

# Carb counting

and exchange lists



Tools to help you plan your meals

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## Meal planning with diabetes

Healthy eating, exercising regularly, and taking your diabetes medication as directed can help you keep your blood glucose levels within your target range. Carbohydrate counting and the Exchange Lists for Meal Planning are tools you can use to make healthy food choices. Following your meal plan can also help you maintain or reach a healthy weight.

### This booklet will help you understand how to use:

- carbohydrate counting to help manage your blood glucose levels
- the Exchange Lists for Meal Planning



## Why should I count carbohydrate?

Foods contain nutrients, substances that are needed by your body for good health.

The nutrients that contribute calories are carbohydrate, protein, and fat.

Carbohydrate, or carbs, affect your blood glucose level more than protein or fat. That's why counting the number of carbs in the foods

you eat can help you manage your blood glucose levels. Counting carbs can also offer you more variety in your meal plan.

Nutrition experts recommend that about half of the calories you eat come from carbs.





## Counting carbs

If your daily meal plan contains 1,200 calories, about 600 (1/2 of the calories) should be from carbs.

One gram of carbohydrate contains about 4 calories, so a 1,200-calorie meal plan should include 150 carbohydrate grams ( $600 \div 4$ ).

A registered dietitian can help you plan how many carb grams to eat at each meal and snack.

Within your daily carbohydrate limit, you may eat any carbohydrate-rich food. Keep in mind, though, that sugary foods usually have less nutritional value than other carbohydrate-rich foods. Foods such as grains, fruits, vegetables, and low-fat dairy products should be your main carb sources. It's also wise to choose high-fiber and low-fat foods to balance your meal plan. Examples of high-fiber foods are whole-grain breads, fresh fruits and vegetables, and beans.



## Insulin-to-carbohydrate ratios

Using insulin-to-carbohydrate ratios is an advanced method of carbohydrate counting. This method matches your rapid- or short-acting insulin dose to the amount of carbs you eat. Matching your insulin dose to how much carbohydrate you eat can help you keep your blood glucose levels within your goal range. People using intensive insulin or pump therapy often use this method of carbohydrate counting.

Ask your registered dietitian for more information about using insulin-to-carbohydrate ratios to manage your diabetes. If you want to learn more about intensive insulin therapy, ask your healthcare provider for a copy of *Intensive Insulin Therapy*, part of the *Keeping Well With Diabetes* series.



# Nutrition facts and food shopping

All packaged foods have a Nutrition Facts label. The label lists a serving size, the number of calories per serving, and the number of grams of fat, cholesterol, sodium, carbs, and protein per serving. Nutrition experts recommend that you limit your intake of fat, cholesterol, and sodium.

Talk to your registered dietitian about how to use food labels in food shopping.

Check  
serving  
size

Limit  
these  
nutrients

Get  
enough  
of these

## Nutrition Facts

Serving Size 1 cup (228g)  
Servings Per Container 2

### Amounts Per Serving

**Calories** 260    Calories from Fat 120

% Daily Value\*

<b>Total Fat</b> 13g	<b>20%</b>
Saturated Fat 5g	<b>25%</b>
<b>Cholesterol</b> 30mg	<b>10%</b>
<b>Sodium</b> 660mg	<b>28%</b>
<b>Total Carbohydrate</b> 31g	<b>10%</b>
Dietary Fiber 0g	<b>0%</b>
Sugars 5g	

### Protein

5g

Vitamin A 4%	•	Vitamin C 2%
Calcium 15%	•	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

Portion of  
Daily Value,  
5% is low  
20% is High

## How many calories should I eat?

Your calorie needs depend on your gender, activity level, age, and size. To maintain your present weight, you'll need to match your calorie intake with your activity level. To lose weight, you'll need to eat fewer calories than you use in physical activity. To gain weight, you'll need to take in more calories than you burn.

Diabetes experts use the following guidelines to estimate how many calories adults need to eat daily to maintain their weight.

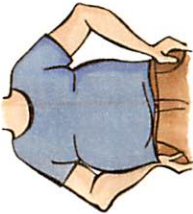


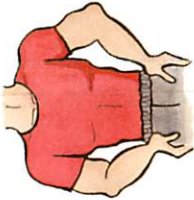
For every pound of weight, calculate:

- 10 calories for a person who is obese, very inactive, or always dieting
- 13 calories for a person older than age 55, an active woman, or an inactive man
- 15 calories for a very active woman or an active man
- 20 calories for a very active man or an athlete



For example, an obese man who weighs 180 pounds would probably need about 1,800 calories per day to maintain his weight. Talk to your healthcare provider before you make any changes in your calorie intake or meal plan.


$$180 \text{ pounds} \times 10 = 1,800 \text{ calories}$$


$$180 \text{ pounds} \times 20 = 3,600 \text{ calories}$$

You and your registered dietitian will work together to determine your calorie level and the types and number of food choices in your daily meal plan.

## The glycemic index

The glycemic index ranks various carbohydrate-rich foods according to how much they affect blood glucose levels. Foods with a low glycemic index affect blood glucose less than foods with a high index. Some people find the index useful in choosing carbohydrate foods that help keep blood glucose from rising too high after meals. Talk to your healthcare provider for more information about the glycemic index.

## Other things to keep in mind



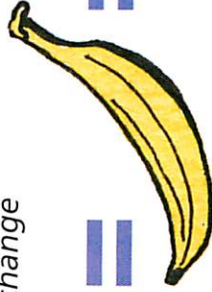
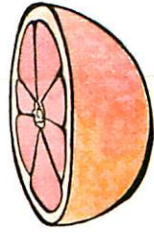
Because diabetes is a major risk factor for cardiovascular disease, medical experts recommend that people with diabetes choose a diet low in saturated fat, cholesterol, and salt. Low-fat meats and dairy products have less saturated fat and cholesterol. Using less salt when cooking and eating may help control high blood pressure.

## Using Exchange Lists for meal planning

Exchange Lists can be used to count carbohydrate as well as calories. Within each list, every food contains about the same number of calories and the same amount of carbohydrate, protein, and fat.

In planning meals using Exchange Lists, you may substitute, or exchange, any food within a list for any other food on that list. Suppose your meal plan calls for 1 serving from the Fruit List at breakfast. You can choose 1/2 grapefruit, 1 small banana, or 1 serving of any other fruit on the list.

### One Fruit Exchange



The Exchange Lists include Starch, Fruit, Milk, Other Carbohydrates, Non-starchy Vegetable, Meat and Meat Substitutes, and Fat groups. There is also a group of “free foods” you can eat in moderate amounts at any time. The Exchange Lists begin on page 12.

The following table shows the number of exchanges recommended for various calorie levels. For example, an 1,800-calorie meal plan includes a total of 7 starch exchanges, 4 fruit exchanges, 3 milk exchanges, 4 non-starchy vegetable exchanges, 7 meat exchanges, and 5 fat exchanges daily.

