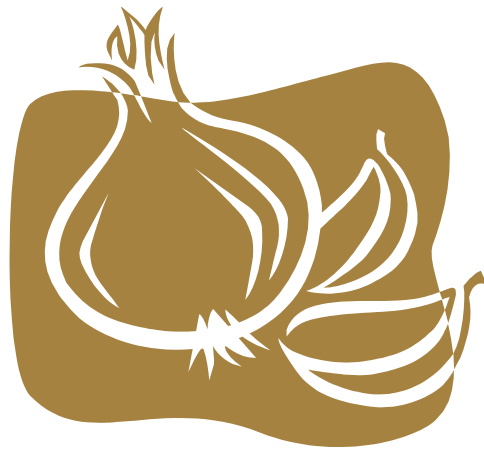


Carbohydrate Counting for Traditional South Asian Foods



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Preface

The Carbohydrate Counting tool was developed to meet the needs of the South Asian population and is an original intellectual product of the author, Ashwini Wagle, MS, RD, Associate Professor and DPD Director, Department of Nutrition, Food Science and Packaging at San Jose State University. The 4th edition and revised version was developed by the main author with assistance of Tanay Prabhu, BS Student in Biological Sciences, Drexel University, Philadelphia. The previous versions of the tool were developed with the assistance of graduate students Sajida Arsiwala, MS, RD and Bhavna Subhedar, MS and Dr. Kathryn Sucher, Sc.D, RD, Professor Emeritus, Department of Nutrition, Food Science and Packaging at San Jose State University.

About the Author

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Her basic areas of interest and research are food and culture, traditional health beliefs, practices, and food behaviors for multiple ethnic populations especially South Asians, food insecurity and hunger, and foodservice systems. She has published several articles in peer reviewed scientific research journals and has over fifty abstracts published and presented at national and state conferences.

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Carbohydrate Counting

Some Facts about Carbohydrates (also called carbs or CHO)

Carbohydrates are the body's main source of fuel. Carbohydrates are found in grains, fruits, vegetables, and milk and they provide energy, vitamins, minerals and fiber. Carbohydrates raise your blood sugar more than any other nutrient. When you eat any type of carbohydrates, they are broken down into glucose and it enters your bloodstream. The hormone insulin helps the cells in your body to take up this glucose and use it for energy.

If carbohydrates raise blood glucose does that mean that as a diabetic, you should stay away from them? The low-carb diets that are popular today would make you think they are ideal for diabetics. The fact is that current scientific knowledge does not support the long term use of low-carb diets especially in type 2 diabetics. Carbohydrates from fruits, vegetables, whole grains, and low-fat dairy foods are a part of a healthy diet.

What about Sugar?

In the past, people with diabetes were told to 'hold the sugar'. Current scientific literature has found little truth in the notion that sugars raise blood glucose any more than other carbohydrates. The most important factor in controlling blood sugar is the amount of carbohydrates eaten in a meal and not the type. What that means is not that you can eat sweets and sugars liberally, but that an occasional sweet treat may be okay as long as you make adjustments in the total amount of carbohydrate eaten in that meal.

Carbohydrate Counting

Carbohydrate counting is not a diet, it is a way of planning your carbohydrate intake to manage your blood sugar levels. It places importance in keeping the carbohydrate content of your meals and snacks consistent from day to day. Eating the same amount of carbohydrate for your meals and snacks everyday ensures better blood glucose control. The American Diabetes Association and many health professionals use carbohydrate counting to teach patients how to control their blood glucose. Carbohydrate counting ensures that you can have variety and flexibility in your diet and most importantly can follow your traditional diet.

How many Carbs am I allowed to eat?

You can consult a registered dietitian for an individualized diet plan that fits your needs like weight loss etc. Most men however, need about 4-5 carbs (60-75gms) at each meal. Most women generally need about 3-4 CHO choices (45-60gms) at each meal. If you eat snacks, 1-2 CHO choices (15-30g) are adequate.

What is a Carbohydrate serving?

A carbohydrate choice is a serving of food which contains 15 gms of carbohydrate. Look at the food label and measure how much you will be eating. There are 2 things to locate on the food label; the serving size, and the number of gms of carbohydrate per serving. The number of gms of carbohydrates can be used to calculate the number of carbohydrate choices in the amount you are eating, hence read the food label.

In the example below, if you were to eat 2 cups of cereal, which means you had two servings, you will be consuming twice the total carbohydrate listed on the food label which would total to 86 gms of carbohydrates.

