

How to Eat with Diabetes

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People with diabetes do not need to eat special foods. The foods that are good for you are good for everyone. When you eat **carbohydrates**, found in foods like grains, starchy vegetables, fruits, milk products, sweets and sugary drinks, it get digested and turns into blood glucose or blood sugar for your body to use for energy. Your brain can only use carbohydrate for its energy needs and your muscles like to use some of this blood sugar (glucose) from carbs, too.

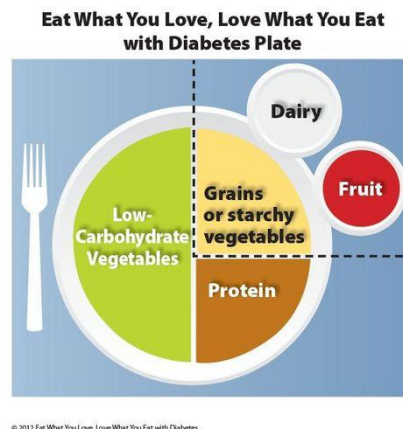
When you eat carbohydrates, **insulin**, a hormone made by the pancreas, is released to get the blood sugar/glucose out of the blood into the cells of our body. With diabetes, the insulin doesn't work properly and some of the sugar remains in the blood.

When you eat only carbohydrates for a meal or snack, digestion happens rapidly and food is quickly moved into the blood and ready for the cells. When you add protein and/or fiber to the carbohydrate, digestion moves more slowly, food is more slowly released into the blood stream and blood sugar doesn't go up quite so quickly.

What is the Meal Plan for Diabetes Management?

It is important to eat regular meals to keep blood sugar steady throughout the day. Meals should be consistent and contain healthy amounts of high fiber carbohydrate, lean protein and healthy fats.

Make half your plate non-starchy/low carbohydrate vegetables. Then round out your meal with a small portion of whole grain starch or legumes and a lean protein. Include healthy fats such as olive oil based dressings, olives, nuts, or avocado.



Control the portions of grain foods like rice, cereal, bread, pasta, starchy vegetables like potatoes, corn, peas, fruit/fruit juices and dairy foods to better manage blood glucose.

For adults a healthy meal plan may contain the following per day:

3 - 5 cups of non-starchy vegetables – These are high nutrient, low carb, low calorie foods!

2 servings (1 ½ - 2 c.) of fruits – Eat whole/cut fruit instead of fruit juice

6 servings (1/2 c each) grains and starchy foods such macaroni/pasta, bread, rice, cereals, legumes/dry beans/peas/lentils, or starchy vegetables like potatoes, sweet potatoes, yams

2 servings of low fat or fat free milk OR lactose – free OR alternates like almond, soy “milks”

1 serving = 1 c. milk or alternate OR 6 oz. low fat/Greek yogurt OR 1 oz. low fat cheese

6 oz. of lean protein: meat, chicken, egg, turkey, fish/seafood, pork or plant protein such as soy/tofu, nuts, nut butters, beans (1/2 c.)

5-6 servings healthy fat: 1 serving = 1 teaspoon poly- or monounsaturated oils from plants like olive, canola, peanut, corn, sunflower, safflower, sesame. Healthy fats are liquid a room temperature. Choose salad dressings and spreads that are made from these healthy oils. 1 tablespoon dressing, reduced fat butter, margarine, cream cheese = 1 serving, ½ Tablespoon peanut butter, 2 Tablespoons sour cream, 5 small olives, 1/8 avocado are other healthy fats.

The actual amounts for each food group depend on the calories you need per day. Your calorie needs are based on your gender, size, age, and activity level. If you eat the right number of calories, this can help you reach and maintain a reasonable weight. Children must eat enough calories to grow and develop normally so it is important that their calories are not limited. We all need a complete mix of healthy foods from all the food groups to obtain all the **nutrients** are body cannot make itself.

Start with a 9-inch plate and fill half your plate with non-starchy vegetables

¼ of starch/carbs and ¼ protein foods.



Meet the Nutrients: Carbohydrate, Protein, Fat, Vitamins, Minerals & Water

What are carbohydrates?