### *Exchanges & Carb Grams*

	Calories per Day				
	1,200	1,500	1,800	2,000	2,200
<b>Carbohydrate Group</b>	<b>9</b>	<b>12</b>	<b>14</b>	<b>16</b>	<b>18</b>
Starch	5	6	7	8	10
Fruit	2	3	4	4	4
Milk	2	3	3	4	4
<b>Non-starchy Vegetable Group</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>
<b>Meat and Meat Substitute Group</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>7</b>	<b>7</b>
<b>Fat Group</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Total carbohydrate grams</b>	<b>144</b>	<b>191</b>	<b>221</b>	<b>248</b>	<b>278</b>

The last row of the table lists the number of carbohydrate grams recommended for the different calorie levels. For an 1,800-calorie diet, that amount is 221 carb grams or half the calories. Lists to help you count carbs begin on page 34.



## Sample meal plan

Below is a suggested 1,500-calorie meal plan.

### Breakfast

- 1 small orange
- 1 slice whole-wheat toast
- 1 tsp butter or margarine
- 1/4 cup low-fat cottage cheese
- 1 cup 1% milk
- Coffee or tea

### Morning Snack

- 1 small banana

### Lunch

- 2 oz chicken
- 1/2 cup chopped celery
- 1 tsp mayonnaise
- 2 slices rye bread
- 1 sliced tomato
- Lettuce
- Sugar-free soft drink

### Afternoon Snack

- One cup fat-free *light* yogurt

### Dinner

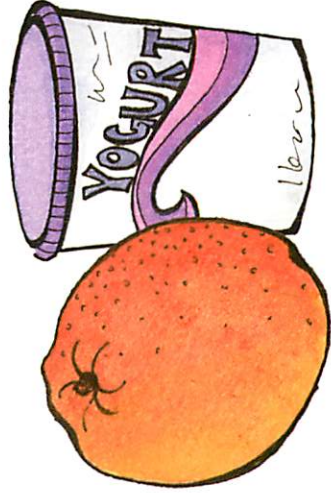
- 3 oz roast beef
- 1 medium potato
- 1 cup broccoli
- 1 1/4 cup strawberries
- 1 tsp butter or margarine

Tossed salad (1 cup

- raw vegetables)
- 2 Tbsp reduced-fat salad dressing

### Evening Snack

- 3 graham crackers (2 1/2" squares)
- 1 cup 1% milk
- 17 small grapes



## Food Exchange Lists\*

The following pages contain calorie and carb counting lists and the Exchange Lists for Meal Planning. Both lists can be helpful if you use carbohydrate counting or the exchange system in planning your meals. You might find it useful to keep this booklet handy and refer to it often.

### Starch List

**One starch exchange equals 15 grams of carbohydrate, 3 grams of protein, 0 to 1 grams of fat, and 80 calories.**

#### Bread

Bagel, 4 oz	1/4 (1 oz)
Bread, reduced-calorie	2 slices (1.5 oz)
Bread, white, whole-wheat, pumpernickel, rye	1 slice (1 oz)
Bread sticks, crisp, 4 in. x 1/2 in.	4 (2/3 oz)
English muffin	1/2
Hot dog bun or hamburger bun	1/2 (1 oz)
Naan, 8 in. x 2 in.	1/4
Pancake, 4 in. across, 1/4 in. thick	1
Pita, 6 in. across	1/2
Roll, plain, small	1 (1 oz)

\* The Exchange Lists are the basis of a meal planning system designed by a committee of the American Diabetes Association and The American Dietetic Association. While designed primarily for people with diabetes and others who must follow special diets, the Exchange Lists are based on principles of good nutrition that apply to everyone. Copyright © 2003 by the American Diabetes Association and The American Dietetic Association.

Raisin bread, unfrosted  
Tortilla, corn, 6 in. across  
Tortilla, flour, 6 in. across  
Tortilla, flour, 10 in. across  
Waffle, 4 in. square or across,  
reduced-fat

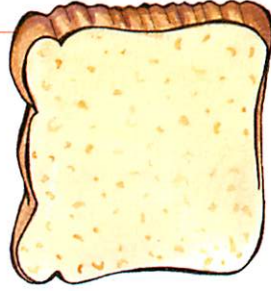
1 slice (1 oz)

1

1

1/3

1



## Cereals And Grains

Bran cereals  
Bulgur  
Cereals, cooked  
Cereals, unsweetened,  
ready-to-eat

1/2 cup

1/2 cup

1/2 cup

3/4 cup

Cornmeal (dry)

3 Tbsp

Couscous

1/3 cup

Flour (dry)

3 Tbsp

Granola, low-fat

1/4 cup

Grape-Nuts®

1/4 cup

Grits

1/2 cup

Kasha

1/2 cup

Millet

1/3 cup

Muesli

1/4 cup

Oats

1/2 cup

Pasta

1/3 cup

Puffed cereal

1 1/2 cups

Rice, white or brown

1/3 cup

Shredded Wheat®

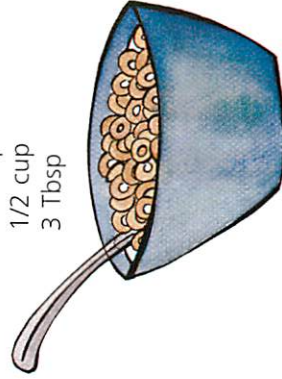
1/2 cup

Sugar-frosted cereal

1/2 cup

Wheat germ

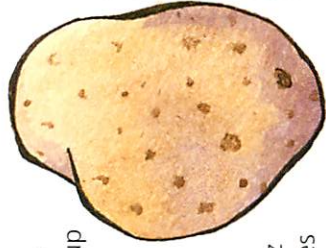
3 Tbsp



## Starch List (continued)

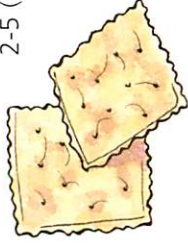
### Starchy Vegetables

Baked beans	1/3 cup
Corn	1/2 cup
Corn on cob, large	1/2 cob (5 oz)
Mixed vegetables	
with corn, peas or pasta	1 cup
Peas, green	1/2 cup
Plantain	1/2 cup
Potato, boiled	1/2 cup or 1/2 med (3 oz)
Potato, baked with skin	1/4 large (3 oz)
Potato, mashed	1/2 cup
Squash, winter	
(acorn, butternut, pumpkin)	1 cup
Yam, sweet potato, plain	1/2 cup



### Crackers And Snacks

Animal crackers	8
Graham crackers, 2 1/2 in. square	3
Matzoh	3/4 oz
Melba toast	4 slices
Oyster crackers	24
Popcorn (popped, no fat added or low-fat microwave)	3 cups
Pretzels	3/4 oz
Rice cakes, 4 in. across	2
Saltine-type crackers	6
Snack chips, fat-free or baked (tortilla, potato)	15-20 (3/4 oz)
Whole-wheat crackers, no fat added	2-5 (3/4 oz)





## Beans, Peas, And Lentils

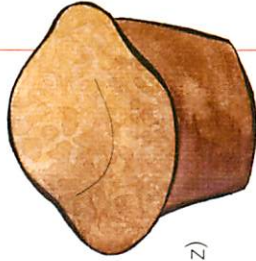
(Count as 1 starch exchange, plus 1 very lean meat exchange.)

Beans and peas (garbanzo, pinto, kidney, white, split, black-eyed)	1/2 cup
Lima beans	2/3 cup
Lentils	1/2 cup
Miso**	3 Tbsp

## Starchy Foods Prepared With Fat

(Count as 1 starch exchange, plus 1 fat exchange.)

