

Just the Basics

A Guide to Diabetes Management



Let's Talk About Diabetes

Diabetes is a chronic (long-lasting) condition that affects how the body turns food into energy.

Most of the food you eat is broken down into glucose (sugar) and released into your blood. When your blood sugar rises, it signals your pancreas to release insulin. Insulin acts like a key to allow blood sugar into your body's cells for use as energy.

If you have diabetes, your body either doesn't make enough insulin *or* can't use the insulin it does make properly. This causes a buildup of blood sugar (high blood sugar). Over time, serious health problems, such as heart disease, vision loss, and kidney disease may develop.

Although there is no cure for diabetes, eating well and being active can really help. Taking medicine as needed, getting diabetes education and support, and keeping health care appointments can also reduce the impact of diabetes on your life.

Diet and Diabetes

A common myth is that if you have diabetes you can't eat sweets. But the truth is there are no foods that someone with diabetes can't eat. All foods can be eaten *in moderation*. The carbohydrates (AKA carbs) just need to be counted.

Calories in food come from three sources: carbohydrate, protein, and fat. Each of these macronutrients affects blood sugar differently. Carbs, which includes both sugar and starch, have the biggest effect on blood glucose as they are immediately broken down to glucose after a meal. The main sources of glucose in food come from fruit, breads, pastas, rice, milk, desserts, and some vegetables.

A method of meal planning called Carbohydrate Counting will help keep your blood glucose levels in your target range. All you need to remember is that the *amount* of carbs you eat matters most!

Eating equal amounts of carbohydrates will raise blood glucose about the same amount. The total *amount* of carbohydrate, not its source (e.g. tortilla versus cake), is the critical factor affecting blood glucose levels after a meal. However, this does not mean that now you can indulge in cookies and cakes every day. Rather, it recognizes that when total calories and nutrients are considered, sugar can be eaten in modest amounts as part of a balanced diet.

Tips for Good Blood Glucose Control:

- **Eat three meals a day.**
- **Eat around the same times every day.** Aim to eat within 1 hour of your usual time.
- **Avoid skipping meals.**
- **Count your carbohydrates.** Limit carbohydrate servings to 2 - 3 servings per meal.
- **Eat protein at every meal.**
- **Eat a lot of non-starchy vegetables.** These are very low in calories, a great source of vitamins and minerals, and contain plenty of fiber.
- **Eat a variety of healthful foods.** Follow the Healthy Plate guide on page 8. Aim to have a rainbow of colors on your plate.
- **Eat more high fiber foods** (Whole grain breads and cereals, lentils, dried beans and peas, brown rice, fruit and vegetables). Foods high in fiber help you feel full and lower blood glucose and cholesterol levels.
- **Limit foods that are high in added sugars.** The more sugar you eat, the higher your blood glucose will be. Artificial sweeteners can be useful.
- **Eat less fat,** especially less saturated and trans-fat. Choose lean meats and low-fat dairy products, snacks and desserts. Try “light”, “low-fat” and “fat-free” products in place of regular products.
- **Enjoy caffeine in moderation.** Caffeine may raise blood glucose levels. Drink small portions of coffee, caffeinated tea, and caffeinated soda. Choose artificial sweeteners to add to coffee such as Sweet n’ Low, Equal, or Stevia instead of sugar.
- **Check your blood glucose level.** Checking your blood sugar one hour after a meal can reveal how the food you eat affects your diabetes. If you can’t check your blood sugar, pay attention to how you feel. Do you notice a difference in the way you feel when you eat a high carb meal? How do you feel if you haven’t eaten in a long time?
- **Be physically active.** Regular physical activity will improve your blood glucose control. Walking is good exercise.
- **Prioritize mental health.** Stress can raise blood glucose levels.
- **Maintain a healthy weight.** If overweight, losing weight can reduce the amount of medication you need. A healthy weight helps with blood glucose control.
- **Avoid smoking.**

Counting Carbohydrates

Every carbohydrate you eat is digested and broken down to glucose.

We need carbohydrates to provide us with important nutrients such as vitamins, minerals, and fiber and to give us energy to support proper body function.

The more carbohydrates you eat in a meal, the higher your blood sugar rises. So, the key to normal glucose levels is eating the right amount of carbs to balance the insulin your body produces or the amount of insulin you inject.

Carbohydrate counting is the best way to manage blood glucose levels. Carb counting is choosing the right *amount* of sugar and starch (carbohydrates) for each meal.

