

Carb Counting and Exchange Lists

Tools to help you
plan your meals



Meal planning with diabetes

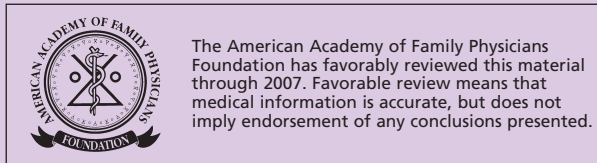
Healthy eating, exercising regularly, and taking your diabetes medication as directed can help you keep your blood glucose levels within your target range. Carbohydrate counting and the Exchange Lists for Meal Planning are tools you can use to make healthy food choices. Following your meal plan can also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



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The *Keeping Well With Diabetes* patient education materials were developed using information from the following sources: The American Association of Diabetes Educators, The American Diabetes Association, The American Dietetic Association, and The American Association of Clinical Endocrinologists. These booklets do not replace the advice of your healthcare provider. Be sure to consult your healthcare provider regarding your individual diabetes treatment plan.

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



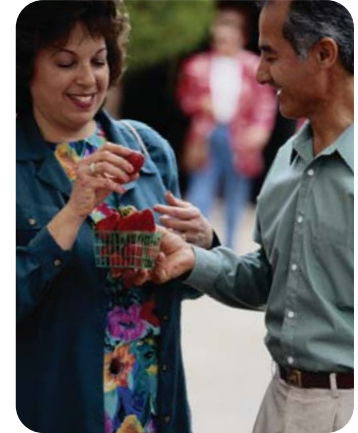
glucose level more than protein or fat. That's why counting the number of carbs in the foods you eat can help

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.

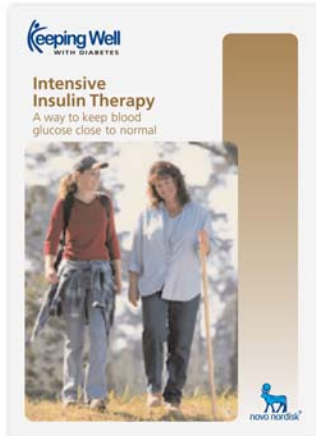
Insulin-to-carbohydrate ratios

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*	
Total Fat 13g	20%
Saturated Fat 5g	25%
Cholesterol 30mg	10%
Sodium 660mg	28%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
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.


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

180 pounds


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

180 pounds

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.

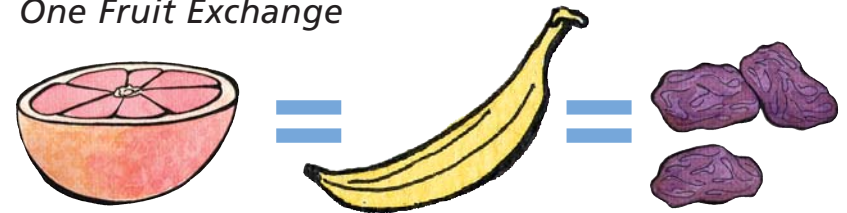
Using less salt when cooking and eating may help control high blood pressure.

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, 6 fruit exchanges, 3 milk exchanges, 2 non-starchy vegetable exchanges, 5 meat exchanges, and 5 fat exchanges daily.

Exchanges & Carb Grams

	Calories per Day				
	1,200	1,500	1,800	2,000	2,200
Carbohydrate Group	10	13	16	17	19
Starch	4	5	7	8	8
Fruit	4	5	6	6	7
Milk	2	3	3	3	4
Non Starchy Vegetable Group	2	2	2	2	2
Meat and Meat Substitutes Group	4	5	5	6	6
Fat Group	3	4	5	6	6
Total carbohydrate grams	154	196	241	256	283

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 241 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
1 small apple
Sugar-free soft drink

Afternoon Snack

1 cup fat-free yogurt
1 medium peach

Dinner

3 oz roast beef
1/2 medium potato
1 cup broccoli
1 1/4 cup strawberries
1 tsp butter or margarine
Tossed salad (lettuce, tomato, cucumbers)
2 Tbsp reduced-fat salad dressing

Evening Snack

3 graham crackers
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.