Carbohydrates are the starches and sugars in foods and drinks. Starch is in pasta, cereal, potatoes, beans, peas, lentils, and bread. Natural sugars are found in fruit, milk, and starchy vegetables. Added sugars are found in dessert, candy, jams and syrup. All forms of carbohydrates provide 4 calories per gram and can raise blood sugar levels. The brain, nervous system, and muscles use carbohydrate so it is important to include some with each meal. Eating roughly the same moderate amount of carbohydrate daily at meals and snacks and keeping physically active can help keep your blood glucose levels within your target range.

CARBOHYDRATES

Understanding Carbohydrate Servings

For convenience each carbohydrate food listed is shown in portions that contain about 15 grams of carbohydrate. We call these the **Carbohydrate Servings**. Becoming familiar with the sources of carbohydrates and these serving sizes helps us manage how much carbohydrate we take in with each meal, snack or drink.

1 Carbohydrate Serving contains 15 grams of carbohydrate

Grains/Starchy Vegetables

- ¼ regular bagel or ½ thin bagel
- 1 slice bread or 1 small roll
- ½ c peas, corn
- 6 crackers (saltine type)
- ½-1 c dry cereal
- ½ English muffin
- ½ c grits/ cream of wheat/oatmeal
- ½ bun
- 1/3 c pasta, rice, beans
- ½ c potatoes
- 1 waffle
- 3 c popcorn

Fruits

- 1 small apple
- 1 6 inch banana
- ¾ c blackberries, blueberries
- 1 c cantaloupe
- ½ grapefruit
- ½ c. juice
- ¼ c. dried fruit

1 Carbohydrate Serving contains 15 grams of carbohydrate

Fruits continued

- 17 grapes
- 1 small orange
- 1 med. Peach, pear
- ¾ c pineapple
- 2 plums
- 1 c raspberries
- 1 ¼ c whole strawberries
- 1 ¼ c watermelon

Milk

- 1 cup skim (fat free) or 1% milk (low fat)
- 2/3 c nonfat or low fat yogurt, plain or sweetened with artificial sweeteners
- 2/3 c nonfat Greek yogurt, plain
- 2/3 c nonfat Greek yogurt with fruit= 1 ½ servings of carbohydrate (110-140 kcal)

Sweets

- 1 ¼ inch square brownie
 - 2 - inch square unfrosted cake
 - 2 (2 ¼ inch diameter) cookies
 - ¼- ½ c frozen yogurt
 - ½ c gelatin
 - ½ regular ice cream
 - ¼ c sherbet or sorbet
 - 5 vanilla wafers
- **some also contain fat servings

THE NON-CARBOHYDRATES

Non-starchy/Low Carbohydrate Vegetables

- ½ c cooked vegetables
- 1 c raw vegetables

Eat more of these!! Artichoke hearts, Asparagus, Baby Corn, Bamboo Shoots, Green/String/Romano/Italian Beans, Wax/Yellow Beans, Broccoli, Brussels Sprouts, Cabbage-Green/Purple-Red/Bok Choy, Savoy/Chinese, Carrots, Cauliflower, Celery, Cucumber, Eggplant, Green Onions/Scallions, Greens-Collards, Kale, Mustard, Turnip, Beet, Leeks, Mixed Vegetables (***without*** corn peas or pasta), Mushrooms, all kinds, fresh, Okra, Onions, Edible Pod Peas/Snow Peas, Peppers, Radishes, Sauerkraut, Soybean Sprouts, Sprouts, Spinach, Summer Yellow Squash, Crookneck Squash, Tomato, Turnips, Water Chestnuts, Zucchini

Eat 3-5 cups+ of these non-starchy veggies each day for fiber, vitamins and minerals.

These healthy plant foods are also rich in phytonutrients that act as antioxidants and other special functions such as reducing risk of cancers, eye health, improving memory and more!

Choose a variety of these colorful vegetables every day.



What are proteins?