Nutrition Facts	
Serving Size 1 cup (50g)	
Amount Per Serving	
Calories 182	Calories from Fat 6
% Daily Value*	
Total Fat 1g	1%
Saturated Fat 0g	1%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 275mg	11%
Total Carbohydrate 43g	14%
Dietary Fiber 3g	11%
Sugars 14g	
Protein 4g	
Vitamin A 25%	Vitamin C 25%
Calcium 2%	Iron 100%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	
NutritionData.com	

How to Count CHO	
Servings	
0-5gms	free food (do not count)
6-10gms	½
11-20gms	1
21-25gm	1 ½
26-35gms	2

What will I need to get started?

You will need a set of measuring cups and spoons plus a food scale. When you are just beginning to count carbs, you may not be able to accurately estimate a serving size. Try this; scoop out one serving of rice which should be about 1/3 cup. Now do the same thing using a 1/3rd cup measure and see the difference. Once you have been doing it for a few days you will become better at it and will no longer need the measuring cups. You can also invest in the carbohydrate counting resource books given at the end.

What about proteins and fats?

Foods in the fat and protein category do not affect blood glucose directly. Foods in this category include meat, poultry, eggs, tofu, peanut butter, most cheeses and fats such as butter,

margarine and oils. These foods contain negligible amounts of carbohydrate, thus you do not need to worry about them. That does not mean that you can eat as much fat or protein as you like. Keep in mind that most adults need only about 6oz of meat or meat alternatives each day. A 3 oz serving of meat is the size of a deck of cards. Make heart healthy choices whenever possible. Healthy eating involves more than just carbohydrate counting. The next section will help you make the right choices.

Some tips and suggestions:

- Eat a variety of foods. Try to include 5 servings of fruits and vegetables, 6 servings of grains (3 whole grains) and 3 servings of low fat dairy daily.
- Substitute brown rice for white rice. Generally people with diabetes are told to avoid rice altogether. This is a misconception. You can eat rice in reasonable quantities as long as the total carbohydrate for that meal does not exceed your limit.
- Instead of eating only rice, try other grains such as cracked wheat, barley and quinoa (available in most stores and very high in protein). Use them like you would use rice in pulaos etc.
- Avoid starchy vegetables. When using potatoes, yams or other starchy vegetable, always remember to cut down on the amount of rice/roti eaten at that meal. Better still, select green vegetables in place of starchy ones.
- Use green vegetables freely and prepare them in a small amount of oil.
- Avoid frying as a cooking method; learn to use other methods such as dry roasting, baking etc.
- Try to cook with a minimum amount of oil. Use olive or canola oils as they are high in monounsaturated fats which are good for your heart. Avoid ghee, butter and cream in cooking.
- Switch to skim or 1% milk and yogurt. When making desserts like kheer, use 1% milk or evaporated skim milk and use artificial sweeteners. Whole milk and yogurt and products made with them like paneer are high in saturated fats, which raise cholesterol in your blood. Try making your own paneer, chenna with low fat milk.
- Tofu is a good source of high-quality protein especially for vegetarians. Try using it in place of paneer for making dishes like palak paneer.
- Avoid coconut milk/cream or use less than called for in the recipe. Coconut milk is high in saturated fat.
- Use 100% whole wheat chapatti flour for making rotis/phulkas. Avoid putting any ghee/oil when making rotis.

How will I know how much Carbohydrate is in a food?

For packaged foods, please look at the food label and find out how much carbohydrate is in the food. Information about carbohydrate content of popular American foods can be easily found in carb counting books and pamphlets. Nutritional information on traditional South Asian foods is hard to come by. The following list will help you get started.

Starch List

Breads: 15 g Carb (1 carb choice)

(Each Serving = 15 gms Carbohydrate, 3 gms protein, 0-1 gm Fat, 80 calories)

Food	Amount
Bagel	½ (1 oz)
Biscuit	1, 2.5" diameter
Bread sticks (crisp)	2, 4" long and ½" thick (⅔ oz)
Bread (white, wheat, rye, wholegrain)	1 slice (1 oz)
Chapati	1, 6" diameter
Cornbread	1 ¾" (1½ oz)
Croissant	1 small (1 oz)*
Dinner Roll (Pav)	1 small (1 oz)
Dosa	1 approx 10" diameter
English Muffin	½ (1 oz)
Hamburger/Hot Dog bun	½ (1 oz)
Idli	1 small (1½ oz)
Muffin	1 small*
Naan	¼th of 8" x 2"
Pancake	1, 4" diameter x ¼" thick
Paneer Paratha	½, 6" diameter*
Paratha Plain or Thepla	¾, 6" diameter*
Pita Bread	½ of 6"
Potato Paratha	¾, 6" diameter*
Puris	2, 5"*
Raisin Bread, unfrosted	1 slice (1 oz)
Rava Idlis	2 mini (1½ oz)
Reduced-calorie Bread	2 slices (1½ oz)
Roti (Bajra, Makai, Jowar, Multi-grain)	¾" of 6" diameter
Stuffing, bread	⅓ cup
Taco shell or tostada shell	2 crisp shells, 5" across
Tortilla:	
Corn or Flour, 6" across	1
Flour, 10" across	⅓
Waffle	1, 4" square or diameter