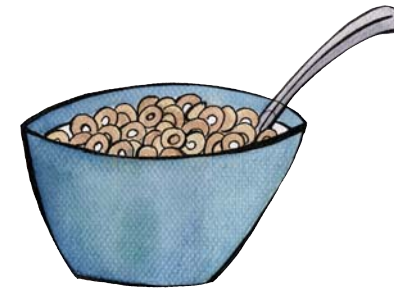
Starch List

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

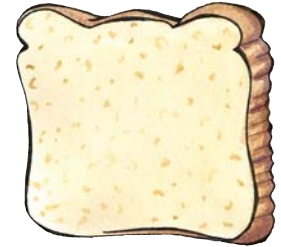
Bread

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	1 slice (1 oz)
Tortilla , corn, 6 in. across	1
Tortilla , flour, 6 in. across	1
Tortilla , flour, 10 in. across	1/3
Waffle , 4 in. square or across, reduced-fat	1



Cereals And Grains

Bran cereals	1/2 cup
Bulgur	1/2 cup
Cereals , cooked	1/2 cup
Cereals , unsweetened, ready-to-eat	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

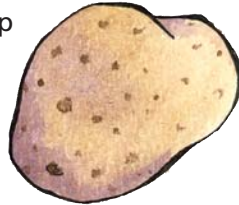
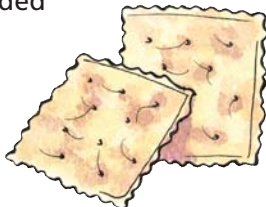
Starch List *(continued)*

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

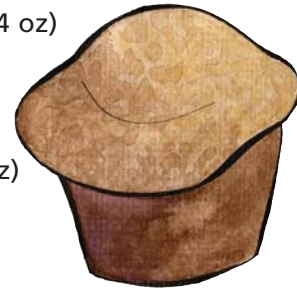
(Count as 1 starch exchange, plus 1 very lean meat exchange.)

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.

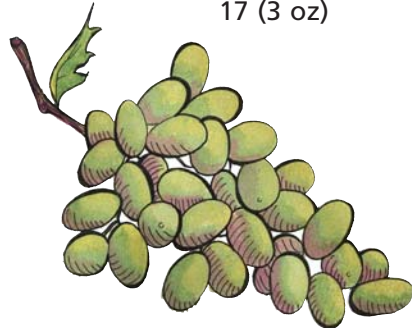
** 400 mg or more of sodium per exchange.

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

Kiwi

Mandarin oranges, canned

Mango, small

Nectarine, small

Orange, small

Papaya

Peach, medium, fresh

Peaches, canned

Pear, large, fresh

Pears, canned

Pineapple, fresh

Pineapple, canned

Plums, small

Plums, canned

Plums, dried (prunes)

Raisins

Raspberries

Strawberries

Tangerines, small

Watermelon

1 slice (10 oz) or

1 cup cubes

1 (3.5 oz)

3/4 cup

1/2 fruit (5.5 oz) or

1/2 cup

1 (5 oz)

1 (6.5 oz)

1/2 fruit (8 oz) or

1 cup cubes

1 (4 oz)

1/2 cup

1/2 (4 oz)

1/2 cup

3/4 cup

1/2 cup

2 (5 oz)

1/2 cup

3

2 Tbsp

1 cup

1 1/4 cup whole berries

2 (8 oz)

1 slice (13.5 oz) or

1 1/4 cup cubes



Fruit Juice, Unsweetened

Apple juice/cider

Cranberry juice cocktail

Cranberry juice cocktail,

reduced-calorie

Fruit juice blends, 100% juice

Grape juice

Grapefruit juice

Orange juice

Pineapple juice

Prune juice

1/2 cup

1/3 cup

1 cup

1/3 cup

1/3 cup

1/2 cup

1/2 cup

1/2 cup

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 (3.5oz)	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(10-11oz)	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

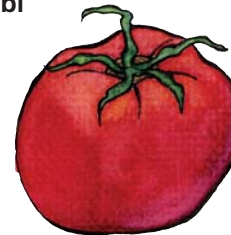
Non Starchy Vegetable List

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



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	1 oz
Egg whites	2
Egg substitutes, plain	1/4 cup
Hot dogs with 1 gram or less of fat per ounce**	1 oz
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
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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:

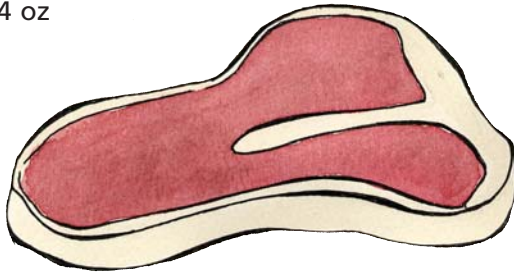
Beef: USDA Select or Choice grades of lean beef trimmed of fat, such as round, sirloin, and flank steak; tenderloin; roast (rib, chuck, rump); steak (T-bone, porterhouse, cubed); ground round	1 oz
Pork: Lean pork, such as fresh ham; canned, cured, or boiled ham; Canadian bacon**;	
tenderloin, center loin chop	1 oz
Lamb: Roast, chop, leg	1 oz
Veal: Lean chop, roast	1 oz
Poultry: Chicken, turkey (dark meat, no skin), chicken (white meat with skin), domestic duck or goose (well-drained of fat, no skin)	1 oz
Fish:	
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
Game: Goose (no skin), rabbit	1 oz
Cheese:	
4.5%-fat cottage cheese	1/4 cup
Grated Parmesan	2 Tbsp
Cheeses with 3 grams or less fat per ounce	1 oz
Other:	
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**, 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)**	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)**	1 (10/lb)
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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

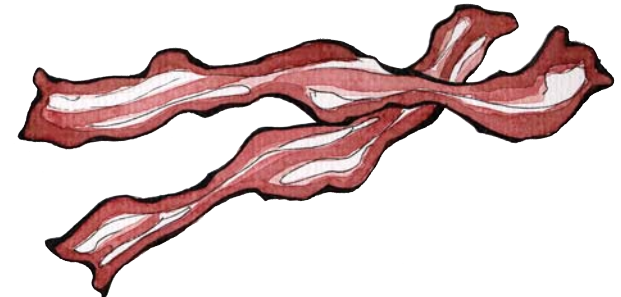
One fat exchange equals 5 grams of fat and 45 calories.

Margarine : stick, tub, or squeeze	1 tsp
lower-fat spread	
(30% to 50% vegetable oil)	1 Tbsp
Mayonnaise : regular	1 tsp
reduced-fat	1 Tbsp
Nuts , walnuts, English	4 halves
Oil (corn, safflower, soybean)	1 tsp
Salad dressing	
regular**	1 Tbsp
reduced-fat	2 Tbsp
Miracle Whip Salad Dressing [®]	
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	2 tsp
Sugar substitutes [†]	
Syrup , sugar-free	2 Tbsp

Condiments

Catsup , 1 Tbsp	Salsa , 1/4 cup
Horseradish	Taco sauce , 1 Tbsp
Lemon juice	Vinegar
Lime juice	Yogurt , 2 Tbsp
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**	

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 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



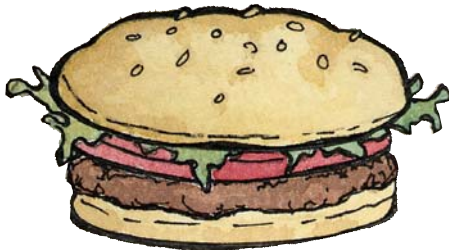
Entrees	Serving Size	Exchanges Per Serving
Chow mein, without noodles or rice**	2 cups (16 oz)	1 carb 2 lean meats
Tuna or chicken salad	1/2 cup (3.5 oz)	0.5 carb 2 lean meats 1 fat
Tuna noodle casserole, lasagna, spaghetti with meatballs, chili with beans, macaroni and cheese**	1 cup (8 oz)	2 carbs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



Frozen Entrees & Meals	Serving Size	Exchanges Per Serving
Dinner-type meal**	14 to 17 oz	3 carbs 3 medium-fat meats 3 fats
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 1 medium-fat meat 3 fats
Entree or meal, with less than 340 calories**	about 8 to 11 oz	2 to 3 carbs 1 to 2 meats

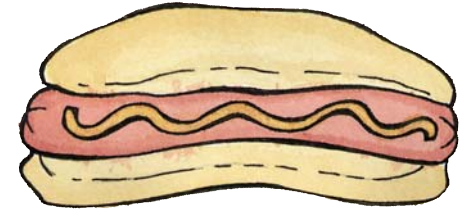
Fast Foods* List

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



* 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 high-fat meat 1 fat
Individual pan pizza**	1	5 carbs 3 medium-fat meats 3 fats
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 medium-fat meat 1 fat