Biscuit, 2 1/2 in. across	1
Chow mein noodles	1/2 cup
Corn bread, 2 in. cube	1 (2 oz)
Crackers, round butter type	6
Croutons	1 cup
French-fried potatoes (oven baked)†	1 cup (2 oz)
Granola	1/4 cup
Hummus	1/3 cup
Muffin, 5 oz	1/5 (1 oz)
Popcorn, microwaved	3 cups
Sandwich crackers, cheese or peanut butter filling	3
Snack chips (potato, tortilla)	9-13 (3/4 oz)
Stuffing, bread (prepared)	1/3 cup
Taco shell, 6 in. across	2
Waffle, 4 in. square or across	1
Whole-wheat crackers, fat added	4-6 (1 oz)



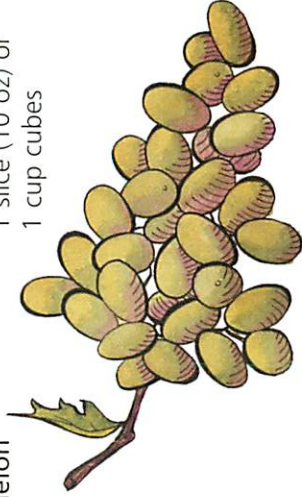
† See also the Fast Foods list on page 32.  
\*\* .400 mg or more of sodium per exchange.

## Fruit List

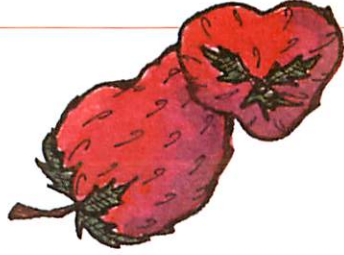
One fruit exchange equals 15 grams of carbohydrate and 60 calories. The weight includes skin, core, seeds, and rind.

### Fruit

Apple, unpeeled, small	1 (4 oz)
Applesauce, unsweetened	1/2 cup
Apples, dried	4 rings
Apricots, fresh	4 whole (5.5 oz)
Apricots, dried	8 halves
Apricots, canned	1/2 cup
Banana, small	1 (4 oz)
Blackberries	3/4 cup
Blueberries	3/4 cup
Cantaloupe, small	1/3 melon (11 oz) or 1 cup cubes
Cherries, sweet, fresh	12 (3 oz)
Cherries, sweet, canned	1/2 cup
Dates	3
Figs, fresh	1 1/2 large or 2 medium (3.5 oz)
Figs, dried	1 1/2
Fruit cocktail	1/2 cup
Grapefruit, large	1/2 (11 oz)
Grapefruit sections, canned	3/4 cup
Grapes, small	17 (3 oz)
Honeydew melon	1 slice (10 oz) or 1 cup cubes



Kiwi	1 (3.5 oz)
Mandarin oranges, canned	3/4 cup
Mango, small	1/2 fruit (5.5 oz) or 1/2 cup
Nectarine, small	1 (5 oz)
Orange, small	1 (6.5 oz)
Papaya	1/2 fruit (8 oz) or 1 cup cubes
Peach, medium, fresh	1 (4 oz)
Peaches, canned	1/2 cup
Pear, large, fresh	1/2 (4 oz)
Pears, canned	1/2 cup
Pineapple, fresh	3/4 cup
Pineapple, canned	1/2 cup
Plums, small	2 (5 oz)
Plums, canned	1/2 cup
Plums, dried (prunes)	3
Raisins	2 Tbsp
Raspberries	1 cup
Strawberries	1 1/4 cup whole berries
Tangerines, small	2 (8 oz)
Watermelon	1 slice (13.5 oz) or 1 1/4 cup cubes



## Fruit Juice, Unsweetened

Apple juice/cider	1/2 cup
Cranberry juice cocktail	1/3 cup
Cranberry juice cocktail, reduced-calorie	1 cup
Fruit juice blends, 100% juice	1/3 cup
Grape juice	1/3 cup
Grapefruit juice	1/2 cup
Orange juice	1/2 cup
Pineapple juice	1/2 cup
Prune juice	1/3 cup

## Milk List

One milk exchange equals 12 grams of carbohydrate and 8 grams of protein.

### Fat-Free And Low-Fat Milk

(0 to 3 grams fat per serving, 90 calories)

Fat-free milk	1 cup
1/2% milk	1 cup
1% milk	1 cup
Buttermilk, low-fat or fat-free	1 cup
Evaporated fat-free milk	1/2 cup
Dry milk, fat-free	1/3 cup dry
Soy milk, low-fat or fat-free	1 cup
Yogurt, plain, fat-free	2/3 cup (6 oz)
Yogurt, flavored, fat-free sweetened with nonnutritive sweetener and fructose	2/3 cup (6 oz)

### Reduced-fat

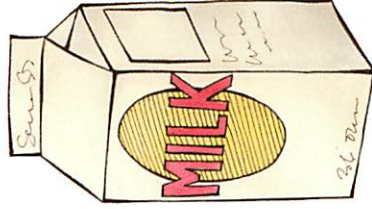
(5 grams fat per serving, 120 calories)

2% milk	1 cup
Soy milk	1 cup
Plain low-fat yogurt	3/4 cup
Sweet acidophilus milk	1 cup

### Whole Milk

(8 grams fat per serving, 150 calories)

Whole milk	1 cup
Evaporated whole milk	1/2 cup
Goat's milk	1 cup
Kefir	1 cup
Yogurt, plain (made from whole milk)	3/4 cup





## Sweets, Desserts and Other Carbohydrates List

### One exchange equals 15 grams of carbohydrate (carb), or 1 starch, or 1 fruit, or 1 milk.

Food	Serving Size	Exchanges Per Serving
Angel food cake, unfrosted	1/12th cake	2 carb
Brownie, small, unfrosted	2 in. square	1 carb, 1 fat
Cake, unfrosted	2 in. square	1 carb, 1 fat
Cake, frosted	2 in. square	2 carb, 1 fat
Cookies, sugar-free (1 oz)	3 sm or 1 lg	1 carb, 1-2 fat
Cookie or sandwich cookie with creme filling	2 small (2/3 oz)	1 carb, 1 fat
Cranberry sauce, jellied	1/4 cup	1.5 carb
Cupcake, frosted	1 small (2 oz)	2 carb, 1 fat
Doughnut, plain cake, medium	1 (1.5 oz)	1.5 carb, 2 fat
Doughnut, glazed, 3 3/4 in. across	1 (2 oz)	2 carb, 2 fat
Energy, sport or breakfast bar	1 bar (1 1/3 oz)	1.5 carb, 0-1 fat
Energy, sport or breakfast bar	1 bar (2 oz)	2 carb, 1 fat
Fruit cobbler	1/2 cup (3.5 oz)	3 carb, 1 fat
Fruit juice bars, frozen, 100% juice	1 bar (3 oz)	1 carb
Fruit snacks, chewy (pureed fruit concentrate)	1 roll (3/4 oz)	1 carb
Fruit spreads, 100% fruit	1.5 Tbsp	1 carb
Gelatin, regular	1/2 cup	1 carb
Gingersnaps	3 1 carb	
Granola or snack bar, regular or low-fat	1 bar (1 oz)	1.5 carb
Honey	1 Tbsp	1 carb
Ice cream	1/2 cup	1 carb, 2 fat
Ice cream, light	1/2 cup	1 carb, 1 fat
Ice cream, low-fat	1/2 cup	1.5 carb
Ice cream, fat-free, no sugar added	1/2 cup	1 carb

