books that list nutritional values, including how much carbohydrate per serving.

What about sugar-free products? When a food is labeled sugar-free, that means it has been sweetened with an artificial sugar substitute that does not contain carbohydrate. However, if the food is milk, fruit, grain or starch, the carbohydrate amount shown on the nutrition label must be counted as part of your daily intake.

What is a consistent carbohydrate meal plan? Carbohydrates break down into sugar (glucose), giving your body the energy or fuel it needs. Your body is always using glucose. As you eat carbohydrates, they break down into sugar and are carried by insulin from your bloodstream to different parts of the body. Eating the same amount of carbohydrate (measured in grams) at regular times throughout the day gives your body the energy it needs. Wide changes in your blood sugars can be avoided by creating a balance between carbohydrates and circulating insulin.

Reading a Nutrition Label

1. Serving Size All the nutrition information on the label applies to the serving size listed. Using the portion listed on the label is important to determine the correct grams of carbohydrate, fat, protein and sodium eaten.

2. Total Fat The number of grams of fat shown on the label includes any type of fat in the food. If the food has less than five grams of fat per serving, it is considered a low-fat food. (Note: If you buy low-fat products and fix low-fat meals, you probably are eating a healthy, low-fat diet. Be cautious of fat-free foods, however, because they may be high in carbohydrates.)

3. Total Sodium If you have been told to limit your sodium intake, you may find these basic guidelines helpful: Limit your total sodium to less than 600 mg per meal. A food that contains 140 mg sodium or less per serving is considered to be a low-sodium food.

4. Total Carbohydrate The total grams of carbohydrate listed on the label includes any type of sugar that is in the food, whether it is added or naturally occurring in the food. Sugar listed on the nutrition label under **Total Carbohydrate** indicates how much sugar is added to the food. This number is part of the **Total Carbohydrate** (sugar) in the product. It is **not** in addition to the **Total Carbohydrate** grams.

Important points to remember:

- Look at total grams of carbohydrates.
- Plan meals and snacks using the same number of carbohydrates at the same times each day.

Nutrition Facts			
1. Serving Size ½ cup (114g) Servings Per Container: 4			
Amount Per Serving			
Calories 90		Calories From Fat 30	
% Daily Value*			
2.	Total Fat 3g		5%
	Saturated Fat 0g		0%
	Cholesterol 0mg		0%
3.	Sodium 300mg		13%
4.	Total Carbohydrate 13g		4%
	Dietary Fiber 3g		12%
	Sugars 3g		
Protein 3g			
Vitamin A 80%		• Vitamin C 2%	
Calcium 4%		• Iron 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
Fiber		25g	30g
Calories per gram:			
Fat 9		• Carbohydrates 4 • Protein 4	

**Phase I:
How do I know
how much
carbohydrate
to eat?**

Step 1: Determine how many grams of carbohydrate you are currently eating. This can be done by keeping a food diary to record all your food choices, portion sizes and grams of carbohydrate per portion eaten. Record all foods. Don't forget to include snacks, beverages, etc.

Step 2: Test your blood sugar daily before each meal. Record results to see blood sugar trends at different times of the day.

Step 3: Compare your food diary to your blood sugar records. Note your best blood sugars and what you ate. This should help determine your grams of carbohydrate for future meals and snacks. Consistency is the key to good meal planning.

Step 4: The number of grams of carbohydrate for each meal is based on your needs. Ask yourself these questions: Am I eating enough carbohydrates to prevent hypoglycemia (low blood sugar) before the next meal? Am I eating large portions of carbohydrates, causing high blood sugar before the next meal? Does the amount of carbohydrate I am eating balance the amount of insulin in my blood to give my body enough energy each day? Look at your food records and blood sugar diary to answer these questions. If you need help, call your care coordinator.

**Phase II:
How do I plan
a meal with a
consistent
amount of
carbohydrates?**

Step 1: Decide on the foods you want to eat. Place these foods in one of four food groups: **fat, meat, non-starchy vegetables or carbohydrates**. Planning meals should allow you to eat the foods you like.

Step 2: Ask yourself these questions:

1. **Fat:** If I have added fat to this meal, have I looked at the portion size? (Remember, fat contributes to heart disease, one of the leading problems for people with diabetes; therefore, use carefully. A high-fat meal may also cause your blood sugar to stay high for a longer period of time.)

2. **Meat:** If I am using meat for this meal, have I fixed the meat in a low-fat way, such as baking, broiling or grilling? Have I used a reasonable portion size?

3. **Non-Starchy Vegetables:** If I am using non-starchy vegetables (containing less than four grams of carbohydrate per one-cup serving) as part of my meal, have I fixed them using a low-fat method? Vegetables provide important vitamins and minerals and should be eaten daily. They can add bulk to meals to help satisfy your hunger.

