

Carbohydrate Counting for Traditional South Asian Foods



Ashwini Wagle, M.S., R.D, Doctoral Student
Associate Professor and DPD Director
Department of Nutrition, Food Science and Packaging
San Jose State University

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

Ashwini Wagle, MS, RD is an Associate Professor and Director for the Didactic Program in Dietetics (DPD) in the Department of Nutrition, Food Science and Packaging at San Jose State University. Ashwini Wagle earned her MS in Food and Nutrition from Indiana University of Pennsylvania (IUP) in 93 and is currently a doctoral student in Educational Leadership (Ed.D) at University of New England. She comes to San Jose State University with over ten year experience as a registered dietitian (RD) in several skilled nursing facilities and acute care hospitals in the San Francisco Bay Area. Ashwini Wagle is also involved with several on-campus and off-campus organizations and serves on the committees for organizations such as the South Asian Heart Center at El Camino Hospital, Center for Healthy Aging in Multicultural Populations (CHAMP), Education Committee of the California Dietetic Association (CDA), San Jose Peninsula District of California Dietetic Association (SJPD), Cal-Pro Net Center.

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.

Contact Information:

Ashwini Wagle, MS, RD, Doctoral Student
Associate Professor and DPD Director,
Department of Nutrition, Food Science and Packaging,
San Jose State University
Email: ashwini.wagle@sjsu.edu

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 | ⅓ cup |
| Cassava | ⅓ 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) | ⅓ cup |
| Plantain (ripe) | ⅓ 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 | ⅓ 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 | ⅓ 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>