## Other Carbohydrates (continued)

Food	Serving Size	Exchanges Per Serving
Jam or jelly, regular	1 Tbsp	1 carb
Milk, chocolate, whole	1 cup	2 carb, 1 fat
Pie, fruit, 2 crusts, commercially prepared pie	1/6 of 8 in. pie	3 carb, 2 fat
Pie, pumpkin or custard, commercially prepared pie	1/8 of 8 in. pie	2 carb, 2 fat
Pudding, regular (made with low-fat milk)	1/2 cup	2 carb
Pudding, sugar-free or sugar-free & fat-free (made with fat-free milk)	1/2 cup	1 carb
Reduced-calorie meal replacement (shake)	1 can (10-11 oz)	1.5 carb, 0-1 fat
Rice milk, low-fat or fat-free, plain	1 cup	1 carb
Rice milk, low-fat, flavored	1 cup	1.5 carb
Salad dressing, fat-free**	1/4 cup	1 carb
Sherbet, sorbet	1/2 cup	2 carb
Spaghetti or pasta sauce, canned**	1/2 cup	1 carb, 1 fat
Sports drinks	8 oz (1 cup)	1 carb
Sugar	1 Tbsp	1 carb
Sweet roll or Danish	1 (2.5 oz)	2.5 carb, 2 fat
Syrup, light	2 Tbsp	1 carb
Syrup, regular	1 Tbsp	1 carb
Syrup, regular	1/4 cup	4 carb
Vanilla wafers	5	1 carb, 1 fat
Yogurt, frozen	1/2 cup	1 carb, 0-1 fat
Yogurt, frozen, fat-free	1/3 cup	1 carb
Yogurt, low-fat with fruit	1 cup	3 carb, 0-1 fat

\*\* 400 mg or more of sodium per exchange.

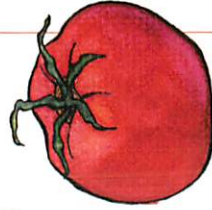
## Non-starchy Vegetable List

One vegetable exchange equals 5 grams of carbohydrate, 2 grams of protein, 0 grams of fat, and 25 calories.

*In general, one vegetable exchange is 1/2 cup cooked vegetables or vegetable juice or 1 cup of raw vegetables.*

Artichoke  
Artichoke hearts  
Asparagus  
Beans  
(green, wax, Italian)  
Bean sprouts  
Beets  
Broccoli  
Brussels sprouts  
Cabbage  
Carrots  
Cauliflower  
Celery  
Cucumber  
Eggplant  
Green onions  
or scallions  
Greens (collard, kale,  
mustard, turnip)  
Kohlrabi  
Leeks

Mixed vegetables (without  
corn, peas, or pasta)  
Mushrooms  
Okra  
Onions  
Pea pods  
Peppers (all varieties)  
Radishes  
Salad greens  
(endive, escarole, lettuce,  
romaine, spinach)  
Sauerkraut\*\*  
Spinach  
Summer squash  
Tomato  
Tomatoes, canned  
Tomato sauce\*\*  
Tomato/vegetable juice\*\*  
Turnips  
Water chestnuts  
Watercress  
Zucchini



\*\* 400 mg or more of sodium per exchange.

## Meat And Meat Substitutes List

### Very Lean Meat And Substitutes List

**One exchange equals 0 grams of carbohydrate, 7 grams of protein, 0 to 1 grams of fat, and 35 calories.**

*One very lean meat exchange is equal to any one of the following items:*

**Poultry:** Chicken or turkey (white meat, no skin), Cornish hen (no skin) 1 oz

**Fish:** Fresh or frozen cod, flounder, haddock, lox (smoked salmon)\*\*; halibut, trout; tuna fresh or canned in water 1 oz

**Shellfish:** Clams, crab, lobster, scallops, shrimp, imitation shellfish 1 oz

**Game:** Duck or pheasant (no skin), venison, buffalo, ostrich 1 oz

**Cheese with 1 gram or less of fat per ounce:**

Fat-free or low-fat cottage cheese 1/4 cup

Fat-free cheese 1 oz

**Other:**

Processed sandwich meats with 1 gram or less of fat per ounce, such as deli thin, shaved meats, chipped beef\*\*; turkey ham

Egg whites 1 oz

Egg substitutes, plain 2

Hot dogs with 1 gram or less of fat per ounce\*\* 1/4 cup

Kidney (high in cholesterol) 1 oz

Sausage with 1 gram or less of fat per ounce 1 oz

**Count as one very lean meat and one starch exchange.**

**Beans, peas, lentils (cooked)**

1/2 cup

\*\* 400 mg or more of sodium per exchange.

## Lean Meat And Substitutes List

**One exchange equals 0 grams of carbohydrate, 7 grams of protein, 3 grams of fat, and 55 calories.**

*One lean meat exchange is equal to any one of the following items:*

<b>Beef:</b> USDA Select or Choice grades of lean beef trimmed of fat, such as round, sirloin, and flank steak; tenderloin; roast (rib, chuck, rump); steak (T-bone, porterhouse, cubed); ground round	1 oz
<b>Pork:</b> Lean pork, such as fresh ham; canned, cured, or boiled ham; Canadian bacon**;	
tenderloin, center loin chop	1 oz
<b>Lamb:</b> Roast, chop, leg	1 oz
<b>Veal:</b> Lean chop, roast	1 oz
<b>Poultry:</b> Chicken, turkey (dark meat, no skin), chicken (white meat with skin), domestic duck or goose (well-drained of fat, no skin)	1 oz
<b>Fish:</b>	
Herring (uncreamed or smoked)	1 oz
Oysters	6 medium
Salmon (fresh or canned), catfish	1 oz
Sardines (canned)	2 medium
Tuna (canned in oil, drained)	1 oz
<b>Game:</b> Goose (no skin), rabbit	1 oz
<b>Cheese:</b>	
4.5%-fat cottage cheese	1/4 cup
Grated Parmesan	2 Tbsp
Cheeses with 3 grams or less fat per ounce	1 oz
<b>Other:</b>	
Hot dogs with 3 grams or less fat per ounce**	1.5 oz
Processed sandwich meat with 3 grams or less fat per ounce, (e.g., turkey pastrami or kielbasa)	1 oz
Liver, heart (high in cholesterol)	1 oz



## Medium-Fat Meat And Substitutes List

One exchange equals 0 grams of carbohydrate, 7 grams of protein, 5 grams of fat, and 75 calories.