4. **Carbohydrates:** Am I using carbohydrates as part of my meal? Remember, your goal is to eat a consistent amount of carbohydrate at each meal. If what you have chosen to eat for a meal does not contain carbohydrate, then ask yourself, “What carbohydrates can I add to make this a balanced meal plan?” Carbohydrates can come from many sources. Read food labels to learn about total carbohydrate per serving.

CARBOHYDRATES

Each portion listed below has approximately 15 grams of carbohydrate

<p><u>MILK</u></p> <p>Skim and very low-fat milk</p> <p>Skim milk 1 cup</p> <p>1/2% milk 1 cup</p> <p>1% milk 1 cup</p> <p>Nonfat or low-fat buttermilk 1 cup</p> <p>Low-lactose milk 1 cup</p> <p>Evaporated skim milk 1/2 cup</p> <p>Nonfat dry milk 1/3 cup dry</p> <p>Low-fat milk</p> <p>2% milk 1 cup</p> <p>Sweet acidophilus milk 1 cup</p> <p>Chocolate milk 1/2 cup</p> <p>Whole milk</p> <p>(Not recommended – high in saturated fat)</p> <p>Whole milk 1 cup</p> <p>Evaporated whole milk 1/2 cup</p> <p>Goat’s milk 1 cup</p> <p>Coconut milk 1 cup</p>	<p><u>FRUITS</u></p> <p>Apple, small, 4 oz 1</p> <p>Applesauce, unsweetened 1/2 cup</p> <p>Apricots, fresh 4 whole</p> <p>Banana, small, 6-inch 1</p> <p>Blackberries 3/4 cup</p> <p>Blueberries 3/4 cup</p> <p>Cantaloupe 1/3 melon or 1 cup cubes</p> <p>Cherries, fresh 12</p> <p>Dates 3</p> <p>Grapefruit, large 1/2</p> <p>Grapes, small 15</p> <p>Kiwi 1</p> <p>Orange, small 1</p> <p>Peach, medium, fresh 1</p> <p>Peaches, canned 1/2 cup</p> <p>Pear, large, fresh 1/2</p> <p>Pineapple, fresh 3/4 cup</p> <p>Plum, small 2</p> <p>Prunes, dried 3</p> <p>Raisins 2 tbsp.</p> <p>Raspberries 1 cup</p> <p>Strawberries, whole 1 1/4 cups</p> <p>Tangerine, small 2</p> <p>Watermelon 1 1/4 cup cubes</p>
<p><u>OTHER MILK PRODUCTS</u></p> <p>Plain, nonfat yogurt 3/4 cup</p> <p>Nonfat or low-fat fruit-flavored yogurt with artificial sweetener 1 cup</p> <p>Yogurt, frozen, fat-free 1/3 cup</p> <p>Ice cream, fat-free 1/2 cup</p>	<p><u>FRUIT JUICES</u></p> <p>Apple 1/2 cup</p> <p>Cranberry juice cocktail 1/3 cup</p> <p>Fruit blends, 100% juice 1/3 cup</p> <p>Grape 1/3 cup</p> <p>Grapefruit 1/2 cup</p> <p>Orange 1/2 cup</p> <p>Pineapple 1/2 cup</p> <p>Prune 1/3 cup</p>
<p><u>OTHER CARBOHYDRATES</u></p> <p>Gelatin, regular 1/2 cup</p> <p>Honey 1 tbsp.</p> <p>Jam or jelly, regular 1 tbsp.</p> <p>Pudding, sugar-free 1/2 cup</p> <p>Sherbet, sorbet 1/4 cup</p> <p>Syrup, light 2 tbsp.</p> <p>Cream soups made with water 1 cup</p> <p>Vegetable or noodle soup 1 cup</p>	<p><u>FRUIT JUICES</u></p> <p>Apple 1/2 cup</p> <p>Cranberry juice cocktail 1/3 cup</p> <p>Fruit blends, 100% juice 1/3 cup</p> <p>Grape 1/3 cup</p> <p>Grapefruit 1/2 cup</p> <p>Orange 1/2 cup</p> <p>Pineapple 1/2 cup</p> <p>Prune 1/3 cup</p>

CARBOHYDRATES

Each portion listed below has approximately 15 grams of carbohydrate

Breads

Bagel: (small)	1/2
(bakery style)	1/4
Bread, reduced calorie	2 slices
Bread, white, wheat, rye	1 slice
Bread sticks, 4 in x 1/2 in	2
English muffin	1/2
Frankfurter or hamburger bun	1/2
Pita, 6 inches across	1/2
Roll, plain, small	1
Tortilla, corn or flour, 6-inch	1

Cereals

Bran	1/2 cup
Cereals, unsweetened	3/4 cup
Granola, low-fat	1/4 cup
Grape-Nuts®	1/4 cup
Grits (cooked)	1/2 cup
Oats (cooked)	1/2 cup
Puffed cereal	1 1/2 cups
Raisin bran	1/3 cup
Shredded wheat	1/2 cup
Sugar-frosted	1/2 cup