When you know how much carbs are in foods, you can spread your carbs throughout the day, preventing high blood sugar levels.

Be aware that “sugar-free” foods may still contain a lot of carbs from other ingredients. It’s important to always look at the nutrition label on food packages to see how many grams of carbs are in each serving. This will give you all the information you need for carbohydrate counting.

For most people, 2-3 servings of carbohydrates at each meal will help achieve a healthy blood glucose level.

Carbohydrates

15 grams = 1 serving

30 grams = 2 servings

45 grams = 3 servings

60 grams = 4 servings

Understanding Food Labels

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
<hr/>	
Amount per serving	
Calories	230
<hr/>	
	% Daily Value*
Total Fat 8g	10%
Saturated Fat 1g	5%
<i>Trans</i> Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
<hr/>	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 240mg	6%
<hr/>	
<small>* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.</small>	

Serving Size

All the information on the label is based on this portion. If you eat double the serving size, you will eat double the nutrients and calories.

(The serving sizes are not a recommendation of how much you should have)

Serving per Container

The number of servings contained in the package

Total Carbohydrate

This is the total grams of carbohydrate in one serving.

It includes carbs from fiber and sugar.

If counting carbohydrates, subtract the Dietary Fiber from the Total Carbohydrates to find out the NET grams of carbs. NET carbs are what we use for carb counting.

(Fiber is a carb but does not affect blood glucose levels)

In this example, we subtract 4 grams of fiber from 37 grams of carbs to get 33 Net Grams.

Blood Glucose Variations

Blood glucose level can be affected by many things.

What Lowers Blood Glucose:

- Not Eating Carbohydrates
- Exercise
- Protein
- Fiber
- Weight Loss
- Diabetes Medication/Insulin

What Raises Blood Glucose:

- Eating Carbohydrates
- Stress
- Illness
- Excessive Caffeine

Blood Glucose Ranges:

Time	Goal Range without Diabetes	Goal Range with Diabetes
Before Breakfast	<100	80-130
Before Lunch/Dinner	<110	80-130
Two Hours After Meals	<140	<180
Bedtime	<120	90-150
A1C	<5.7%	<7%

Symptoms of Hyperglycemia (High BG):

- Increased thirst
- Frequent urination
- Hunger
- Blurry Vision
- Fatigue/Tiredness
- Itchy/Dry skin
- Losing weight without trying
- Poor wound healing

Symptoms of Hypoglycemia (Low BG):

- Confusion
- Headache
- Dizziness
- Shaky
- Fast Heartbeat
- Sweaty
- Anxious
- Irritable/Grumpy
- Hungry
- Drowsiness
- Seizure

What to do if your blood glucose is low (<70):

Remember the "Rule of 15"

Step 1: Treat hypoglycemia with **15 grams of carbs** (a cup of juice, half a soda, 4 pieces of hard candy, etc.)

Step 2: Wait **15 minutes** and check your blood sugar again

Step 3: If your blood sugar is still below 70, repeat steps 1 and 2

Protein and Fat

When protein and fat are eaten with carbohydrates, blood glucose won't rise as quickly or as much, which is good! Always try to eat some protein with each meal.

Although fat does not contain carbohydrates, it may affect your blood glucose level. You may find that 2 hours after a meal containing a lot of fried food or cheese, your blood glucose is normal, but 4-6 hours later it is high. This is because fat slows down the absorption of the carbohydrates so it takes longer to enter the blood.

Most people eat too much fat. Too many servings of foods high in fat can increase risk of heart disease and can cause weight gain. Limit your intake of high fat foods such as creams, sauces and fried foods, as well as your portions of butter, margarine, salad dressing, and oils.

Fat consumption, especially consumption of saturated fat, increases insulin resistance.