One *medium-fat* meat exchange is equal to any one of the following items:

**Beef:** Most beef products fall into this category (ground beef, meatloaf, corned beef, short ribs, Prime grades of meat trimmed of fat, such as prime rib) 1 oz

**Pork:** Top loin, chop, Boston butt, cutlet 1 oz

**Lamb:** Rib roast, ground 1 oz

**Veal:** Cutlet (ground or cubed, unbreaded) 1 oz

**Poultry:** Chicken (dark meat, with skin), ground turkey or ground chicken, fried chicken (with skin) 1 oz

**Fish:** Any fried fish product 1 oz

**Cheese:** With 5 grams or less of fat per ounce:

Feta 1 oz

Mozzarella 1 oz

Ricotta, 2 oz 1/4 cup

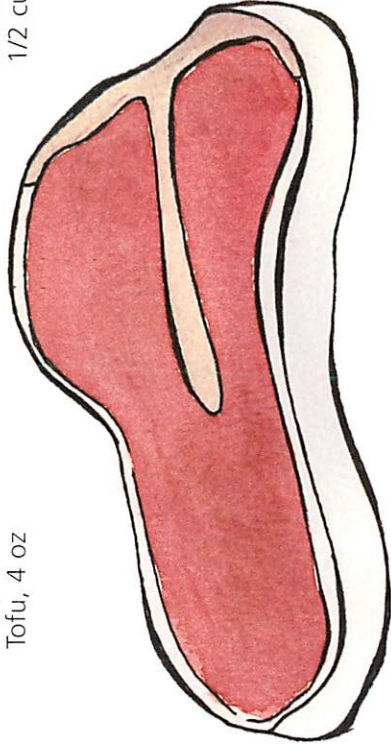
**Other:**

Egg (high in cholesterol, limit to 3 per week) 1

Sausage with 5 grams or less of fat per ounce 1 oz

Tempeh 1/4 cup

Tofu, 4 oz 1/2 cup



## High-Fat Meat And Substitutes List

**One exchange equals 0 grams of carbohydrate, 7 grams of protein, 8 grams of fat, and 100 calories.**

**Remember these items are high in saturated fat, cholesterol, and calories and may raise blood cholesterol levels if eaten on a regular basis.**

*One high-fat meat exchange is equal to any one of the following items:*

Pork: Spareribs, ground pork, pork sausage      1 oz

Cheese: All regular cheeses, such as American<sup>\*\*</sup>,  
Cheddar, Monterey Jack, Swiss      1 oz

Other: Processed sandwich meats with 8 grams  
or less of fat per ounce, such as bologna,  
pimento loaf, salami      1 oz  
Sausage, such as bratwurst, Italian,  
knockwurst, Polish, smoked      1 oz  
Hot dog (turkey or chicken)<sup>\*\*</sup>      1 (10/lb)  
Bacon      3 slices (20 slices/lb)  
Peanut butter (contains unsaturated fat)      1 Tbsp

**Count as one high-fat meat plus one fat exchange:**

Hot dog (beef, pork, or combination)<sup>\*\*</sup>      1 (10/lb)

<sup>\*\*</sup>400 mg or more of sodium per exchange.

## Fat List

### Monounsaturated Fats List

**One fat exchange equals 5 grams of fat and 45 calories.**

Avocado, medium	2 Tbsp (1 oz)
Oil (canola, olive, peanut)	1 tsp
Olives: ripe (black)	8 large
green, stuffed**	10 large
Nuts:	
almonds, cashews	6 nuts
mixed (50% peanuts)	6 nuts
peanuts	10 nuts
pecans	4 halves
Peanut butter, smooth or crunchy	1/2 Tbsp
Sesame seeds	1 Tbsp
Tahini or sesame paste	2 tsp

### Polyunsaturated Fats List

**One fat exchange equals 5 grams of fat and 45 calories.**

Margarine: stick, tub, or squeeze lower-fat spread (30% to 50% vegetable oil)	1 tsp
Mayonnaise: regular	1 Tbsp
reduced-fat	1 tsp
Nuts, walnuts, English	1 Tbsp
Oil (corn, safflower, soybean)	1 Tbsp
Salad dressing	4 halves
regular**	1 tsp
reduced-fat	1 Tbsp
Miracle Whip Salad Dressing®	2 Tbsp
regular	2 tsp
reduced-fat	1 Tbsp
Seeds: pumpkin, sunflower	1 Tbsp

## Saturated Fats List†

One fat exchange equals 5 grams of fat and 45 calories.

Bacon, cooked 1 slice (20 slices/lb)

Bacon, grease 1 tsp

Butter: stick 1 tsp

whipped 2 tsp

reduced-fat 1 Tbsp

Chitterlings, boiled 2 Tbsp (0.5 oz)

Coconut, sweetened, shredded 2 Tbsp

Coconut milk 1 Tbsp

Cream, half and half 2 Tbsp

Cream cheese

regular 1 Tbsp (0.5 oz)

reduced-fat 1 1/2 Tbsp (3/4 oz)

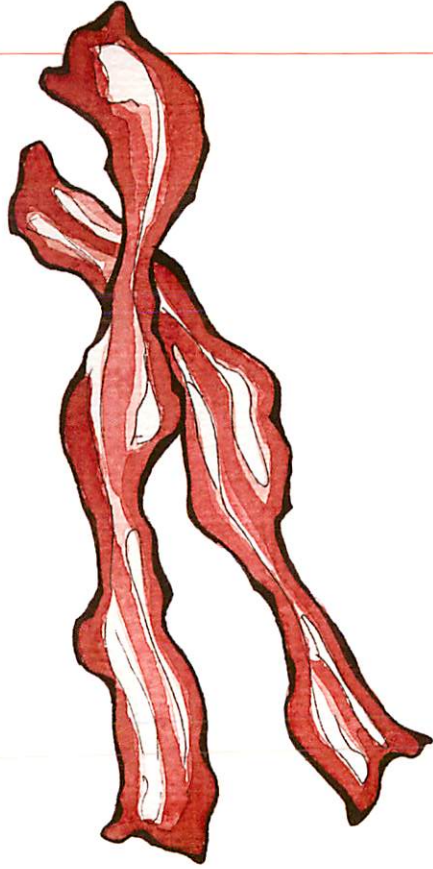
Fatback or salt pork, see below †\*\*

Shortening or lard 1 tsp

Sour cream

regular 2 Tbsp

reduced-fat 3 Tbsp



† Saturated fats can raise blood cholesterol levels if eaten on a regular basis.

‡ Use a piece 1 in. x 1 in. x 1/4 in. if you plan to eat the fatback cooked with vegetables.

Use a piece 2 in. x 1 in. x 1/2 in. when eating only the vegetables with the fatback removed.

\*\* 400 mg or more of sodium per exchange.

## Free Foods List

A *free food* is any food or drink that contains less than 20 calories or less than or equal to 5 grams of carbohydrate per serving. Foods with a serving size listed should be limited to 3 servings per day. Be sure to spread them out throughout the day. If you eat all 3 servings at one time, it could raise your blood glucose level. Foods listed without a serving size can be eaten whenever you like.

