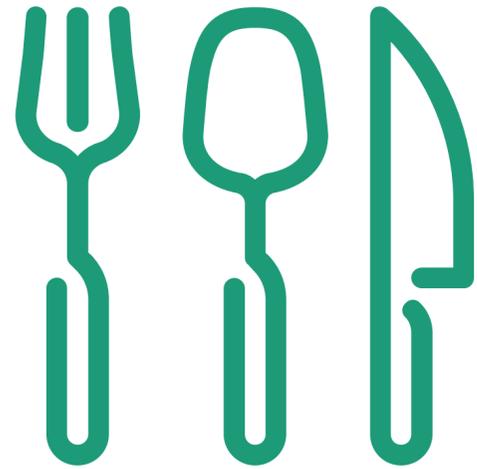




NUTRITION BASICS

OBJECTIVES



1

Learn how to make healthy food choices

What to eat, when to eat, and how much to eat

2

Gain an understanding of how different nutrients effect your blood glucose levels

3

Learn about meal planning approaches

The Plate Method and Carbohydrate Counting

4

Understand how to make heart healthy food choices



BASIC HEALTHY PRINCIPLES

EAT A VARIETY OF FOODS

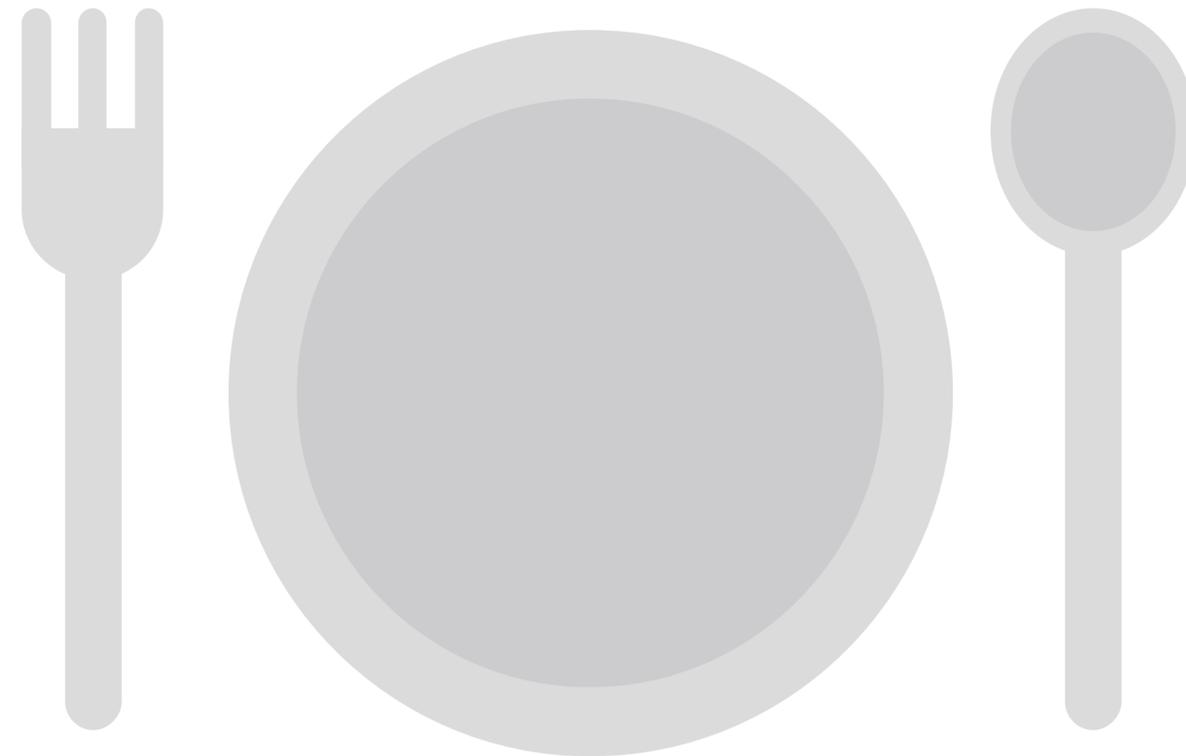
All foods can fit into a healthy diabetes eating plan
Choose more whole grains, beans, vegetables, and fruits
Use less fat, sugar, and salt
Eat well-balanced meals with carbohydrate, protein, and a small amount of healthy fat

WHEN TO EAT

Spread meals out over the entire day
Eat at consistent times each day
Avoid eating one or two large meals
Do not skip meals
Work snacks into your meal plan, if needed

HOW MUCH TO EAT

Try to eat the same amount of food at each meal
Plan meals to include similar amounts of carbohydrate
3-5 carbohydrate choices/meal
Be aware of portion sizes