Starchy Vegetables: 15 g carb (1 carb choice)

(Each Serving = 15 gms Carbohydrate, 3 gms protein, 0-1 gm Fat, 80 calories)

Food	Amount
Aloo Gobi	1 cup
Baked Beans	½ cup
Cassava	½ cup
Corn on the Cob	1, 6" (5 oz)
Corn	½ cup
French Fries*	10 (2 oz)
Hash Browns*	½ cup
Hominy, Canned	¾ cup
Mixed Veg (Corn, Peas)	1 cup
Parsnips	½ cup
Peas, Green	½ cup
Plantain (green)	½ cup
Plantain (ripe)	½ cup
Potato Sabji*	½ cup
Potato, Boiled or Baked	1 small (3 oz)
Potatoes, Mashed	½ cup
Pumpkin, Canned (No Sugar Added)	1 cup
Succotash	½ cup
Sweet Potatoes	½ cup
Vegetable Korma	½ cup
Vegetable Tofu Stir Fry	1¼ cup
Winter Squash (Acorn or Butternut)	1 cup
Yams	½ cup

Cereals/Grains: 15g Carb (1 carb choice)

(Each Serving = 15 gms Carbohydrate, 3 gms protein, 0-1 gm Fat, 80 calories)

Food	Amount
Aviyal	½ cup
Barley, Cooked	½ cup
Barley, Raw	20 gms
Biryani/Pulao* Meat	½ cup
Bisi Bhela Bhath	½ cup
Bran Cereals	½ cup

Bulgur	½ cup	
Cereals		
-Bran	½ cup	
-Oatmeal, Cooked	½ cup	
-Puffed	1½ cups	½
-Shredded wheat, plain	cup	
-Ready to eat, unsweetened	¾ cup	
-Sugar-frosted	½ cup	
Cooked cereals	½ cup	
Cornmeal, Dry	1½ cup	
Couscous, Cooked	⅓ cup	
Couscous, Raw	20 gms	
Cracked Wheat (Dalia Cooked)	½ cup	
Cracked Wheat (Dalia)	20 gms	
Dhansak*	½ cup	
Dhokla	1, 1" square	
Granola, Regular or Low Fat	¼ cup	
Grape-Nuts®	¼ cup	
Grits, Cooked	½ cup	
Kasha	½ cup	
Kichadi/Khichri Cooked	½ cup	
Matki Usal	½ cup	
Millet, Finger (Ragi/Nachni) Cooked	½ cup	
Millet, Finger (Ragi/Nachni) Raw	20 gms	
Millet, Pearl (Bajra) Cooked	⅓ cup	
Millet, Pearl (Bajra)	20 gms	
Muesli	¼ cup	
Pasta (Cooked)	½ cup	
Polenta, Cooked	⅓ cup	
Polenta, Raw	20 gms	
Quinoa, Cooked	⅓ cup	
Quinoa, Raw	20 gms	
Rice Flakes (Poha Cooked)	½ cup	
Rice Flakes (Poha)	20 gms	
Rice, Brown Cooked	⅓ cup	
Rice, Brown Raw	20 gms	
Rice, Puffed	1½ cup	
Rice, White Cooked	⅓ cup	
Rice, White Raw	20 gms	
Tamarind Rice	⅓ cup	

Semolina (Sooji/Rava)	20 gms
Shredded Wheat	½ cup
Sorghum (Jowar) Cooked	½ cup
Sorghum (Jowar) Raw	20 gms
Tabbouleh, Prepared	½ cup
Tabbouleh, Raw	20 gms
Tapioca (Sabudana), Uncooked	2 tbsp
Upma (Cooked)	½ cup
Uttapam, Vegetable or Mini Uttapam	1, 4"
Wheat Germ, Dry	3 tbsp
Wheat Vermicelli	20 gms
Wheat, Sprouted	½ cup
Whole Wheat Flour (Atta)	25 gms/3 tbsp
All-Purpose Flour (Maida)	25 gms/3 tbsp
Wild Rice, Cooked	½ cup