## Fat-Free Or Reduced-Fat Foods

Cream cheese, fat-free, 1/2 oz	1 Tbsp
Creamers, nondairy, liquid	1 Tbsp
Creamers, nondairy, powdered	2 tsp
Mayonnaise, fat-free	1 Tbsp
Mayonnaise, reduced-fat	1 tsp
Margarine spread, fat-free	4 Tbsp
Margarine spread, reduced-fat	1 tsp
Miracle Whip®, fat-free	1 Tbsp
Miracle Whip®, reduced-fat	1 tsp
Nonstick cooking spray	
Salad dressing, fat-free or low-fat	1 Tbsp
Salad dressing, fat-free, Italian	2 Tbsp
Sour cream, fat-free, reduced-fat	1 Tbsp
Whipped topping, regular	1 Tbsp
Whipped topping, light or fat-free	2 Tbsp

## Sugar-Free Foods

Candy, hard, sugar-free	1 candy
Gelatin dessert, sugar-free	
Gelatin, unflavored	
Gum, sugar-free	



Jam or jelly, light  
Sugar substitutes†  
Syrup, sugar-free

2 tsp  
2 Tbsp

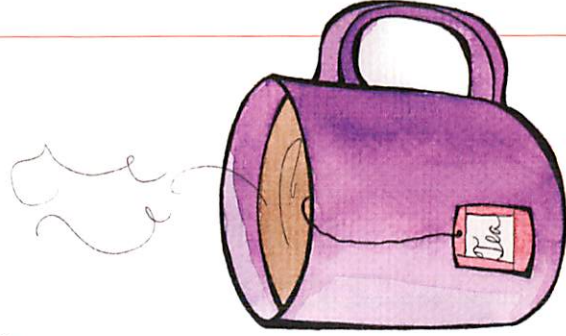
## Condiments

Catsup, 1 Tbsp  
Horseradish  
Lemon juice  
Lime juice  
Mustard  
Pickle relish, 1 Tbsp  
Pickles, dill, 1.5 medium\*\*  
Pickles, sweet (bread and butter), 2 slices  
Pickles, sweet (gherkin) 3/4 oz

Soy sauce, regular or light, 1 Tbsp\*\*  
Salsa, 1/4 cup  
Taco sauce, 1 Tbsp  
Vinegar  
Yogurt, 2 Tbsp

## Drinks

Bouillon, broth, consomme\*\*  
Bouillon or broth, low-sodium  
Carbonated or mineral water  
Club soda  
Cocoa powder, unsweetened, 1 Tbsp  
Coffee  
Diet soft drinks, sugar-free  
Drink mixes, sugar-free  
Tea  
Tonic water, sugar-free



## Seasonings

Be careful with seasonings that contain sodium or are salts, such as garlic or celery salt, and lemon pepper.

Flavoring extracts  
Garlic  
Herbs, fresh or dried  
Pimento  
Spices  
Tabasco® or hot pepper sauce  
Wine, used in cooking  
Worcestershire sauce

\*\* 400 mg or more of sodium per exchange.

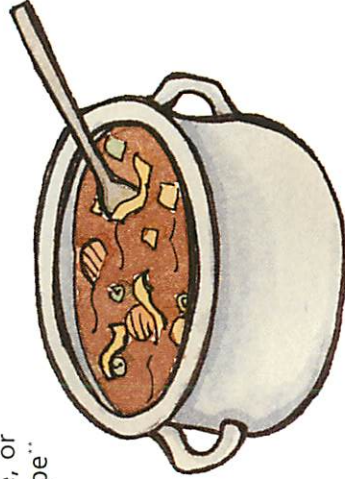
† Sugar substitutes, alternatives, or replacements that are approved by the Food and Drug Administration (FDA) are safe to use. Common brand names include: Equal® (aspartame), Sprinkle Sweet® (saccharin), Sweet One® (acesulfame K), Sweet-10® (saccharin), Sugar Twin® (saccharin), Sweet 'N Low® (saccharin), Splenda® (sucralose)

## Combination Foods List

Many of the foods we eat are mixed together in various combinations. These combination foods do not fit into any one exchange list. Often it is hard to tell what is in a casserole dish or a prepared food item. This is a list of exchanges for some typical combination foods. This list will help you fit these foods into your meal plan. Ask your dietitian for information about any other combination foods you would like to eat.

### Soups

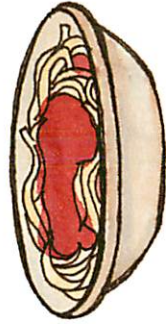
	Serving Size	Exchanges Per Serving
Bean**	1 cup	1 carb 1 very lean meat
Cream, made with water**	1 cup (8 oz)	1 carb, 1 fat
Instant**	6 oz	1 carb
Instant, with beans/lentils**	8 oz	2.5 carbs 1 very lean meat
Split pea, made with water**	1/2 cup (4 oz)	1 carb
Tomato, made with water**	1 cup (8 oz)	1 carb
Vegetable beef, chicken noodle, or other broth-type**	1 cup (8 oz)	1 carb



\*\* 400 mg or more of sodium per exchange.

## Entrees

	Serving Size	Exchanges Per Serving
Chow mein, without noodles or rice**	2 cups (16 oz)	1 carb 2 lean meats
Tuna or chicken salad	1/2 cup (3.5 oz)	0.5 carb, 1 fat 2 lean meats
Tuna noodle casserole, lasagna, spaghetti with meatballs, chili with beans, macaroni and cheese**	1 cup (8 oz)	2 carbs 2 medium-fat meats

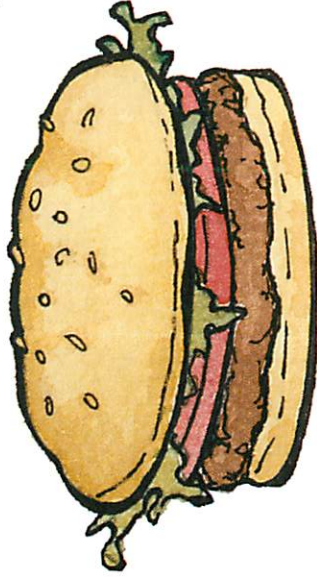


## Frozen Entrees & Meals

	Serving Size	Exchanges Per Serving
Dinner-type meal**	14 to 17 oz	3 carbs, 3 fats 3 medium-fat meats
Meatless burger, soy base	3 oz	0.5 carb 2 lean meats
Meatless burger, vegetable and starch base	3 oz	1 carb 1 lean meat
Pizza, cheese, thin crust**	1/4 of 12 inch pie (6 oz)	2 carbs 2 medium-fat meats 1 fat
Pizza, meat topping, thin crust**	1/4 of 12 inch pie (6 oz)	2 carbs 2 medium-fat meats 2 fats
Pot Pie**	1 (7 oz)	2.5 carbs, 3 fats 1 medium-fat meat
Entree or meal, with less than 340 calories**	about 8 to 11 oz	2 to 3 carbs 1 to 2 meats

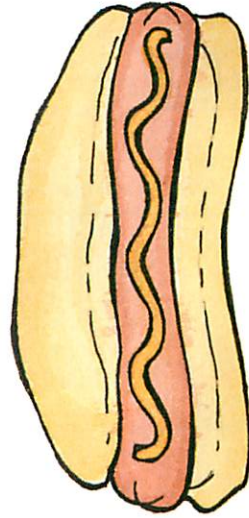
## Fast Foods\* List

	Serving Size	Exchanges Per Serving
Burrito with beef**	1 (5 to 7 oz)	3 carbs, 1 fat 1 medium-fat meat
Chicken nuggets**	6	1 carb, 1 fat 2 medium-fat meats
Chicken breast and wing, breaded and fried**	1 each	1 carb, 2 fat 4 medium-fat meats
Chicken sandwich, grilled**	1	2 carbs 3 very lean meats
Chicken wings, hot**	6 (5 oz)	1 carb, 4 fats 3 medium-fat meats
Fish sandwich, with tartar sauce**	1	3 carbs, 3 fats 1 medium-fat meat
French fries**	1 medium serving (5 oz)	4 carbs 4 fats
Hamburger, regular	1	2 carbs 2 medium-fat meats
Hamburger, large**	1	2 carbs, 1 fat 3 medium-fat meats



\* Ask at your fast-food restaurant for nutrition information about your favorite fast foods or check web sites.

