

# THE DIABETIC EXCHANGE LIST (EXCHANGE DIET)

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.

## The Exchange Lists

The reason for dividing food into six different groups is that foods vary in their carbohydrate, protein, fat, and calorie content. Each exchange list contains foods that are alike; each food choice on a list contains about the same amount of carbohydrate, protein, fat, and calories as the other choices on that list.

The following chart shows the amounts of nutrients in one serving from each exchange list. As you read the exchange lists, you will notice that one choice is often a larger amount of food than another choice from the same list. Because foods are so different, each food is measured or weighed so that the amounts of carbohydrate, protein, fat, and calories are the same in each choice.

## The Diabetic Exchange List

	Carbohydrate (grams)	Protein (grams)	Fat (grams)	Calories
<b>I. Starch/Bread</b>	15	3	trace	80
<b>II. Meat</b>				
Very Lean	5	7	0-1	35
Lean	5	7	3	55
Medium-Fat	5	7	5	75
High-Fat	5	7	8	100
<b>III. Vegetable</b>	5	2	-	25
<b>IV. Fruit</b>	15	-	-	60
<b>V. Milk</b>				
Skim	12	8	0-3	90
Low-fat	12	8	5	120
Whole	12	8	8	150
<b>VI. Fat</b>	5	-	5	45

You will notice symbols on some foods in the exchange groups.

1. Foods that are high in fiber (three grams or more per normal serving) have the symbol \*.
2. Foods that are high in sodium (400 milligrams or more of sodium per normal serving) have the symbol #.

## I. Starch/Bread List

Each item in this list contains approximately **fifteen grams of carbohydrate**, three grams of protein, a trace of fat, and eighty calories. Whole-grain products average about two grams of fiber per serving.

Some foods are higher in fiber. Those foods that contain three or more grams of fiber per serving are identified with the symbol \*.

**General rule:**

- 1/2 cup of cereal, grain, or pasta = one serving
- 1 ounce of a bread product = one serving

<b>CEREALS/GRAINS/PASTA</b>	
*Bran cereals, concentrated (such as Bran Buds, All Bran)	1/3 cup
*Bran cereals, flaked	1/2 cup
Bulgur (cooked)	1/2 cup
Cooked cereals	1/2 cup
Cornmeal (dry)	2 1/2 tbsp
Grape Nuts	3 tbsp
Grits (cooked)	1/2 cup
Other ready-to-eat, unsweetened (plain) cereals	3/4 cup
Pasta (cooked)	1/2 cup
Puffed cereal	1 1/2 cups
Rice, white or brown (cooked)	1/3 cup
Shredded wheat	1/2 cup
*Wheat germ	3 tbsp
<b>DRIED BEANS/PEAS/LENTILS</b>	
*Beans and peas (cooked) (such as kidney, white, split, blackeye)	1/3 cup
*Lentils (cooked)	1/3 cup
*Baked beans	1/4 cup
<b>STARCHY VEGETABLES</b>	
*Corn	1/2 cup
*Corn on the cob, 6 in.	1 long
*Lima beans	1/2 cup
*Peas, green (canned or frozen)	1/2 cup
*Plantain	1/2 cup
Potato, baked 1 small	(3 oz)
Potato, mashed	1/2 cup
Squash, winter (acorn, butternut)	3/4 cup
Yam, sweet potato	1/3 cup

<b>BREAD</b>	
Bagel 1/2	(1 oz)
Bread sticks, crisp, 4 in. long x 1/2 in.	2 (2/3 oz)
Croutons low fat	1 cup
English muffin	1/2
Frankfurter or hamburger bun	1/2 (1 oz)
Pita, 6 in. across	1/2
Plain roll, small	1 (1 oz)
Raisin, unfrosted	1 slice
*Rye, pumpernickel	1 slice (1 oz)
White, Wheat, Whole wheat (including French, Italian)	1 slice(1 oz)
<b>CRACKERS/SNACKS</b>	
Animal crackers	8
Graham crackers, 2 1/2 in. square	3
Matzoh	3/4 oz
Melba toast	5 slices
Oyster crackers	24
Popcorn (popped, no fat added)	3 cups
Pretzels	3/4 oz
Rye crisp (2 in. x 3 1/2 in.)	4
Saltine-type crackers	6
Whole-wheat crackers, no fat added (crisp breads such as Wasa)	2-4 slices (3/4 oz)
Whole-wheat crackers, fat added (such as Triscuits)	4-6 (1 oz)
<b>STARCHY FOODS PREPARED WITH FAT (count as 1 starch/bread serving, plus 1 fat serving)</b>	
Biscuit, 2 1/2 in. across	1
Chow mein noodles	1/2 cup
Corn bread, 2-in. cube	1 (2 oz)
Cracker, round butter type	6
French-fried potatoes (2 in. to 3 1/2 in. long)	10 (1 1/2 oz)
Muffin, plain, small	1
Pancake, 4 in. across	2
Stuffing, bread (prepared)	1/4 cup
Taco shell, 6 in. across	2
Waffle, 4 1/2 in. square	1