Pulses/Dals/Beans: 15 g Carb (1 carb choice)

(Each Serving = 15 gms Carbohydrate, 7 gms protein, 0-3gm Fat, 125 calories)

Food	Amount
Bengal Gram (Chole, Chana, Chickpeas Garbanzo) Cooked	½ cup
Bengal Gram (Chole, Chana, Chickpeas Garbanzo) Raw	25 gms
Black Eyed Peas (Chavli) Cooked	½ cup
Black Eye Peas (Chavli) Raw	20 gms
Black Gram (Urad Dal) Cooked	½ cup
Black Gram (Urad Dal) Raw	25 gms
Chick Pea Flour (Besan)	⅓ cup
Chicken Chettinad Curry	1¼ cup
Chicken Curry	1¼ cup
Chicken Noodle Soup	¾ cup
Cow Peas (Lobia) Raw	½ cup
Cow Peas (Lobia) Raw	25 gms
Dhansak*	½ cup
Green Gram (Mung Dal) Cooked	½ cup
Green Gram (Mung Dal) Raw	25 gms
Horse Gram (Kulith) Cooked	½ cup
Horse Gram (Kulith) Raw	25 gms
Hummus	⅓ cup
Kidney Bean (Rajma) Raw	25 gms

Kidneys (Rajma) Cooked	½ cup
Lentils, Brown/Green/Yellow (Masoor) Cooked	½ cup
Lentils, Brown/Green/Yellow (Masoor) Raw	25 gms
Lima Beans	⅔ cup
Moth Beans (Matki) Cooked	½ cup
Moth Beans (Matki) Raw	25 gms
Peas, Dry (Vatana) Cooked	½ cup
Peas, Dry (Vatana) Raw	25 gms
Rasam	1 cup
Red Gram (Toor/Arhar Dal) Cooked	½ cup
Red Gram (Toor/Arhar Dal) Raw	25 gms
Refried Beans, Canned	½ cup
Sambar	½ cup
Spinach and Garbanzo beans curry	¾ cup
Split Peas, Cooked	½ cup
Split Peas, Raw	25 gms
Sprouted Moong Salad	1 cup
Thin Mixed Dal, Cooked	1 cup
Tomato Dal	½ cup

Fruits: 15g Carbs (1 carb choice)

(Each Serving = 15 gms Carbohydrate, 0 gms protein, 0 gm Fat, 60 calories)

Food	Amount
Apple, Raw	1 small, 2" across
Apple, Dried	4 rings
Applesauce (Unsweetened)	½ cup
Apricots, Canned	½ cup
Apricots, Dried	8 halves
Apricots, Raw	4 whole medium
Banana	1 small (4 oz) or ½ medium
Blackberries Raw	¾ cup
Blueberries Raw	¾ cup
Cantaloupe	⅓ melon, 5" across
Cantaloupe, Cubes	1 cup
Cherries, Canned	½ cup
Cherries, Raw	12 large
Custard Apple (Seetaphal)	1 medium
Dates	3
Figs, Dried	1½
Figs, Raw	1½ large or 2 medium
Fruit Cocktail, Canned	½ cup

Grapefruit Segments	¾ cup
Grapefruit	½ large (11 oz)
Grapes	17 (3 oz), small
Guava	1 large
Honeydew Melon Cubes	1 cup
Honeydew Melon	1 slice (10 oz)
Jackfruit, Sliced or Pieces	½ cup
Jambu/Jamun	6
Kiwi	1
Loquat	4
Mandarin Oranges, Canned	¾ cup
Mango	½ small (½ cup)
Nectarine	1 small
Orange	1 small
Papaya Raw Cubes	1 cup
Passion Fruit	½ medium
Peach, Raw	1 medium (¾ cup)
Peaches/Pears, Canned	½ cup or 2 halves
Pear Raw	½ large
Pineapple, Canned	½ cup
Pineapple, Raw	¾ cup
Plums, Canned	½ cup
Plums, Raw	2 small
Prunes, Dried	3
Raisins	2 tbsp
Raspberries, Raw	1 cup
Sapota (Chikoo)	1 medium
Strawberries Raw	1¼ cup, whole
Tangerine, Raw	2 small
Watermelon, Cubed	1¼ cup

Fruits Juices and Drinks: 15g Carbs (1 carb choice)

(Each Serving = 15 gms Carbohydrate, 0 gms protein, 0 gm Fat, 60 calories)