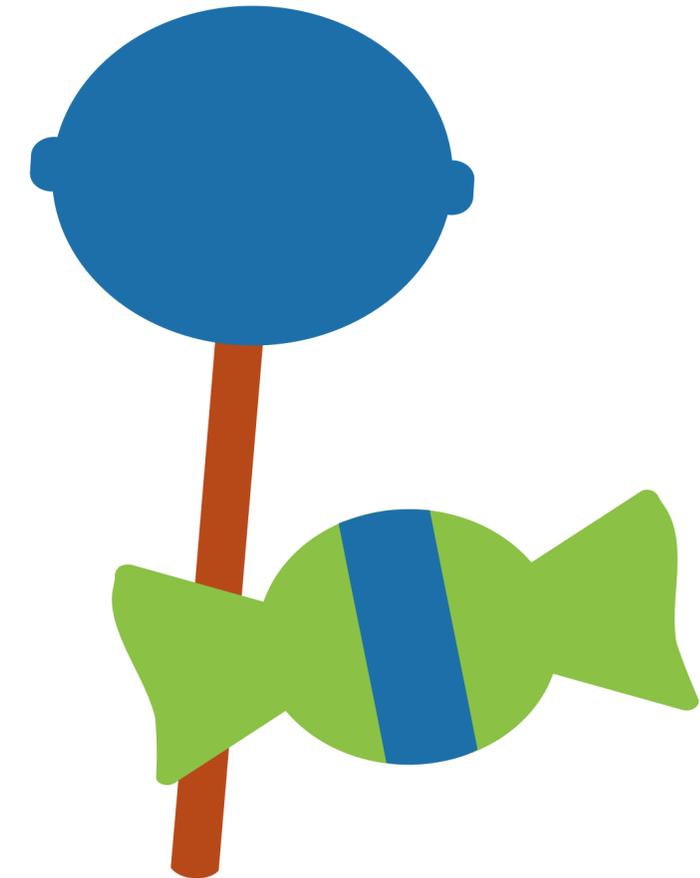


TWO TYPES OF CARBOHYDRATES

Simple and Complex

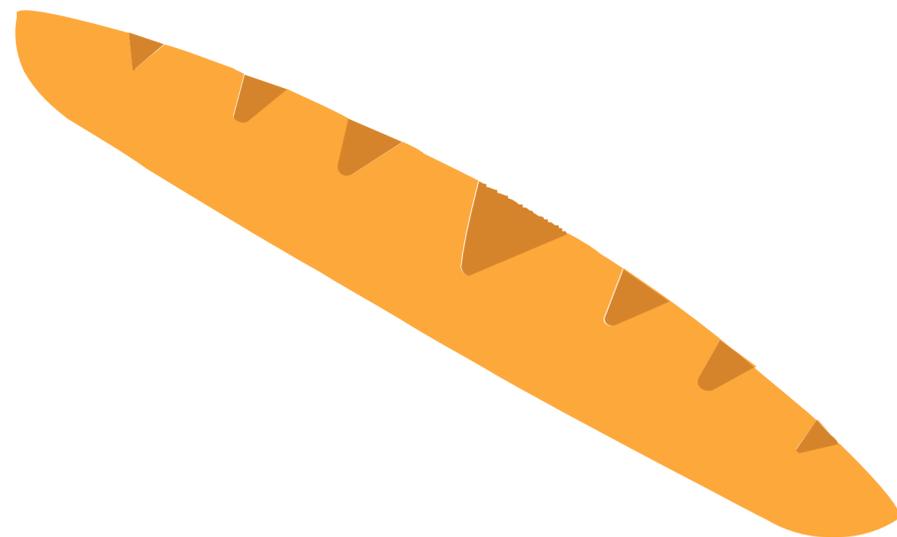
Simple Carbohydrates = Sugars

- *Natural Sugars*
 - Fruit and fruit juice (fructose or fruit sugar)
 - Milk and yogurt (lactose or milk sugar)
- *Added Sugars*
 - Table sugar (sucrose)
 - Honey
 - High fructose corn syrup
 - Sweets and desserts made with sugar - regular soda, jello, candy, cake, cookies, pie



Complex Carbohydrates = Starches

- Breads, cereals and grains, pasta, starchy vegetables, crackers, beans, peas, lentils
- Complex carbohydrates are a major source of dietary fiber
 - Dietary fiber is not completely digested and absorbed like other carbohydrates
 - Insoluble fiber - ↓ constipation, ↓ cancer risk, ↓ heart disease
 - Soluble fiber - ↓ blood fat levels and improve glucose control.
 - The goal is to consume 25-35 grams of fiber per day.