Proteins are found in poultry, meats, fish, milk and other dairy products as well as eggs, beans, peas, nuts, seeds, and lentils. Starches and other vegetables also have small amounts of protein. The body uses protein for growth, maintenance, and energy. Protein has 4 calories per gram. Your body needs insulin to properly use any protein you eat.

PROTEINS

- 1 oz of meat or cheese
- ½ c beans, peas, lentils (also count as 1 starch)
- 2 egg whites
- ¼ c egg substitute
- ¼ c cottage cheese
- 2 Tablespoon grated Parmesan or ricotta
- ½ c tofu
- ¼ c tempeh
- 3 slices bacon
- 1 Tbsp peanut butter

What are fats?

Butter, margarine, salad dressings, oils, nuts, seeds, milk, cheese, meat, fish, poultry skin, snack foods, ice cream, chocolate, and desserts are all sources of fat. There are different types of fats: monounsaturated, polyunsaturated, saturated and trans fats. Saturated fats should be limited in diet for heart health. They are found in fatty cuts of meat, the skin on poultry, whole milk, cheese, coconut oil, palm oil, and palm kernel oil. Trans fats are fats that have been hydrogenated and are found in stick margarine, shortening, some brands of

microwave popcorn, commercial cake icing, and some brands of baked dessert type food. These should be eliminated from the diet for heart health. Read the ingredient list to find these fats.

Monounsaturated fat is the healthiest of fats and is found in canola oil, olive oil, nuts, and avocado. Polyunsaturated fats are also healthy and are found in corn oil, soybean oil and sunflower oil. Finally, Omega 3 is a type of polyunsaturated fat that protects the heart. Eat 2-3 servings of foods each week that contain Omega 3 such as flax seed, salmon, tuna, sardines, mackerel. An omega 3 supplement may also be needed.

FATS

- 2 Tablespoon avocado
- 1 tsp oil
- 8 black olives
- 10 green olives
- 6 almonds, cashews
- 6 mixed nuts
- 10 peanuts
- 4 pecan halves
- ½ Tablespoon peanut butter
- 2 tsp tahini
- 1 tsp margarine or butter
- 1Tbsp lower fat margarine
- 1 tsp mayonnaise
- 1 Tbsp sunflower or pumpkin seeds
- 2 Tbsp cream or half and half
- 1 Tbsp cream cheese
- 1 slice bacon
- 1 Tbsp sour cream

Combination Foods

½ cup tuna or chicken salad – ½ carbohydrate, 2 meats, 1 fat
Veggie burger- ½ carbohydrate, 2 meats
Thin crust pizza, 2 slices of a large pizza- 2 carbohydrate, 2 meats, 2 fats
Bean Soup, 1 cup- 1 carbohydrate, 1 meat
Tomato Soup (made with water), 1 cup (8 fluid oz.) - 1 carbohydrate
Vegetable beef, chicken noodle or other broth type soup, 1 c- 1 carbohydrate

Fast Foods – *Visit the website of your favorite fast food, take out place or restaurants and find out what's in the foods you eat often. You can always ASK your server to find out how foods are made, too. ASK for non-starchy alternates to fries, potatoes.*

Burrito with beef, (5-7 oz.) - 2 carbohydrates, 1 meat, 1 fat
Chicken nuggets, 6 – 1 carbohydrate, 2 meats, 1 fat
Breaded and fried chicken breast and wing - 1 carbohydrate, 4 meats, 2 fats
Grilled chicken sandwich - 2 carbohydrates, 3 meats
Buffalo wings, 6 - 1 carbohydrate, 5 meats, 2 fats
French fries, medium- 4 carbohydrates, 4 fats
Hamburger (small 2-3 oz.)- 2 carbohydrates, 2 meats
Hamburger (large 3-4 oz.) - 2 carbohydrates, 3 meats, 1 fat
Individual pan pizza- 5 carbohydrates, 3 meats, 3 fats

Sub sandwich (regular)- 3 ½ carbohydrates, 2 meats, 1 fat
Taco, hard or soft, 1- 1 carbohydrate, 1 meat, 1 fat