Food	Amount
Apple Juice/Cider	½ cup
Cranberry Juice Cocktail	1/3 cup
Cranberry Juice Cocktail, Reduced-Calorie	1 cup
Energy Drink	½ cup (4 oz)
Fruit Drink or Lemonade	½ cup (4 oz)
Fruit Juice Bar, Frozen (100% Fruit)	1 (3 oz)
Fruit Juice Blends, 100% Juice	1/3 cup
Grapefruit Juice	½ cup

Grape Juice	1/3 cup
Guava Juice	½ cup
Mango Juice	1/3 cup
Orange Juice	½ cup
Pineapple Juice	½ cup
Prune Juice	1/3 cup
Soft Drink, Soda	5 oz
Sports Drink	1 cup (8oz)

Skim Milk/Very LowFat Milk/Yogurt: 15g Carbs (1 carb choice)

(Each Serving = 12 gms Carbohydrate, 8 gms protein, 0-3 gms Fat, 90 calories)

Food	Amount
Buttermilk NonFat or LowFat	1 cup
Chocolate Milk LowFat	½ cup
Dry Milk Powder NonFat	1/3 cup
Evaporated Skim Milk	½ cup
Masala Chai made with 1% milk	1 cup
Milk 1%	1 cup
Milk Fat-Free	1 cup
Plain Yogurt NonFat	1 cup
Yogurt Fruit Flavor, Artificial Sweetener	1 cup

LowFat Milk/Yogurt: 15g Carbs (1 carb choice)

(Each Serving = 12 gms Carbohydrate, 8 gms protein, 5 gms Fat, 120 calories)

Food	Amount
Kefir	1 cup
Lassi LowFat, Artificial Sweetener	1 cup
Milk 2%	1 cup
Plain Yogurt LowFat	1 cup

Whole Milk/Yogurt: 15g Carbs (1 carb choice)

(Each Serving = 12 gms Carbohydrate, 8 gms protein, 8 gm Fat, 150 calories)

Food	Amount
Evaporated Whole Milk	½ cup
Goat's Milk	1 cup
Lassi, Artificial Sweetener	1 cup*
Plain Yogurt Regular	1 cup*
Sweet Acidophilus Milk	1 cup
Whole Milk	1 cup*

Dairy-like Foods: 15g Carbs (1 carb choice)

Food	Amount	Composition
Chocolate milk Fat-free	1 cup	2 Carbohydrates (30 g carb, 8 g protein, 0 g Fat)
Whole	1 cup	2 Carbohydrates (30 g carb, 8 g protein, 8 g Fat)
Eggnog, whole milk	1/2 cup	1 Carbohydrate, 2 Fats (15 g carb, 10g Fat)
Rice milk Flavored, low-Fat	1 cup	2 Carbohydrates (30 g carb)
Plain, Fat-free	1 cup	1 Carbohydrate (15 g carb)
Smoothies, flavored	10 oz	3 Carbohydrates (45 g carb, 8 g protein, 0-3 g Fat)
Soy milk Light	1 cup	1 Carbohydrate (15 g carb, 4 g protein, 3 g Fat)
Regular, plain	1 cup	1 Carbohydrate, 1 Fat (15 g carb, 8 g protein, 5 g Fat)
Yogurt And juice blends	1 cup	2 Carbohydrates (30 g carb, 8 g protein, 0 g Fat)
Low Carbohydrate	2/3 cup (6 oz)	½ Carbohydrate (6 g carb, 4 g protein, 0 g Fat)

Snack foods: 15g carbs (1 Carb choice)

Food	Amount
Animal Crackers	8 crackers
Banana chips	1 oz
Bhelpuri	1oz
Bourbon Biscuits	2 piece
Chivda	1oz
Crackers -Crispbreads	2-5 (¾ oz)
-Round-butter type	6
-Saltine-type	6
-Sandwich-style, with filling	3
-Whole-wheat regular	2-5 (¾ oz)
-Ritz	4-6 round*
Crispy Tea Rusk - Chai Time Toast Just Baked	2
Dahi Vada (3/4")	1 piece*