## IV. Fruit List

Each item on this list contains about **fifteen grams of carbohydrate** and sixty calories. Fresh, frozen, and dry fruits have about two grams of fiber per serving. Fruits that have three or more grams of fiber per serving have a \* symbol. Fruit juices contain very little dietary fiber.

The carbohydrate and calorie contents for a fruit serving are based on the usual serving of the most commonly eaten fruits. Use fresh fruits or frozen or canned fruits with no sugar added. Whole fruit is more filling than fruit juice and may be a better choice for those who are trying to lose weight. Unless otherwise noted, the serving size for one fruit serving is:

- 1/2 cup of fresh fruit or fruit juice
- 1/4 cup dried fruit

Fresh, Frozen, and Unsweetened Canned Fruit	
Apples (raw, 2 in. across)	1
Applesauce (unsweetened)	1/2 cup
Apricots (canned) (4 halves)	1/2 cup
Banana (9 in. long)	1/2
Blackberries (raw)	3/4 cup
*Blueberries (raw)	3/4 cup
Cantaloupe (5 in. across)	1/3
Cantaloupe (cubes)	1 cup
Cherries (large, raw)	12 whole
Cherries (canned)	1/2 cup
Figs (raw, 2 in. across)	2
Fruit cocktail (canned)	1/2 cup
Grapefruit (medium)	1/2
Grapefruit (segments)	3/4 cup
Grapes (small)	15
Honeydew melon (medium)	1/8
Honeydew melon (cubes)	1 cup
Kiwi (large)	1
Mandarin oranges	3/4 cup
Mango (small)	1/2
Nectarines (2 1/2 in. across)	1
Orange (2 1/2 in. across)	1
Papaya	1 cup

Peach (2 3/4 in. across)	1
Peaches (canned) (2 halves)	1 cup
Pear (1/2 large)	1 small
Pears (canned) (2 halves)	1/2 cup
Persimmon (medium, native)	2
Pineapple (raw)	3/4 cup
Pineapple (canned)	1/3 cup
Plum (raw, 2 in. across)	2
*Pomegranate	1/2
*Raspberries (raw)	1 cup
*Strawberries (raw, whole)	1 1/4 cup
Tangerine (2 1/2 in. across)	2
Watermelon (cubes)	1 1/4 cup
<b>*Dried Fruit</b>	
*Apples	4 rings
*Apricots	7 halves
Dates (medium)	2 1/2
*Figs	1 1/2
*Prunes (medium)	3
Raisins	2 tbsp
<b>Fruit Juice</b>	
Apple juice/cider	1/2 cup
Cranberry juice cocktail	1/3 cup
Grapefruit juice	1/2 cup
Grape juice	1/3 cup
Orange juice	1/2 cup
Pineapple juice	1/2 cup
Prune juice	1/3 cup
* = 3 grams or more of fiber per serving	

## V. Milk List

Each serving of milk or milk products on this list contains about **twelve grams of carbohydrate** and eight grams of protein. The amount of fat in milk is measured in percent of butterfat. The calories vary depending on the kind of milk chosen. The list is divided into three parts, based on the amount of fat and calories: skim/very low-fat milk, low-fat milk, and whole milk. One serving (one milk exchange) of each of these includes:

Milk	Carbohydrate(grams)	Protein(grams)	Fat (grams)	Calories
Skim	12	8	trace	90
Low-fat	12	8	5	120
Whole	12	8	8	150

Skim and Very Low-Fat Milk	
Skim milk	1 cup
1/2% milk	1 cup
1% milk	1 cup
Low-fat buttermilk	1 cup
Evaporated skim milk	1/2 cup
Dry nonfat milk	1/3 cup
Plain nonfat yogurt	8 oz
Low-Fat Milk	
2% milk	1 cup
Plain low-fat yogurt (with added nonfat milk solids)	8 oz
<b>The whole-milk group has much more fat per serving than the skim and low-fat groups. Whole milk has more than 3 1/4% butterfat.</b>	
Whole milk	1 cup
Evaporated whole milk	1/2 cup
Whole milk plain yogurt	8 oz

### III. Vegetable List

Each vegetable serving on this list contains about **five grams of carbohydrate**, two grams of protein, and twenty-five calories. Vegetables contain two to three grams of dietary fiber. Vegetables that contain 400 mg of sodium per serving are identified with a # symbol.