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
saltine	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 hard	1	123	22
	1	140	25
Waffles			
homemade	1-7"	218	25
from mix	1-7"	218	26
Wheat germ	1/4 cup	111	14

Vegetables

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

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



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

Measure
Calories
Carbs (g)

Fruits



Apple	1 med	81	21
Applesauce, no sugar	1 cup	104	28
Apricots	3 med	51	12
Avocado	1 med	306	12
Banana	1 med	105	27
Blackberries	1 cup	74	18
Blueberries	1 cup	80	21
Cantaloupe	1 cup	56	13
Cherries, fresh	10	34	8
Dates, pitted, dried	5	114	31
Figs	1	37	10
Grapefruit	1/2 med	40	10
Grapes	10	35	9
Orange	1 med	60	15
Papaya	1 med	119	30
Peach	1 med	37	10
Pear	1 med	98	25
Pineapple	1 cup	76	19

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

Dairy Products

Butter or Margarine	1 Tbsp	108	0
Cheese			
American	1 oz	105	0
cheddar	1 oz	114	0
cottage, 2% cream	1 cup	203	8
Swiss	1 oz	99	1
Cream			
light	1 Tbsp	29	1
heavy	1 Tbsp	51	0
sour	1 cup	493	10
	1 Tbsp	26	1
Ice Cream, vanilla	1 cup	265	32
Ice Milk	1 cup	184	30

Measure
Calories
Carbs (g)



Milk			
buttermilk	1 cup	99	12
chocolate, 2%	1 cup	180	26
evaporated	1 cup	340	25
powdered, nonfat	1 cup	244	35
1%	1 cup	102	12
nonfat	1 cup	86	12
whole	1 cup	150	11
Yogurt			
plain, low-fat	8 oz	155	18
fruit	8 oz	217	41

Measure
Calories
Carbs (g)

Meat & Poultry



Bacon, slices	3	110	0
Beef			
corned, brisket	3 oz	214	0
hamburger	3 oz	246	0
roast, pot	3 oz	274	0
roast, rib	3 oz	326	0
roast, rump	3 oz	181	0
steak, broiled			
porterhouse	3 oz	262	0
round	3 oz	195	0
sirloin	3 oz	228	0
Chicken			
stewed	3 oz	309	0
fried, breast, battered	3 oz	220	8
roasted	3 oz	168	0

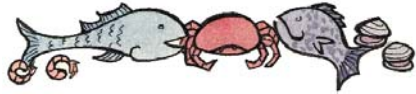
Eggs			
whole	1	75	1
white only	1	17	0
Duck	3 oz	171	0
Ham, cured	3 oz	151	0
Lamb			
chop, loin	3 oz	270	0
leg, roasted	3 oz	205	0
rib, roasted	3 oz	305	0
Pork			
chop	3 oz	216	0
roast, loin	3 oz	178	0
Turkey, breast	3 oz	160	0
Veal			
cutlet	3 oz	242	0

Measure
Calories
Carbs (g)

Seafood

Bass	3 oz	124	0
Bluefish	3 oz	135	0
Clams, raw	3 oz	63	2
Cod	3 oz	90	0
Crabmeat, canned	3 oz	80	0
Fish sticks	4	308	27
Flounder	3 oz	100	0
Haddock	3 oz	140	0
Halibut	3 oz	119	0
Herring	3 oz	173	0
Lobster	3 oz	83	1
Oysters, raw	3 oz	70	4
Perch	3 oz	100	0
Salmon	3 oz	127	0
canned w/bone	3 oz	118	0
Sardines, canned	3 oz	177	0

	Measure	Calories	Carbs (g)
Scallops	3 oz	113	3
Shrimp	3 oz	132	1
Swordfish	3 oz	132	0
Trout	3 oz	144	0
Tuna, canned			
in oil	3 oz	158	0
in water	3 oz	99	0



Beverages

	Measure	Calories	Carbs (g)
Alcoholic			
beer	12 oz	146	13
beer, light	12 oz	99	5
wine	4 oz	82	2
Carbonated drinks			
diet soft drink	12 oz	4	0
colas	12 oz	152	39
fruit flavored soft drink	12 oz	182	49
ginger ale	12 oz	124	32
root beer	12 oz	160	42