Not All Fats Are Created Equal

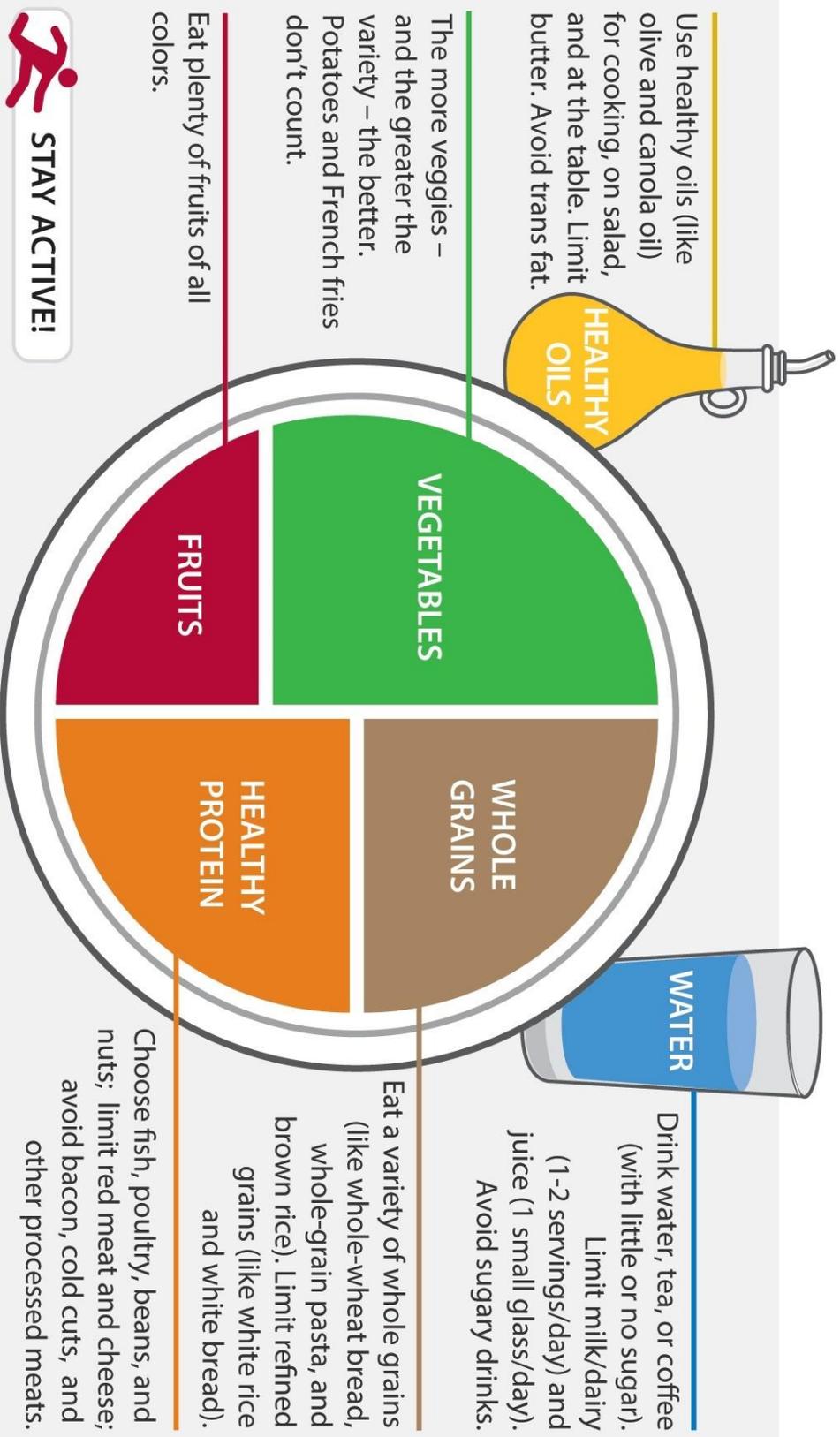
Type of Fat	Source
Monounsaturated 😊	Olive oil, canola oil, peanut oil, avocado, nuts
Polyunsaturated 😊	Fish, nuts, safflower oil, sunflower oil, & corn oil.
Trans fat 😞	Margarines, & packaged foods such as cookies & crackers
Saturated 😞	Milk, cheese, yogurt, butter, all animal fat, coconut oil & palm oil

High Fat Sources to avoid:

Healthier Alternatives:

Creamy Sauces/Alfredo Sauce.....	Tomato based sauces
Cheese Sauces.....	Salsa or guacamole
Au Gratin.....	Roasted Cauliflower
Fried Foods.....	Baked, Broiled, Grilled, Steamed, Poached
Butter Sauce.....	Hold the butter, try lemon juice
Sour Cream.....	Hold the sour cream
Oil.....	Reduce amount & choose olive or canola oil
Batter Fried.....	Avoid. Choose grilled
Cream Soups.....	Broth soups, bean or vegetable soups
Sandwiches.....	Hold the mayo, choose mustard or vinegar
Salad Dressings.....	Choose vinaigrettes, light Italian or lemon juice
Salad Extras.....	Hold the croutons and cheese
Ice Cream.....	Berries and cool whip

HEALTHY EATING PLATE



STAY ACTIVE!