SOURCES OF FIBER

Total carbohydrate servings = 15

Soluble Fiber (helps lower blood fats and blood glucose)

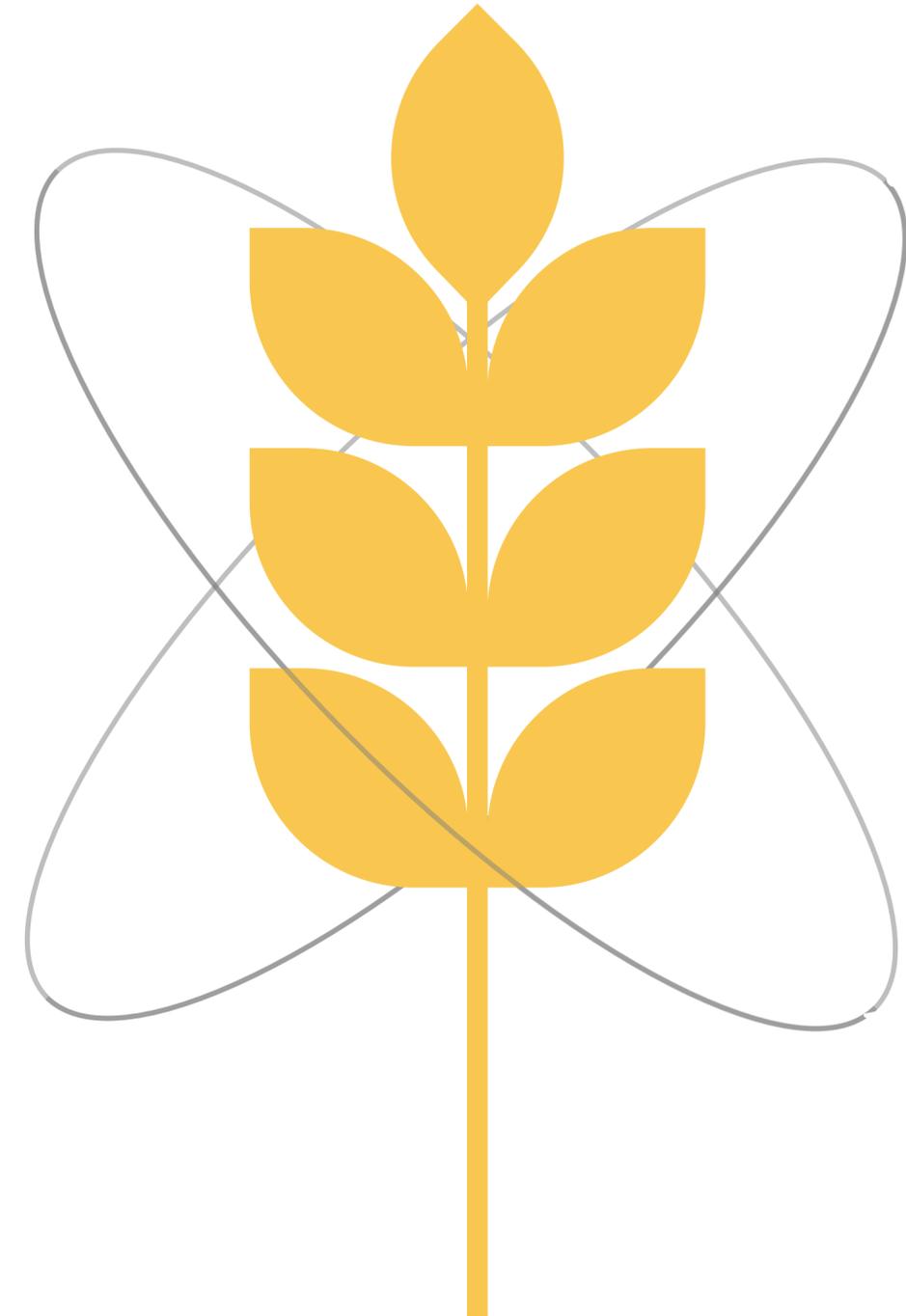
Oats, rice bran, oat bran, corn bran, oatmeal, kidney beans, barley, pinto beans, dried peas, black beans, and fresh fruit

Insoluble Fiber (helps prevent constipation and disease risk)

Whole grains

Whole-grain products: bread, cereal, crackers, brown rice and pasta

Raw vegetables and fresh fruit



Serving Sizes for Carbohydrate Foods

Every serving of carbohydrate = 15 grams of carbohydrate

Practice measuring portions until you improve your estimations skills

Serving Sizes for Grains, Beans and Starchy Vegetables (15 g carb):

1 slice of bread, ½ a hot dog or hamburger bun, 1 oz bagel or English muffin
1 small potato – 3 oz
1/3 c. cooked rice or pasta
½ c. cooked cereal, beans, or corn
¾ c. dry, unsweetened cereal (but read the label)
½ c. green peas
½ c. mashed potatoes or sweet potatoes
1 c. acorn or butternut squash
6 crackers

Serving Sizes for Milk (15 g of carb):

1 c. low-fat or non-fat milk
6-8 ounces of yogurt with “lite” or “light” on the label

Additional Carbohydrates (15 g of carbohydrate):

It is best to look at the label!