Vegetables are a good source of vitamins and minerals. Fresh and frozen vegetables have more vitamins and less added salt. Rinsing canned vegetables will remove much of the salt. Unless otherwise noted, the serving size for vegetables (one vegetable exchange) is:

- 1/2 cup of cooked vegetables or vegetable juice
- 1 cup of raw vegetables

Artichoke (1/2 medium)	Eggplant
Asparagus	Greens (collard, mustard, turnip)
Beans (green, wax, Italian)	Kohlrabi
Bean sprouts	Leeks
Beets	Mushrooms, cooked
Broccoli	Okra
Brussels sprouts	Onions
Cabbage, cooked	Pea pods
Carrots	Peppers (green)
Cauliflower	Tomato (one large)
Rutabaga	Tomato/vegetable juice
Sauerkraut	Turnips
Spinach, cooked	Water chestnuts
Summer squash (crookneck)	Zucchini, cooked

Starchy vegetables such as corn, peas, and potatoes are found on the Starch/Bread List. For "free" vegetables (i.e., fewer than ten calories per serving), see the Free Food List.

### II. Meat List

Each serving of meat and substitutes on this list contains about seven grams of protein. The amount of fat and number of calories vary, depending on what kind of meat or substitute is chosen. The list is divided into four parts, based on the amount of fat and calories: very lean meat, lean meat, medium-fat meat, and high-fat meat. One ounce (one meat exchange) of each of these includes the following nutrient amounts:

	<b>Carbohydrate (grams)</b>	<b>Protein (grams)</b>	<b>Fat (grams)</b>	<b>Calories</b>
Very Lean	-	7	0-1	35
Lean	-	7	3	55
Medium-Fat	-	7	5	75
High-Fat	-	7	8	100

<b>Lean Meat and Substitutes One exchange is equal to any one of the following items:</b>		
Beef	USDA Good or Choice grades of lean beef, such as round, sirloin, and flank steak; tenderloin; and chipped beef#	1 oz
Pork	Lean pork, such as fresh ham; canned, cured, or boiled ham#, Canadian bacon#, tenderloin	1 oz
Veal	All cuts are lean except for veal cutlets (ground or cubed)	1 oz
Poultry	Chicken, turkey, Cornish hen (without skin)	1 oz
Fish	All fresh and frozen fish	1 oz
	Crab, lobster, scallops, shrimp, clams (fresh or canned in water#)	2 oz
	Oysters	6 med
	Tuna# (canned in water)	1/4 cup
	Herring (uncreamed or smoked)	1 oz
	Sardines (canned)	2 med
Wild Game	Venison, rabbit, squirrel	1 oz
	Pheasant, duck, goose (without skin)	1 oz
Cheese	Any cottage cheese	1/4 cup
	Grated parmesan	2 tbsp
	Diet cheese# (with fewer than 55 calories per ounce)	1 oz
Other	95% fat-free luncheon meat	1 oz
	Egg whites	3
	Egg substitutes (with fewer than 55 calories per 1/4 cup)	1/4 cup
<b>Medium-Fat and Meat Substitutes One exchange is equal to any one of the following items:</b>		
Beef	Most beef products fall into this category. Examples are: all ground beef, roast (rib, chuck, rump), steak (cubed, Porterhouse, T-bone), and meat loaf.	1 oz
Pork	Most pork products fall into this category. (Examples: chops, loin roast, Boston butt, cutlets)	1 oz
Lamb	Most lamb products fall into this category (examples: chops, leg, roast)	1 oz
Veal	Cutlet (ground or cubed, unbreaded)	1 oz
Poultry	Chicken (with skin), domestic duck or goose (well drained of fat), ground turkey	1 oz
Fish	Tuna# (canned in oil and drained)	1/4 cup
	Salmon# (canned)	1/4 cup