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The Nutrition Source
www.hsph.harvard.edu/nutritionsource

Harvard Medical School
Harvard Health Publications
www.health.harvard.edu



Carbohydrates

*Choose 2-3 of these servings at every meal.
Not 2-3 from each group but 2-3 from the whole page.*

Starches:

Bagel, ½
Beans, ½ cup
Bread, sliced, 1 slice
Bread roll, 1 small
Biscuit, 1 small
Cereal, unsweetened ¾ cup
Cereal, frosted, ½ cup
Cornbread, 2 inch cube
Crackers, whole wheat, 6
Cream of Wheat, ½ cup cooked
English muffin, ½
Fry Bread, 1 6 inch piece
French Fries, 8
Granola, ¼ cup
Hamburger or Hot Dog Bun, ½ bun
Oatmeal, ½ cup cooked
Pancakes, 1 4-inch
Pasta, ½ cup
Pita Bread, ½ pita
Pizza, ½ slice
Popcorn, 3 cups plain
Rice, 1/3 cup
Stuffing, 1/3 cup
Tortilla, Flour, 6 inch
Tortilla, Corn, 2 small
Tortilla Chips, 6

Starchy Vegetables:

Corn, ½ cup
Corn, 1 Medium Cob
Peas, ½ cup
Potato, ½ medium
Potato, mashed ½ cup
Squash ½ cup
Sweet Potato/Yam, ½ cup

Fruit:

Apple, 1
Applesauce, ½ cup
Apricots, 4 whole
Apricot, canned ½ cup
Banana, 1 small
Blackberries/Blueberries, 1 cup
Cherries, 12
Dates, 3
Figs, 1 ½
Grapes, 8
Kiwi, 1
Mango, ½
Melon, 1 cup cubed
Mixed canned fruit, ½ cup
Nectarine, 1
Orange, 1
Papaya, ½
Peach, 1
Pineapple, 1/3 cup
Plum, 2
Prune, 3
Raisins, 1/8 cup
Grapefruit, ½

Dairy

Milk, 1 cup
Yogurt, plain 2/3 cup



Protein

*Choose one of these foods at every meal.
Choose lean (low-fat) options more often, like poultry and seafood
One serving sizes is 3 oz. (roughly the size of a deck of cards)*

Beans, cooked ½ cup
Beef
Beef Jerky
Buffalo
Cheese, shredded ¼ cup
Chicken
Cottage Cheese, ¾ cup
Deer
Eggs, 2
Elk
Fish
Legumes, 1 cup
Lentils, ½ cup
Moose
Nuts, ¼ cup
Nut Butter, 2 Tbsp.
Pork
Shrimp, 10 medium
Tofu
Turkey
Quinoa, 1 cup
Yogurt, 1 cup

Benefits of Protein:

1. Helps regulate blood sugar levels
2. Helps you feel and stay full
3. Builds muscle

* Beans, lentils and other legumes contain protein but they should be considered a carbohydrate when trying to manage blood glucose.



Non-Starchy Vegetables

Eat as much of these as you want.

Non-Starchy Vegetables do not raise blood glucose levels significantly.

Aim to fill half your plate with non-starchy vegetables at each meal.