Digestive High Fiber Biscuit Britannia	1 piece
French Fries	10 (2 oz) *
Fruit snacks, Chewy	1 roll
Graham Crackers (2½" square)	3 squares
Granola or Snack Bar	1 bar (1 oz)
Handavo (¾" square)	1 piece*
Kachori (Mung Dal) (¾" square)	1 *
Kachori (Vegetable) (¾" square)	1 *
Khandavi (½" roll)	6 pieces *
Khari Biscuits	4 pieces
Marie Biscuits Britannia Gold	4 pieces
Mathris (1" diameter)	2 thin *
Matzoh	¾ oz
Melba toast (2" by 4")	4 pieces
Namkeen/Nimco	½ cup*
Oyster crackers	20
Pakoda, Spinach	3 pieces *
Pani Puri	6
Papad	2
Parle-G Original Gluco Biscuits	4 pieces
Popcorn	3 C
Pretzels	¾ oz
Rice Cakes (4" across)	2, 4"
Rice Puffed (Murmura)	1½ cup
Snack chips	
-Baked	15-20 (¾ oz)
-Potato	9-13 (¾ oz)
-Regular	9-13 (¾ oz)
-Tortilla	9-13 (¾ oz)
Snack Chips, Potato or Tortilla	¾ oz (9-13 chips) *
Sooji Toast Britannia	2 pieces
Vanilla Wafers	5 pieces
Vegetable Cutlet	1 medium*
Vegetable Samosa	¾* (1 Samosa=2½ Carbohydrates)

Vegetables: 5 g Carb (Count if serving size more than 15 g)

(Each Serving = 5 gms Carbohydrate, 2 gms protein, 0 gm Fat, 25 calories)

Food	Amount
Cooked Vegetables	½ cup
Raw Vegetables	1 cup
Vegetable Juice	½ cup

Amaranth, Artichokes, Asparagus, Ambati, Baby Corn, Bamboo Shoots, Green Beans, Wax Beans, Italian Beans, Bean Sprouts, Beets, Bok Choy, Broccoli, Cabbage, Carrots, Cauliflower, Eggplant, Greens (Collard, Kale, Mustard, Swiss Chard, Turnip), Gourds (Bitter, Bottle, Winter etc.), Mushrooms, Okra, Onions, Snow Peas, Peppers (all types), Radishes, Spinach, Squash, Tomato fresh or canned, Turnips and Zucchini etc.

Food	Amount
Pasta/Spaghetti sauce	½ cup
Tomato Puree	¼ cup
Tomato Sauce	½ cup

Combination Foods: 15g Carbs (1 carb choice)

Food	Amount	
Aloo Gosht or Meat & Potato Salan/Curry	1 cup	1 ½ Carbohydrates, 2 Fats
Batata Poha or Savory Rice Flakes with Potatoes	1 cup	1 ½ Carbohydrates, 1 Fat
Batata Vada, Fried	1 piece (30 gms)	1 ½ Carbohydrates, 1 Fat
Burrito, Meat	1 (100 gms)	2 Carbohydrates, 2 Fats
Burrito, Vegetable	1 (100 gms)	3 Carbohydrates, 2 Fats
Casseroles, Homemade	1 cup (8 oz)	2 Carbohydrates, 2 Fats
Chicken Nuggets	6 pieces	1 Carbohydrate, 3 Fats
Chicken Nuggets, Soy-Based	2 Pieces (1 ½ oz)	½ Carbohydrates, 1 Fat
Chinese Chow Mein Noodles	½ cup	1 Carbohydrate, 2 Fats
Dal Gosht or Meat & Dal Curry	1 cup	2 ½ Carbohydrates, 3 Fats
Falafel (Spiced Chickpea and Wheat Patties)	3 patties (2" across)	1 Carbohydrate, 2 Fats
Haleem (made with Wheat, Lentils, Meat)	1 cup	2 Carbohydrates, 3 Fats
Hot Dog, Soy-Based	1 (1½ oz)	½ Carbohydrates, 1 Fat
Hummus	½ cup	1 Carbohydrate, 2 Fats
Kadhi, Punjabi made with Besan (Chickpea Flour)	1 cup	1 ½ Carbohydrates, 1 Fat
Lasagna with Meat Sauce	1 (3"x4")	2 Carbohydrates, 4 Fats
Lasagna with Vegetables	1 (3"x4")	3 Carbohydrates, 2 Fats
Macaroni and Cheese, Beans	1 cup (8 oz)	2 Carbohydrates, 2 Fats
Meatless Burger, Soy-Based	3 oz	½ Carbohydrates, 1 Fat
Meal Replacement Bar	1 bar (2 oz)	2 Carbohydrates, 1 Fat
Meal Replacement Shake (Reduced Calorie)	1 can (10-11 oz)	1 ½ Carbohydrates, 1 Fat
Nut Spreads: Almond Butter, Cashew Butter, Peanut Butter, Soy Nut Butter	1 tbsp	2 Fats