OTHER NUTRIENTS

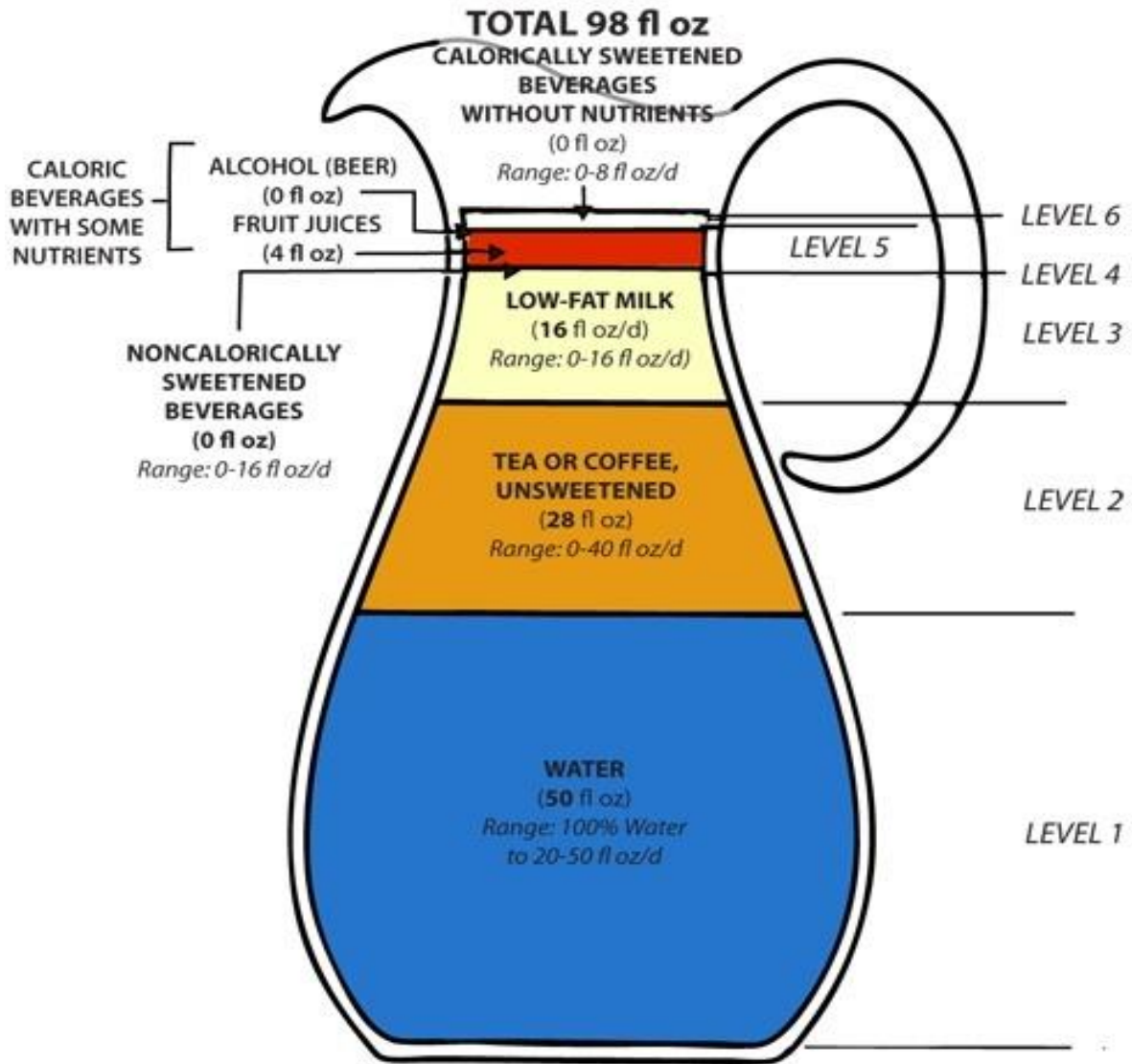
Vitamins and Minerals

If you eat a variety of whole grains, fruits and vegetables, you probably do not need a vitamin or mineral supplement to get these micronutrients. The exception would be **Vitamin D** and your doctor may prescribe this if needed. Ask your doctor to be tested for your Vitamin D levels each year. It is not always a routine blood test. If you are not sure about taking any supplement be sure to talk to your doctor and/or registered dietitian nutritionist.