Cheese	Skim or part-skim milk cheeses, such as:	
	Ricotta	1/4 cup
	Mozzarella	1 oz
	Diet cheeses# (with 56-80 calories per ounce)	1 oz
Other	86% fat-free luncheon meat#	1 oz
	Egg (high in cholesterol, so limit to 3 per week)	1
	Egg substitutes (with 56-80 calories per 1/4 cup)	1/4 cup
	Tofu (2 1/2 in. x 2 3/4 in. x 1 in.)	4 oz
	Liver, heart, kidney, sweetbreads (high in cholesterol)	1 oz
<b>High-Fat Meat and Substitutes. These items are high in saturated fat, cholesterol, and calories. One exchange is equal to any one of the following items:</b>		
Beef	Most USDA Prime cuts of beef, such as ribs, corned beef#	1 oz
Pork	Spareribs, ground pork, pork sausage! (patty or link)	1 oz
Lamb	Patties (ground lamb)	1 oz
Fish	Any fried fish product	1 oz
Cheese	All regular cheese#, such as American, Blue, Cheddar, Monterey, Swiss	1 oz
Other	Luncheon meat#, such as bologna, salami, pimiento loaf	1 oz
	Sausage#, such as Polish, Italian	1 oz
	Knockwurst, smoked	1 oz
	Bratwurst#!	1 oz
	Frankfurter# (turkey or chicken) (10/lb)	1 frank
	Peanut butter (contains unsaturated fat).	1 tbsp
<b>Count as one high-fat meat plus one fat exchange:</b>		
Frankfurter#	(beef, pork, or combination) (400 mg or more of sodium per exchange) (10/lb)	1 frank

## VI. Fat List

Each serving on the fat list contains about five grams of fat and forty-five calories.

The foods on the fat list contain mostly fat, although some items may also contain a small amount of protein. All fats are high in calories and should be carefully measured. The sodium content of these foods varies widely. Check the label for sodium information.

Unsaturated Fats	
Avocado	1/8 medium
Margarine	1 tsp
#Margarine, diet	1 tbsp

Mayonnaise	1 tsp
#Mayonnaise (reduced-calorie)	1 tbsp
<b>Nuts and Seeds:</b>	
Almonds, dry roasted	6
Cashews, dry roasted	1 tbsp
Pecans	2
Peanuts (small)	20
Peanuts (large)	10
Walnuts	2 whole
Other nuts	1 tbsp
Seeds (except pumpkin), pine nuts, sunflower (without shells)	1 tbsp
Pumpkin seeds	2 tsp
Oil (corn, cottonseed, safflower, soybean, sunflower, olive, peanut)	1 tsp
#Olives (small)	10
#Olives (large)	5
Salad dressing, mayonnaise-type, regular	2 tsp
Salad dressing, mayonnaise-type reduced-calorie	1 tbsp
Salad dressing, all varieties, regular	1 tbsp
#Salad dressing, reduced-calorie (2 tbsp of low-calorie dressing is a free food)	2 tbsp
<b>Saturated Fats</b>	
Butter	1 tsp
#Bacon	1 slice
Chitterlings	1/2 oz
Coconut, shredded	2 tbsp
Coffee whitener, liquid	2 tbsp
Coffee whitener, powder	4 tsp
Cream (light, coffee, table)	2 tbsp
Cream, sour	2 tbsp
Cream (heavy, whipping)	1 tbsp
Cream cheese	1 tbsp
#Salt pork	1/4 oz
# = 400 mg or more of sodium if more than one or two servings are eaten.	

## VII. Free Foods

A free food is any food or drink that contains fewer than twenty calories per serving. You can eat as much as you want of items that have no serving size specified. You may eat two or three servings per day of those items that have a specific serving size. Be sure to spread them out through the day.

<b>Drinks</b>	
#Bouillon or broth without fat	
Bouillon, low-sodium	
Carbonated drinks, sugar-free	
Carbonated water	
Club soda	
Cocoa powder, unsweetened	(1 tbsp)
Coffee/tea	
Drink mixes, sugar-free	
Tonic water, sugar-free	
<b>Fruit</b>	
Cranberries, unsweetened	(1/2 cup)
Rhubarb, unsweetened	(1/2 cup)
<b>Vegetables (raw, 1 cup)</b>	
Cabbage	Zucchini
Celery	Salad Greens and lettuce
Chinese cabbage	Endive
Cucumber	Escarole
Green onion	Radishes
Hot peppers	Romaine
Mushrooms	Spinach
<b>Sweets</b>	
Candy, hard, sugar-free	
Gelatin, sugar-free	
Gum, sugar-free	
Jam/jelly, sugar-free	(2 tsp)
Pancake syrup, sugar-free	(1-2 tbsp)
Sugar substitutes (saccharin, aspartame)	
Whipped topping	(2 tbsp)
<b>Condiments</b>	
Catsup	(1 tbsp)

Horseradish	
Mustard	
#Pickles, dill, unsweetened	
Salad dressing, low-calorie	(2 tbsp)
Taco sauce	(1 tbsp)
Vinegar	
Nonstick pan spray	