\*\* 400 mg or more of sodium per exchange.



Hot dog, with bun**	1	2 carbs, 1 fat 1 high-fat meat
Individual pan pizza**	1	5 carbs, 3 fats 3 medium-fat meats
Pizza, cheese, thin crust**	1/4 of 12 inch pie (6 oz)	2.5 carbs 2 medium-fat meats
Pizza, meat, thin crust**	1/4 of 12 inch pie (6 oz)	2.5 carbs 2 medium-fat meats 1 fat
Soft-serve cone	1 small (5 oz)	2.5 carbs, 1 fat
Submarine sandwich**	1 sub (6 in)	3 carbs, 1 vegetable 2 medium-fat meats 1 fat
Submarine sandwich, less than 6 grams of fat**	1 sub (6 in)	2.5 carbs 2 lean meats
Taco, hard or soft shell**	1 (3 to 3.5 oz)	1 carb, 1 fat 1 medium-fat meat



# Carbohydrate Lists\*

## Grain Products



	Measure	Calories	Carbs (g)
Bagel	1	195	38
Biscuit	1	212	27
Breads			
Boston brown	1 slice	88	20
cracked wheat	1 slice	65	12
French	1 slice	81	15
Italian	1 slice	81	15
raisin	1 slice	71	14
rye	1 slice	83	16
white	1 slice	67	12
whole wheat	1 slice	69	13
pita	2 oz	130	30
Bread crumbs	1/4 cup	100	19
Cereals			
bran flakes	1 cup	100	22
bran flakes			
w/raisins	1 cup	190	46
corn flakes	1 cup	102	24
corn, puffed	1 cup	80	16
corn, frosted	1 cup	149	34
oat cereal	1 cup	83	17
rice, puffed	1 cup	56	13
wheat, puffed	1 cup	51	11
wheat flakes	1 cup	110	24

	Measure	Calories	Carbs (g)
wheat, shredded	1 cup	85	21
Crackers			
Graham	2	60	11
saline	4	52	8
rye wafers	2	74	18
Danish pastry	1	266	26
Doughnut	1	198	23
Muffin			
corn	1 sm	174	29
English	1	134	26
Pancakes			
homemade	4"	86	11
from mix	4"	74	14
Pasta			
macaroni	1 cup	197	40
noodles	1 cup	213	40
spaghetti	1 cup	197	40
Popcorn,			
popped w/oil	1 cup	55	6
Pretzel, hard	1 oz	108	22
Rice			
brown	1 cup	216	45
enriched	1 cup	205	45
instant	1 cup	161	35
Rolls			
dinner	1	85	14
hamburger			
or hot dog	1	123	22
hard	1	140	25
Waffles			
homemade	1-7"	218	25
from mix	1-7"	218	26
Wheat germ	1/4 cup	111	14

\* Calculations from: Pennington, Jean A. Bowes & Church Food Values of Portions Commonly Used. Lippincott Williams & Wilkins. © 1998. The Food Processor® Nutrition Analysis and Fitness Software. Version 7.7. ESHA Research, Inc.

## Vegetables

	Measure	Calories	Carbs (g)
Artichoke	1	150	34
Asparagus	1 cup	44	8
Beans			
green	1 cup	40	9
lima	1 cup	216	39
red kidney	1 cup	225	40
yellow	1 cup	255	45
Beets	1 cup	74	17
Beet greens	1 cup	38	8
Broccoli	1 cup	44	8
Brussel sprouts	1 cup	60	14
Cabbage			
boiled	1 cup	34	7
raw	1 cup	18	4
Carrots			
cooked	1 cup	70	16
raw	1 med	31	7
Cauliflower,			
boiled	1 cup	28	5
Celery			
boiled, diced	1 cup	28	6
raw, stalk	1	6	3
Collards	1 cup	35	8
Corn, yellow			
on the cob	1 ear	83	19
canned	1 cup	132	30
Cucumber	1/2 cup	7	1
Dandelion			
greens	1 cup	34	7
Eggplant,			
boiled	1 cup	26	6
Kale	1 cup	42	7
Lentils	1 cup	230	40

	Measure	Calories	Carbs (g)
Lettuce			
iceberg	1 cup	7	1
leaf	1 cup	10	2
Mushrooms	1 cup	42	8
Mustard greens	1 cup	20	3
Okra, pods	8	27	6
Onions			
cooked	1/2 cup	46	11
raw	1/2 cup	30	7
Parsnips	1/2 cup	126	30
Peas			
canned	1 cup	118	21
fresh	1 cup	118	21
frozen	1 cup	124	23
Peppers			
green, sweet	1 cup	28	6
hot chili, raw	1	18	4
Potatoes			
baked	1	220	51
boiled	1	117	27
French fried	20	200	31
mashed, w/milk	1 cup	162	37
scalloped	1 cup	210	26
Radishes	5	8	0
Sauerkraut	1 cup	44	10
Soybeans	1 cup	298	17
Spinach	1 cup	42	7
Squash			
summer, boiled	1 cup	28	7
winter, mashed	1 cup	80	21
Sweet potatoes			
baked	1	117	28
candied	1 cup	268	55



## Tomatoes

canned	1 cup	32	7
raw	1	26	6
Tomato juice	1 cup	40	10
Tomato sauce	1 cup	74	18
Turnips	1 cup	28	8
Turnip greens	1 cup	28	6
Vegetables, mixed	1 cup	107	24

Plum	1 med	36	9
Prunes, dried	4	80	21
Raisins	1 cup	435	112
Raspberries	1 cup	60	14
Strawberries	1 cup	45	11
Tangerine	1 med	37	9
Watermelon	1 cup	50	12
Fruit juices			

apple	1 cup	117	29
grapefruit	1 cup	95	23
orange	1 cup	112	26

Measure  
Calories (g)  
Carbs (g)

## Fruits



Apple  
Applesauce,  
no sugar

Apricots

Avocado

Banana

Blackberries

Blueberries

Cantaloupe

Cherries, fresh

Dates,

pitted, dried

Figs

Grapefruit

Grapes

Orange

Papaya

Peach

Pear

Pineapple

1 med	81	21
1 cup	104	28
3 med	51	12
1 med	306	12
1 med	105	27
1 cup	74	18
1 cup	80	21
1 cup	56	13
10	34	8
5	114	31
1	37	10
1/2 med	40	10
10	35	9
1 med	60	15
1 med	119	30
1 med	37	10
1 med	98	25
1 cup	76	19