GRAINS

Cornmeal	3 Tbsp.
Flour	3 Tbsp.
Granulated sugar	4 tsp.
Pasta (cooked)	1/2 cup
Rice, white or brown (cooked)	1/3 cup

BEANS

Baked beans	1/3 cup
Dried beans (garbanzo, pinto, kidney, white, split, black-eyed)	1/2 cup
Refried beans	1/3 cup
Lima or butter beans	2/3 cup

STARCHY VEGETABLES

Corn	1/2 cup
Corn on cob, medium	1 ear
Mixed vegetables with corn, peas or pasta	1 cup
Peas, green	1/2 cup
Potato, baked (3 oz)	1
Potato, mashed or diced	1/2 cup
Squash, winter (acorn or butternut)	1 cup
Yam, sweet potato, plain	1/2 cup

CRACKERS AND SNACKS

Animal crackers	8
Breakfast bar, fat-free	1/2
Graham crackers	3 squares
Gingersnaps	3
Oyster crackers	24
Pretzels	3/4 oz.
Popcorn (no fat added)	3 cups popped
Rice cakes, 4 inches across	2
Saltine-type crackers	6
Snack chips, fat-free	15

STARCHY FOODS PREPARED WITH FAT(Count each serving as 15 grams of carbohydrate and 5 grams of fat)

Biscuit, 2 1/2 inches across	1	Stuffing, bread (prepared)	1/3 cup
Cornbread, 2-inch cube	1	Taco shell, 6 inches	2
Croutons	1 cup	Vanilla wafers	5
French fries	16-25	Waffle, 4 1/2 inch square	1
Muffin, small, plain	1	Pancake, 4 inches across	2
Muffin, small, fruit	1/2	Nabisco® Cheese Crackers with Peanut Butter	3

Sample Menus

The following menus provide a consistent amount of carbohydrates (carbs) while using a variety of food choices. These are sample menus and are not designed to fit a specific diet prescription.

Note: Each breakfast each day is planned to have the same amount of carbohydrates. The same is true for each lunch and each dinner. Your total carbohydrate needs for breakfast may be different than your total carbohydrate needs for lunch or dinner. The key is to have the same amount of carbohydrate at the same time each day.

Menu 1

MEAL	FOOD CHOICE	PORTION	FOOD GROUP	GRAMS OF CARBS
BREAKFAST	Cereal	1 cup	Carb	15 grams
	Milk	1/2 cup	Carb	6 grams
	Juice	1/2 cup	Carb	15 grams
	Toast	1 slice	Carb	15 grams
	Egg	1	Meat	–
	Butter	1 tsp	Fat	–
	Total			51 grams
LUNCH	Turkey sandwich	2 slices bread	Carb	30 grams
		2 oz. turkey	Meat	–
	Low-fat mayo	1 Tbsp.	Fat	–
	Apple	1 large	Carb	30 grams
	Diet drink	Unlimited	–	–
Total			60 grams	
DINNER	Baked fish	4 oz.	Meat	–
	Baked potato	4 oz.	Carb	24 grams
	Peas	1/2 cup	Carb	15 grams
	Margarine	2 tsp.	Fat	–
	Roll	1 oz.	Carb	15 grams
	Low-fat ice cream	3/4 cup	Carb	22 grams
	Total			76 grams

Menu 2

MEAL	FOOD CHOICE	PORTION	FOOD GROUP	GRAMS OF CARBS
BREAKFAST	Cereal	1 cup	Carb	15 grams
	Bagel (small)	1 whole	Carb	30 grams
	Low-fat cream cheese	1 Tbsp.	Fat	—
	Melon	1/3	Carb	15 grams
	Milk	1/2 cup	Carb	6 grams
	Total			51 grams
LUNCH	Grilled chicken salad	3 oz	Meat and non-starchy vegetables	—
	Roll	2 oz	Carb	30 grams
	Frozen low-fat yogurt	1 cup	Carb	30 grams
	Diet drink	Unlimited	—	—
	Total			60 grams
DINNER	Spaghetti	2 cups	Carb	60 grams
	Marinara sauce	3/4 cup	Carb and non-starchy vegetables	15 grams
	Sugar-free iced tea	Unlimited	—	—
	Garden salad	Unlimited	Non-starchy vegetables	—
	Low-fat dressing	1 Tbsp.	Fat	—
	Total			75 grams

Once your daily carbohydrate amount has been established, you and your doctor are better able to make changes with your insulin or diabetes medications and your exercise schedule.

References:

- 1) *Exchange Lists for Meal Planning*. The American Diabetes Association and the American Dietetic Association, revised 1995.
- 2) *Carbohydrate Counting Series*. The American Diabetes Association and the American Dietetic Association, revised 1995.
- 3) *Focus on Food Labeling*. U.S. Food and Drug Administration.