Salt or Sodium: High blood pressure can be made worse by eating too much salt or sodium. Limit salty snack foods, processed foods, canned foods, and use less or no salt with cooking. Read the Nutrition Facts label to check the amount of sodium in your foods.

Water!!!? Yes! WATER IS A NUTRIENT

Our body cannot make water and we need it to survive. Therefore, it is a nutrient and we must drink it every day. Drink 8 – 8 oz. glasses daily. Other liquids contain water. **But it's the water we need!!**



| Cocktail | Serving Size | Cal | Carb (gm) | Rating |
|--|--------------|-----|-----------|--------|
| Wine Spritzer (with seltzer) | 6 oz | 88 | 2.8 | ***** |
| Champagne (Brut) | 6 oz | 120 | 2.4 | ***** |
| White Wine | 6 oz | 146 | 4.6 | ***** |
| Red Wine | 6 oz | 148 | 4.6 | ***** |
| Vodka / Soda / Splash Cranberry (no ice) | 6 oz | 160 | 6 | **** |
| Mojito (no ice) | 6 oz | 149 | 5.8 | **** |
| Beer (Light) | 12 oz | 104 | 5.8 | **** |
| Sangria (no ice) | 6 oz | 131 | 17 | *** |
| Gin and Tonic (no ice) | 6 oz | 137 | 12.6 | *** |
| Beer (Regular) | 12 oz | 153 | 12.8 | *** |
| Frozen Margarita | 8 oz | 218 | 12.2 | *** |
| Cosmopolitan | 4 oz | 213 | 13 | *** |
| Frozen Daiquiri | 8 oz | 196 | 16.9 | ** |
| Cape Cod (no ice) | 6 oz | 195 | 17 | ** |
| Tequila Sunrise (no ice) | 6 oz | 205 | 16 | ** |
| Mai Tai (no ice) | 6 oz | 464 | 44.7 | * |
| Pina Colada | 6 oz | 332 | 43 | * |

IN MODERATION

What about Sugar?

We do not *need* sugar. It's true that it is a natural sweetener in fruits (fructose) milk (lactose) and grains (maltose) but it is also hidden or added to many foods especially baked goods like crackers, cakes, muffins, pies, candy, sauces, dips, ketchup, syrups, jams, etc. They contain table sugar or sucrose or its cousins-- dextrose, maltose, cane juice/syrup, high fructose corn syrup. Because these are all forms of sugar, they quickly raise our blood sugar (glucose). If you choose a sugary food for your Carbohydrate Serving, limit other carbs or wait to have these concentrated sweets when your blood sugar is in normal range. Don't forget all the sugar found in sugary drinks, too. These instantly raise your blood sugar and cause weight gain. Sweet Tea, Soda, Fruit Punch, Lemonade, Monster/Energy Drinks, Sports Drinks are just sugar delivery systems so opt for good old water most of the time.

What about Artificial Sweeteners?

We don't need these either. While artificial sweeteners will not cause weight gain or raise your blood sugar, we do not know the long-term side effects of including daily doses in your diet. Some research has linked excess use of these sweeteners with an increase in appetite especially for more sweet foods and drinks. See if you can do with less of these.

What about Alcohol? If you choose to have alcohol, men should limit consumption to 2 or fewer drinks per day and women to one or less per day. A drink is: 5 oz. wine, 12 oz. beer or 1.5 oz. distilled spirits. Remember each gram of alcohol contains 7 calories. Be sure to drink your alcohol with food to slow down its absorption.

Do not replace your carbohydrate intake with alcohol. If you take insulin, alcohol can make sure your blood sugar drop, so it is important to eat some carbohydrates while drinking alcohol. Besides affecting blood sugar, excess alcohol can cause other problems such as liver problems, GI and other distress not to mention the intoxicating effects of alcohol on the brain.