Combination foods



Beef			
potpie	7 oz	330	38
stew	1 cup	194	17
Chicken potpie	1	545	42
Chili con carne			
with beans	1 cup	286	30
Franks and beans	1 cup	368	40
Macaroni and cheese			
	1 cup	430	40
	3 oz	130	13
	1 slice	153	18
Pizza			
Spaghetti with meat sauce	1 cup	332	40
Taco	1 sm	369	27
Turkey patty	1	181	10
Soups, canned (with water)			
bean, bacon	1 cup	170	23
beef with vegetables	1 cup	80	10
chicken noodle	1 cup	74	9
clam chowder, Manhattan	1 cup	78	12
consommé, beef	1 cup	50	4
consommé, chicken	1 cup	20	1
cream of chicken	1 cup	108	9

Measure
Calories
Carbs (g)

cream of mushroom	1 cup	120	9
minestrone	1 cup	77	11
split pea	1 cup	170	25
Soups, dry, (water added)			
chicken noodle	1 cup	60	9
onion	1 cup	27	5
tomato	1 cup	103	19
Soups, canned, (milk added)			
clam chowder, New England	1 cup	164	17
tomato	1 cup	161	22
oyster stew	1 cup	233	11

Measure
Calories
Carbs (g)

Desserts & Sweets



Cake			
angel food	1 oz	73	16
carrot			
with frosting	1/12	484	52
cheesecake	1/12	457	32
devils food			
with frosting	1/6	323	47
fruitcake	1.5 oz	139	27
gingerbread	1/9	263	36
pound	1/16	229	25
sponge	1/12	187	36
yellow			
with frosting	1/8	243	36
Candy			
bar	1 oz	140	19
caramels	1 oz	108	22

Measure
Calories
Carbs (g)

fudge	1 oz	108	23
gum drops	1 oz	109	28
hard	1 oz	112	28
Chocolate			
milk	1 oz	145	17
bittersweet	1 oz	133	19
semi-sweet	1 oz	156	17
syrup	1 Tbsp	51	12
Cookies			
brownie	1	112	12
butter	1-2"	23	3
chocolate chip	1	78	10
fig bars	1	56	11
sugar	1	72	10
Cupcakes			
frosted	1	173	28
Custard	1 cup	324	47
Frosting			
chocolate	1 Tbsp	70	12
coconut	1 Tbsp	49	12
frosting glaze, homemade	1 Tbsp	71	15
Gelatin			
regular	1 cup	160	40
sugar-free	1 cup	16	2
Honey	1 Tbsp	64	17
Jams and preserves	1 Tbsp	48	13
Jellies	1 Tbsp	51	14
Marshmallows	1 oz	90	23
Molasses	1 Tbsp	55	14
Pie, homemade			
apple	1/8 pie	411	58
blueberry	1/8 pie	360	50
cherry	1/8 pie	486	70

custard	1/8 pie	262	34
lemon			
meringue	1/8 pie	362	50
pecan	1/8 pie	503	64
pumpkin	1/8 pie	316	41
Popsicle	2 oz	42	11
Puddings			
chocolate, with low-fat milk rice,	1/2 cup	151	28
homemade tapioca,	1/2 cup	217	40
homemade	1/2 cup	190	26
Sherbet	1 cup	254	55
Sugar, white	1 Tbsp	50	13
Syrup			
corn, dark	1 Tbsp	56	15
maple	1 Tbsp	52	13

Measure

Calories

Carbs (g)

Miscellaneous



Barbecue sauce	1 Tbsp	12	2
Catsup, tomato	1 Tbsp	16	4
Cocoa,			
mix with milk	1 cup	213	30
Coconut,			
fresh shredded	1 cup	283	12
Dressings			
blue cheese	1 Tbsp	77	1
Italian, low-cal	1 Tbsp	15	2
Garlic	1 clove	5	1
Mayonnaise	1 Tbsp	100	0
Mustard	1 tsp	4	0
Nuts			
almonds	1 cup	870	26
cashews	1 cup	749	37
peanuts	1 cup	837	27
pecans	1 cup	768	15
walnuts	1 cup	654	14
Olives			
green	4	18	0
black	4	20	1
Peanut butter	1 Tbsp	95	3
Pickles			
dill	1 slice	1	0
relish	1 Tbsp	20	5
sweet gherkins	1	20	5

Measure

Calories

Carbs (g)

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