Pizza, Cheese Thin Crust	¼ of 10"	2 Carbohydrates, 1 Fat
Pizza, Meat Topping, Thin Crust	¼ of 10"	2 Carbohydrates, 2 Fats
Ravioli, Cheese	1 cup	2 Carbohydrates, 1 Fat
Ravioli, Meat	1 cup	2 Carbohydrates, 2 Fats
Sabudana Khichadi or Savory Tapioca with Potatoes	1 cup	2 Carbohydrates, 2 Fats
Sabudana Vada, Baked	1 piece (30 gms)	2 Carbohydrates, 1 Fat
Sabudana Vada, Fried	1 piece (35 gms)	2 Carbohydrates, 2 Fat
"Sausage" Patties, Soy-Based	1 (1½oz)	½ Carbohydrates, 1 Fat
Soups		1
-Bean	1 cup (8 oz)	carbohydrate
-Cream (made with water)	1 cup (8 oz)	1 carbohydrate, 1 Fat
-Split Pea (made with water)	½ cup (4 oz)	1 carbohydrate
-Vegetable, Beef, or Chicken Noodle	1 cup (8 oz)	1 carbohydrate
Soy nuts, unsalted	¾ oz	½ Carbohydrates, 1 Fat
Tostada or Taco with Beans, Lettuce and Tomatoes	1	1 Carbohydrate, 1 Fat
Tostada or Taco with Meat, Cheese and Lettuce	1	1 Carbohydrate, 3 Fats
Trail Mix		
-Candy and Nut-based	1 oz	1 Carbohydrate, 2 Fats
-Dried fruit-based	1 oz	1 Carbohydrate, 1 Fat

Cakes, Desserts, and Sweets: 30g Carbs (2 Carbohydrates servings)

Food	Amount	Composition
Angel food cake, unfrosted	1/12 cake, 2 oz	2 Carbohydrates
Banana Nut Bread	1" wide slice (1 oz)	2 Carbohydrates, 1 Fat
Brownie, small, unfrosted	1 1/4" square, 1oz	1 Carbohydrate, 1 Fat
Cake, unfrosted	2" square	1 Carbohydrate, 1 Fat
Cake, frosted	2" square	2 Carbohydrates, 1 Fat
Cookie		
Chocolate Chip	2 small (2¼")	1 Carbohydrate, 2 Fats
Gingersnap	3 cookies	1 Carbohydrate, 1 Fat
Plain	2 small	1 Carbohydrate, 1 Fat
Plain, Fat Free	2 small	1 Carbohydrate
Sandwich with crème filling	2 small (¾ oz)	1 Carbohydrate, 2 Fats
Sugar-free	3 small (¾-1 oz)	1 Carbohydrate, 1 Fat
Vanilla wafer	5 pieces	1 Carbohydrate, 1 Fat
Carrot Halwa	1/3 cup *	1 Carbohydrate, 2 Fats
Cupcake, frosted	1 small (1¾ oz)	2 Carbohydrates, 1 Fat
Donut, plain cake	1 medium	1 1/2 Carbohydrates, 2 Fats
Donut, glazed	1 (3 3/4" across)	2 Carbohydrates, 2 Fats