Alfalfa Sprouts

Artichoke/Artichoke Hearts

Asparagus

Baby Corn

Bamboo Shoots

Bean sprouts

Beans

-Green Beans

-Italian Beans

-Wax Beans

-Yard Long Beans

-Yellow Beans

Beets

Bell Peppers

Broccoli

Brussels sprouts

Bok Choy

Cabbage

Carrots

Cauliflower

Celery

Cucumbers

Eggplants

Hearts of Palm

Jicama

Kohlrabi

Lettuce/Leafy Greens

-Arugula

-Chicory

-Collard Greens

-Dandelion Greens

-Endive

-Escarole

-Kale

-Mustard Greens

-Spinach

-Swiss Chard

Leeks

Mexican Squash

Mushrooms

Nopales/Cactus

Okra

Onions

Peppers

Radishes

Rhubarb

Rutabaga/Turnips

Peas

Summer Squash

-Zucchini

-Yellow Squash

Tomatoes/Tomatillos

Water Chestnuts



Breakfast Suggestions

- | | |
|---|----------------------------|
| 1. 1 cup oatmeal, cooked | 2 carb servings (30 grams) |
| 3 slices turkey bacon | 0 carb servings |
| 1 fruit serving | 1 carb serving (15 grams) |
| 2. 1 slice whole grain toast or tortilla | 1 carb serving (15 grams) |
| 2 Tablespoons peanut butter | 0 carb servings |
| 1 fruit serving | 1 carb serving (15 grams) |
| 3. 2 fruit servings | 2 carb servings (30 grams) |
| 1 Cup Greek Yogurt | 1/2 carb serving (7 grams) |
| ¼ cup assorted nuts | 0 carb servings |
| 4. 2 Scrambled eggs | 0 carb serving |
| Waffle & Sugar Free Syrup | 1 carb serving (15 grams) |
| 1 Cup Strawberries | 1 carb serving (15 grams) |
| 5. Smoothie | |
| -1/2 cup plain Greek yogurt | ½ carb serving (7 grams) |
| -1/2 cup juice | 1 carb serving (15 grams) |
| -1 banana | 1 carb serving (15 grams) |
| 1 hard-boiled egg | 0 carb servings |
| 6. 1 Bagel | 2 carb servings (30 grams) |
| 1 Tbsp. Cream Cheese | 0 carb servings |
| 1 Fruit serving | 1 carb serving (15 grams) |
| 7. Breakfast burrito | |
| -1 egg | 0 carb servings |
| -Chopped onion/bell pepper | 0 carb servings |
| -2 Tbsp. salsa | 0 carb servings |
| -1 Tortilla | 1 carb serving (15 grams) |
| -2 Healthy Choice Sausages | 0 carb servings |
| 8. McDonald's Egg McMuffin | 2 carb servings (30 grams) |
| ½ cup orange juice | 1 carb serving (15 grams) |

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|--|----------------------------------|
| 9. Omelet | |
| -2 Eggs | 0 carb servings |
| -Broccoli, Onion, Bell Pepper, Avocado | 0 carb servings |
| -Sprinkle low-fat shredded cheese | 0 carb servings |
| 2 slice whole grain toast | 2 carb serving (30 grams) |
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| 10. Turkey Bacon | 0 carb servings |
| 1 scrambled egg | 0 carb servings |
| 1 fruit serving | 1 carb serving (15 grams) |
| 2 small corn tortillas | 1 carb servings (15 grams) |
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| 11. 1 slice whole grain toast | 1 carb serving (15 grams) |
| 2 Tablespoons peanut butter | 0 carb servings |
| 1 Banana sliced on top | 1 carb serving (15 grams) |
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| 12. Cheerios, 1 ½ cup | 2 carb serving (30 grams) |
| 1 cup milk | 1 carb serving (12 grams) |
| Small handful of nuts | 0 carb servings |
|
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| 13. Beans, cooked, 1 cup | 2 carb servings (30 grams) |
| ½ cup ground turkey mixed in | 0 carb servings |
| 6 inch Flour Tortilla | 1 carb serving (15 grams) |
| Green chili | 0 carb serving |
|
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| 14. 1 Apple | 1 carb serving (15 grams) |
| 2 Tbsp. peanut butter | 0 carb servings |
| 1 slice whole wheat toast | 1 carb serving (15 grams) |
|
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| 15. 1 String Cheese | 0 carb serving |
| 1 Cup Oatmeal | 1 carb servings (15 grams) |
| 1 Fruit Serving | 1 carb serving (15 grams) |