<b>Seasonings can be very helpful in making foods taste better. Be careful of how much sodium you use. Read labels to help you choose seasonings that do not contain sodium or salt.</b>	
Basil (fresh)	Lemon pepper
Celery Seeds	Lime
Cinnamon	Lime Juice
Chili powder	Mint
Chives	Onion powder
Curry	Oregano
Dill	Paprika
Flavoring extracts (vanilla, almond, walnut, butter, peppermint, lemon, etc.)	Pepper
Garlic	Pimento
Garlic powder	Spices
Herbs	#Soy sauce
Hot pepper sauce	Soy sauce, low sodium ("lite")
Lemon	Wine, used in cooking (1/4 cup)
Lemon juice	Worcestershire sauce

## VII. Combination Foods

Much of the food we eat is mixed together in various combinations. These combination foods do not fit into only one exchange list. It can be quite hard to tell what is in a certain casserole dish or baked food item. Following is a list of average values for some typical combination foods

Food	Amount	Exchanges
Casserole, homemade	1 cup (8 oz)	2 medium-fat meat, 2 starches, 1 fat
#Cheese pizza, thin crust	1/4 of a 15-oz size pizza or a 10" pizza	1 medium-fat meat, 2 starches, 1 fat

*#Chili with beans (commercial)	1 cup (8 oz)	2 medium-fat meat, 2 starches, 2 fats
*#Chow mein (without noodles or rice)	2 cups (16 oz)	2 lean meat, 1 starch, 2 vegetable
#Macaroni and cheese	1 cup (8 oz)	1 medium-fat meat, 2 starches, 2 fats
<b>Soup</b>		
*#Bean	1 cup (8 oz)	1 lean meat, 1 starch, 1 vegetable
#Chunky, all varieties	10 3/4-oz can	1 medium-fat meat, 1 starch, 1 vegetable
#Cream (made with water)	1 cup (8 oz)	1 starch, 1 fat
#Vegetable or broth	1 cup (8 oz)	1 starch
#Spaghetti and meatballs (canned)	1 cup (8 oz)	1 medium-fat meat, 1 fat, 2 starches
Sugar-free pudding (made with skim milk)	1/2 cup	1 starch
<b>If beans are used as a meat substitute:</b>		
*Dried beans, *peas, *lentils	1 cup (cooked)	1 lean meat, 2 starches
<b>Sweets/Desserts</b>		
Angel-food cake	1/12 cake	2 starches
Cake, no icing	1/12 cake (3-in. square)	2 starches, 2 fats
Cookies	2 small (1 3/4 in. across)	2 starches, 1 fat
Frozen fruit yogurt	1/3 cup	1 starch
Gingersnaps	3	1 starch
Granola	1/4 cup	1 starch, 1 fat
Granola bars	1 small	1 starch, 1 fat
Ice cream, any flavor	1/2 cup	1 starch, 2 fats
Ice milk, any flavor	1/2 cup	1 starch, 1 fat
Sherbet, any flavor	1/4 cup	1 starch
#Snack chips, all varieties	1 oz	1 starch, 2 fats
Vanilla wafers	6 small	1 starch, 2 fats
# = If more than one serving is eaten, these foods have 400mg or more of sodium.		

## Measure Foods

It is important to eat the right serving sizes of food. Measure liquids with a measuring cup. Some solid foods (such as tuna, cottage cheese, and canned fruits) can also be measured with a measuring cup.

Measuring spoons are used for measuring smaller amounts of other foods (such as oil, salad dressing, and peanut butter). A scale can be very useful for measuring almost anything, especially meat, poultry, and fish. All food should be measured or weighed after cooking. Some food you buy uncooked will weigh less after you cook it. This is true of most meats. Starches often swell in cooking, so a small amount of uncooked starch will become a much larger amount of cooked food. The following table shows some of the changes:

<b>Starch Group</b>	<b>Uncooked</b>	<b>Cooked</b>
Oatmeal	3 level tbsp	1/2 cup
Cream of wheat	2 level tbsp	1/2 cup
Grits	3 level tbsp	1/2 cup
Rice	2 level tbsp	1/2 cup
Spaghetti	1/4 cup	1/2 cup
Noodles	1/3 cup	1/2 cup
Macaroni	1/4 cup	1/2 cup
Dried beans	3 tbsp	1/3 cup
Dried peas	3 tbsp	1/3 cup
Lentils	2 tbsp	1/3 cup
<b>Meat Group</b>		
Hamburger	4 oz	3 oz
Chicken	1 small drumstick	1 oz
	1/2 of a whole chicken breast	3 oz