Fruit Cobbler	½ cup (3½ oz)	3 Carbohydrates, 1 Fat
Frozen Pops	1	½ Carbohydrate
Fruit Juice Bars, Frozen	1 Bar (3 oz)	1 Carbohydrate
Fruit Snacks, Chewy	1 Roll (¾ oz)	1 Carbohydrate
Fruit Spreads, 100% fruit	1 ½ tbsp	1 Carbohydrate
Gelatin, regular	1/2 cup	1 Carbohydrate
Granola bar	1 bar	1 Carbohydrate, 1 Fat
Gulab Jamun	1 small *	1 Carbohydrate, 1 Fat
Honey	1 tbsp	1 Carbohydrate
Jam or Jelly, Regular	1 tbsp	1 Carbohydrate
Kulfi	½ cup *	1 Carbohydrate, 2 Fats
Ice cream	1/2 cup	1 Carbohydrate, 2 Fats
Ice cream, light	1/2 cup	1 Carbohydrate, 1 Fat
Ice cream, Fat-free, no sugar added	1/2 cup	1 Carbohydrate
Laddoo	½ small	1 Carbohydrate, 1 Fat
Magas or Besan Laddoo or Barfi	1 piece, 1½" x 1½"	2 Carbohydrates, 3 Fats
Mohanthal	1 piece, 1 ½" x 1 ½"	1 ½ Carbohydrates, 1 Fat
Syrup		
- Chocolate	2 tbsp	2 Carbohydrates
- Maple Syrup Light	2 tbsp	1 Carbohydrate
- Maple Syrup Regular	1 tbsp	1 Carbohydrate
Muffin	¼ muffin (1 oz)	1 Carbohydrate, 1 Fat
Nankhatai	2 small	1 Carbohydrate, 1 Fat
Pie, fruit, 2 crusts	1/6 pie	3 Carbohydrates, 2 Fats
Pie, pumpkin or custard	1/8 pie	1 Carbohydrate, 2 Fats
Pudding, regular, with lowFat milk	1/2 cup	2 Carbohydrates
Pudding, sugar-free, lowFat milk	1/2 cup	1 Carbohydrate
Rasgulla	1 medium (50 gms)	5 Carbohydrates
Rasmalai		
-Nanak	1 piece (80 gms)	1 Carbohydrate, 2 Fats
-Haldiram's	1 piece (83 gms)	1 Carbohydrate, 3 Fats
Sherbet, Sorbet	1/2 cup	2 Carbohydrates
Shrikand, Kesar	¼ cup (50 gms)	1 ½ Carbohydrates, 1 Fat
Sooji Halwa	¼ cup *	1 Carbohydrate, 2 Fats
Sweet Roll or Danish	1 (2 1/2 oz)	2 ½ Carbohydrates, 2 Fats
Syrup, regular	1 tbsp	1 Carbohydrate
Yogurt, frozen,		
- Low Fat, Fat-free	1/3 cup	1 Carbohydrate
- Low Fat with Fruit	1/2 cup	2 Carbohydrates, 0-1 Fat
- Regular	½ cup	1 Carbohydrate, 1 Fat

Free Foods: < 5g carbs and 20 calories

Foods like sugar free sodas and beverages, artificial sweeteners, spices and seasonings fall into this category. A free food is any food or drink that contains less than 20 calories or less than 5 gms of carbohydrate per serving. As no serving size is specified, amount used may be as desired. Items that have a specific serving size should not exceed 3 servings per day.

Fat-free or Reduced-fat Foods

Food	Amount
Cream cheese, fat-free	1 tbsp
Creamers, nondairy, liquid	1 tbsp
Creamers, nondairy, powdered	2 tsp
Mayonnaise, fat-free	1 tbsp
Mayonnaise, reduced-fat	1 tsp
Margarine, fat-free	4 tbsp
Margarine, reduced-fat	1 tsp
Non-stick cooking spray, Salad dressing, mayonnaise-type, fat free	1 tbsp
Salad dressing, mayonnaise-type, reduced fat	1 tsp
Salad dressing, fat free	1 tbsp
Salad dressing, fat-free, Italian	2 tbsp
Salsa	1/4 cup
Sour cream, fat free	1 tbsp
Whipped topping	2 tbsp

Sugar-free or Low-sugar Foods

Candy, hard, sugar-free	1 candy
Gelatin, sugar-free Gum, sugar-free Jam/jelly,	2 tsp
Pancake syrup, sugar-free	2 tbsp
Sugar substitute	

Drinks

Food	Amount
Bouillon or broth without fat Bouillon, ,	
Cocoa powder, unsweetened	1 tbsp
Low-Sodium Carbonated drinks	
Sugar-Free Club soda	
Coffee/tea Drink mixes, sugar-free Tonic water,	

Condiments

Food	Amount
Catsup, Ketchup	1 tbsp
Horseradish	
Lemon or lime juice	
Mustard	
Pickles, unsweetened	1 ½ large
Soy sauce	
Taco sauce	1 tbsp
Vinegar	

Carbohydrate Counting Resources

Gopalan, C., Rama Shastri, B. V., & Balasubramanian, S.C. (1989). *Nutritive value of indian foods*. National Institute of Nutrition, Indian Council of Medical Research.

Holzmeister, L.A. (2010). *The diabetes carbohydrate and fat gram guide*. Academy of Nutrition and Dietetics (AND) www.eatright.org

Kennedy, M.N. (2014). *Exchange list for meal planning*. Diabetes Teaching Center, University of California, San Francisco.

Rodibaugh, R. *The exchange list system for diabetic meal planning*. University of Arkansas Cooperative Extension Service Printing Services.

Warsaw, H.S. & Kulkarni, K. (2011). *ADA complete guide to carbohydrate counting*. Retrieved from <http://www.diabetes.org/food-and-fitness/food/what-can-i-eat/understanding-carbohydrates/carbohydrate-counting.html>