Lunch/Dinner Suggestions

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|--|----------------------------|
| 1. 2 cup Campbell's Spicy Chicken Noodle Soup | 2 carb servings (32 grams) |
| Side Salad & vinaigrette dressing | 0 carb servings |
| 1 fruit serving | 1 carb serving (15 grams) |
| 2. 3 oz. Tuna | 0 carb servings |
| 2 slices whole wheat bread | 2 carb servings (30 grams) |
| Tomato/Lettuce/Pickles | 0 carb serving |
| 1 serving Hippeas chickpea puffs | 1 carb serving (15 grams) |
| 3. 1 cup Progresso Canned Minestrone soup | 1 carb serving (15 grams) |
| 1 serving fruit | 1 carb servings (15 grams) |
| 1 cup green beans | 0 carb servings |
| 1 bread roll | 1 carb serving (15 grams) |
| 4. 3 oz. Sliced Roast Beef, fat removed | 0 carb serving |
| 2 cup roasted carrots | 0 carb serving |
| 2 roasted golden potatoes | 3 carb serving (45 grams) |
| 5. 1 hot dog bun | 2 carb servings (30 grams) |
| 1 hot dog + condiments of choice | 0 carb serving |
| 1 serving of fruit | 1 carb serving (15 grams) |
| 6. 3 oz. Grilled Chicken | 0 carb serving |
| 1 serving grilled pineapple | 1 carb serving (15 grams) |
| 1 cup broccoli | 0 carb serving |
| 2/3 cup wild rice | 2 carb servings (30 grams) |
| 7. Fish Tacos: 3 oz. cod | 0 carb serving |
| 4 corn tortillas | 3 carb serving (45 grams) |
| 1 cup cabbage & 1 cup carrots | 0 carb serving |
| 8. Chicken Quesadilla: | |
| 3 flour tortillas | 3 carb servings (45 grams) |
| 2/3 cup cheese, Avocado, Salsa | 0 carb serving |
| 3 oz. grilled chicken strips | 0 carb serving |
| Side Salad & Light Italian Dressing | 0 carb servings |

9. Shrimp & Rice Bowl: 3 oz. Shrimp	0 carb serving
2/3 cup rice	2 carb servings (30 grams)
¼ cup corn & ¼ cup black beans	1.5 carb serving (22 grams)
Avocado, Diced Tomatoes, Lemon juice	0 carb serving
10. 4 oz. steak	0 carb serving
½ cup baked beans	1 carb serving (15 grams)
2/3 cup brown rice	2 carb serving (30 grams)
1 cup Brussels sprouts	0 carb servings
11. 1 Medium baked potato	2 carb servings (30 grams)
1 cup broccoli	0 carb serving
1 cup chili	1 carb serving (15 grams)
¼ cup shredded cheese	0 carb serving
Side salad & low-fat dressing	0 carb serving
12. Egg Salad Sandwich	
2 Pieces whole grain bread	2 carb servings (30 grams)
1 cup egg salad	0 carb serving
1 cup raw carrots & 2 Tbsp. Ranch	0 carb serving
1 “Sargento” balanced break snack pack	1 carb serving (15 grams)
13. 3 oz. Salmon	0 carb serving
2 cup zucchini	0 carb serving
2/3 cup pasta	2 carb serving (30 grams)
1 small piece garlic bread	1 carb serving (15 grams)
14. Beef Broccoli Stir Fry:	
3 oz. beef	0 carb serving
2 cup stir fry vegetables	0 carb serving
1 cup wild rice	3 carb serving (45 grams)
15. Taco Salad:	
3 oz. ground turkey & taco seasoning	0 carb serving
Lettuce, Tomatoes, Peppers, Onion	0 carb serving
1/3 cup pinto beans	1 carb serving (15 grams)
1/3 cup corn	1 carb serving (15 grams)
12 tortilla chips	1 carb serving (15 grams)
16. Sheet Pan: 3 oz. Cod	0 carb serving
2 cup asparagus	0 carb serving
1.5 cup mashed sweet potato	2 carb serving (30 grams)
1 medium corn on the cob	1 carb servings (15 grams)

Snack Suggestions

**Any low fat protein by itself or with any 1 carbohydrate serving*

Hard Boiled Eggs
Greek Yogurt & Blueberries
Assorted nuts/seeds
Veggies & Hummus –carrots, celery, cucumber
Apple Slices/Celery & Peanut Butter
Turkey Jerky
String Cheese
Chia Seed Pudding
Tuna & Crackers
Carrot Sticks
Light Popcorn
Banana & Peanut Butter
Unsweetened Applesauce
Frozen Grapes
Trail Mix
Turkey Roll-Up: Cream Cheese, Turkey, Cucumber, Bell Pepper
Cheese & Whole Grain Crackers
Piece of Chicken
Chicken Salad on cucumbers
Cheese & Apples/Grapes
Cantaloupe & Sunflower Seeds
Whole Wheat Bread & Peanut Butter
Sugar Free Gelatin or Popsicles
Veggies & Guacamole
“Hippeas” –chickpea puffs
“Bare” – fruit chips
Mini “Kind” Bars
Rice Cakes & Nut Butter
Sliced Cucumber with Lemon Juice
Pickles –low sodium
Edamame
Egg Salad wrapped in Lettuce
Turkey meatballs
“Sargento” Balanced Break Snack Pack