## Dairy Products

Butter or  
Margarine  
Cheese

American

cheddar

cottage, 2%

cream

Swiss

Cream

light

heavy

sour

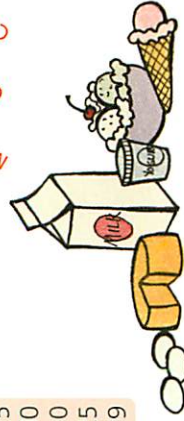
Ice Cream,

vanilla

Ice Milk

1 Tbsp	108	0
1 oz	105	0
1 oz	114	0
1 cup	203	8
1 oz	99	1
1 oz	107	1
1 Tbsp	29	1
1 Tbsp	51	0
1 cup	493	10
1 Tbsp	26	1
1 cup	265	32
1 cup	184	30

Measure  
Calories (g)  
Carbs (g)



	Measure	Calories	Carbs (g)	Eggs	Calories	Carbs (g)
<b>Milk</b>				whole	1	75
buttermilk	1 cup	99	12	white only	1	17
chocolate, 2% evaporated	1 cup	180	26	<b>Duck</b>	3 oz	171
powdered, nonfat	1 cup	340	25	Ham, cured	3 oz	151
1%	1 cup	244	35	<b>Lamb</b>		
nonfat	1 cup	102	12	chop, loin	3 oz	270
whole	1 cup	86	12	leg, roasted	3 oz	205
<b>Yogurt</b>	1 cup	150	11	rib, roasted	3 oz	305
plain, low-fat	8 oz	155	18	<b>Pork</b>		
fruit	8 oz	217	41	chop	3 oz	216
				roast, loin	3 oz	178
				<b>Turkey, breast</b>	3 oz	160
				<b>Veal</b>		
				cutlet	3 oz	242

## Meat & Poultry



## Seafood

<b>Bacon, slices</b>	3	110	0	<b>Bass</b>	3 oz	124	0
<b>Beef</b>				<b>Bluefish</b>	3 oz	135	0
corned, brisket	3 oz	214	0	<b>Clams, raw</b>	3 oz	63	2
hamburger	3 oz	246	0	<b>Cod</b>	3 oz	90	0
roast, pot	3 oz	274	0	<b>Crabmeat,</b>			
roast, rib	3 oz	326	0	canned	3 oz	80	0
roast, rump	3 oz	181	0	<b>Fish sticks</b>	4	308	27
steak, broiled				<b>Flounder</b>	3 oz	100	0
porterhouse	3 oz	262	0	<b>Haddock</b>	3 oz	140	0
round	3 oz	195	0	<b>Halibut</b>	3 oz	119	0
sirloin	3 oz	228	0	<b>Herring</b>	3 oz	173	0
<b>Chicken</b>				<b>Lobster</b>	3 oz	83	1
stewed	3 oz	309	0	<b>Oysters, raw</b>	3 oz	70	4
fried, breast,				<b>Perch</b>	3 oz	100	0
battered				<b>Salmon</b>	3 oz	127	0
roasted	3 oz	220	8	canned w/bone	3 oz	118	0
	3 oz	168	0	<b>Sardines,</b>			
				canned	3 oz	177	0



## Combination foods

Scallops  
Shrimp  
Swordfish  
Trout  
Tuna, canned  
in oil  
in water

3 oz	113	3
3 oz	132	1
3 oz	132	0
3 oz	144	0
3 oz	158	0
3 oz	99	0



Beef  
potpie  
stew  
Chicken potpie  
Chili con carne  
with beans  
Franks  
and beans  
Macaroni  
and cheese

7 oz	330	38
1 cup	194	17
1	545	42
1 cup	286	30
1 cup	368	40
1 cup	430	40
3 oz	130	13
1 slice	153	18
1 cup	332	40
1	210	21
1	181	10
1 cup	170	23
1 cup	80	10
1 cup	74	9
1 cup	78	12
1 cup	50	4
1 cup	20	1
1 cup	108	9



Pizza

Spaghetti with  
meat sauce

Taco

Turkey patty  
Soups, canned  
(with water)

bean, bacon  
beef with  
vegetables  
chicken noodle  
clam chowder,  
Manhattan  
consommé,  
beef  
consommé,  
chicken  
cream of  
chicken

Measure  
Calories  
Carbs (g)

12 oz	146	13
12 oz	99	5
4 oz	82	2
12 oz	4	0
12 oz	152	39
12 oz	182	49
12 oz	124	32
12 oz	160	42

## Beverages

Alcoholic  
beer

beer, light

wine

Carbonated  
drinks

diet soft drink

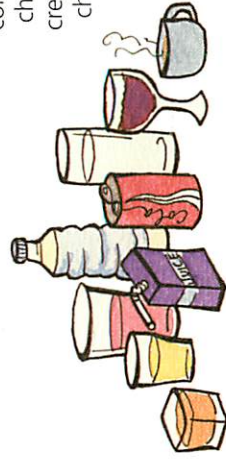
colas

fruit flavored

soft drink

ginger ale

root beer



Measure  
Calories  
Carbs (g)



cream of  
mushroom  
minestrone  
split pea

**Soups, dry,  
(water added)**

chicken noodle  
onion  
tomato

**Soups, canned,  
(milk added)**

clam chowder,  
New England  
tomato  
oyster stew

1 cup 120 9  
1 cup 77 11  
1 cup 170 25

1 cup 60 9  
1 cup 27 5  
1 cup 103 19

1 cup 164 17  
1 cup 161 22  
1 cup 233 11

Measure

Calories

Carbs (g)

**Desserts & Sweets**



**Cake**

angel food  
carrot  
with frosting  
cheesecake  
devils food  
with frosting  
fruitcake  
gingerbread  
pound  
sponge  
yellow  
with frosting

1 oz 73 16

1/12 484 52  
1/12 457 32

1/6 323 47  
1.5 oz 139 27

1/9 263 36  
1/16 229 25

1/12 187 36

1/8 243 36

**Candy**

bar  
caramels

1 oz 140 19  
1 oz 108 22

fudge  
gum drops  
hard

**Chocolate**

milk  
bittersweet  
semi-sweet  
syrup

**Cookies**

brownie  
butter  
chocolate chip  
fig bars  
sugar

**Cupcakes**

frosted

**Custard**

**Frosting**

chocolate  
coconut

frosting glaze,  
homemade

**Gelatin**

regular  
sugar-free

**Honey**

**Jams and**

**preserves**

**Jellies**

**Marshmallows**

**Molasses**

**Pie, homemade**

apple  
blueberry  
cherry

1 oz 108 23  
1 oz 109 28  
1 oz 112 28

1 oz 145 17  
1 oz 133 19  
1 oz 156 17

1 Tbsp 51 12

1 112 12  
1-2" 23 3

1 78 10  
1 56 11  
1 72 10

1 173 28  
1 cup 324 47

1 Tbsp 70 12  
1 Tbsp 49 12

1 Tbsp 71 15

1 cup 160 40  
1 cup 16 2  
1 Tbsp 64 17

1 Tbsp 48 13  
1 Tbsp 51 14  
1 oz 90 23

1 Tbsp 55 14

1/8 pie 411 58  
1/8 pie 360 50  
1/8 pie 486 70

Measure

Calories

Carbs (g)



# Food Exchange Lists Index

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# Keeping Well WITH DIABETES

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# diabetes

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