2 small cookies
½ cup ice cream (regular, light, or fat free, no sugar)
¼ cup of sherbet
½ cup of sugar free pudding
2 inch brownie square or cake with no icing
5 vanilla wafers, 3 ginger snaps
3 cups popcorn
¾ oz pretzels, potato chips
Fruit juice bar 100% juice
1 Tbsp jelly, jam, honey, syrup

Serving Sizes for Fruits (15 g of carb):

1 small apple – 4 to 6 oz.
1 c. fresh berries
½ c. canned fruit in its own juice or water
1 c. cubed melon
17 grapes
1 small banana
1 medium peach or orange
½ grapefruit
12 fresh cherries
2 TBSP of raisins
¼ c. dried fruits
½ c. fruit juice – 4 oz.

Serving Sizes for Non-Starchy Vegetables (5 g carb) (Do not count these in your carbohydrate plan):

1 c. raw vegetables or ½ c. cooked vegetables

3 cups raw or 1 ½ cups cooked = 1 carbohydrate choice



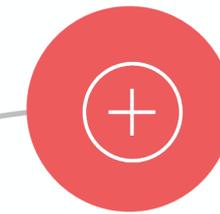
Don't Ignore Protein and Fat

Meals should be balanced with adequate protein and fat.

Most adults need only 6 ounces of protein a day.

Large portions of protein may adversely affect your blood sugar.

Meals without protein may cause your blood sugar to rise faster than desired.



Include small amounts of healthy fats in your meals.

A high fat meal will delay the rise of your blood sugar.

Eating too much protein and fat may cause weight gain and other diabetes-related complications such as heart disease and kidney disease.



Protein and Fat

Fats and Serving Sizes (goal is 0-3 servings per meal):

- 2 Tbsp – Avocado or Lite salad dressing
- 1 oz nuts (examples – 10 peanuts, 6 almonds)
- 1 tsp of oil, margarine, butter, or mayonnaise
- 1 Tbsp – Seeds, oil, margarine, mayonnaise, salad dressing
- 2 Tbsp half and half, sour cream

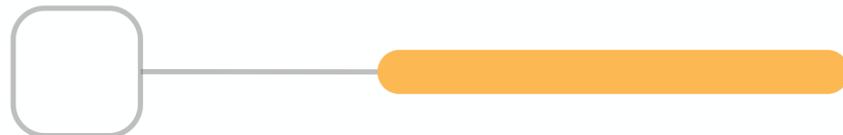


Free foods have less than 5 g of carbohydrate per serving.

Be aware and avoid large portions of these foods.

Examples include:

- 1 Tbsp fat-free or low fat: cream cheese, salad dressing, or sour cream
- Sugar-free gelatin
- 1 piece of hard, sugar-free candy
- 1 Tbsp catsup or pickle relish
- Coffee, tea, diet soft drinks
- ¼ cup salsa
- Seasonings: garlic, fresh & dried herbs, spices



Start Here →

Check Calories

Limit these Nutrients

Get Enough of these Nutrients

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

Calories 250 **Calories from Fat** 110

% Daily Value*

Total Fat 12g	18%
Saturated Fat 3g	15%
<i>Trans</i> Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Quick Guide to % DV

• 5% or less is Low

• 20% or more is High

Meat and Meat Substitutes to Choose:

- Cooked lean meat, poultry, or fish
- Low-fat or fat-free cottage cheese
- 1 egg or 1 slice cheese (equals 1 oz meat)
- 1 Tbsp of peanut butter (equals 1 oz meat)
- Tofu

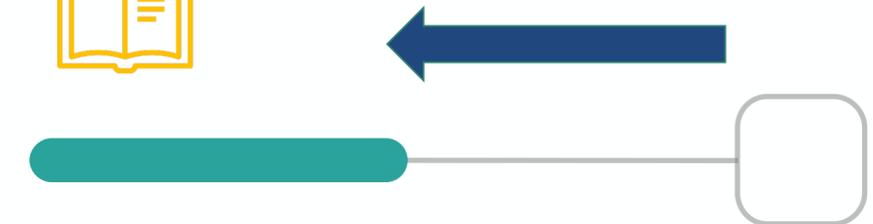


3 oz. of meat = Approx. the size of a deck of card



Label Reading Tips:

Be sure to look at



Meal Planning Approaches

The Plate Method

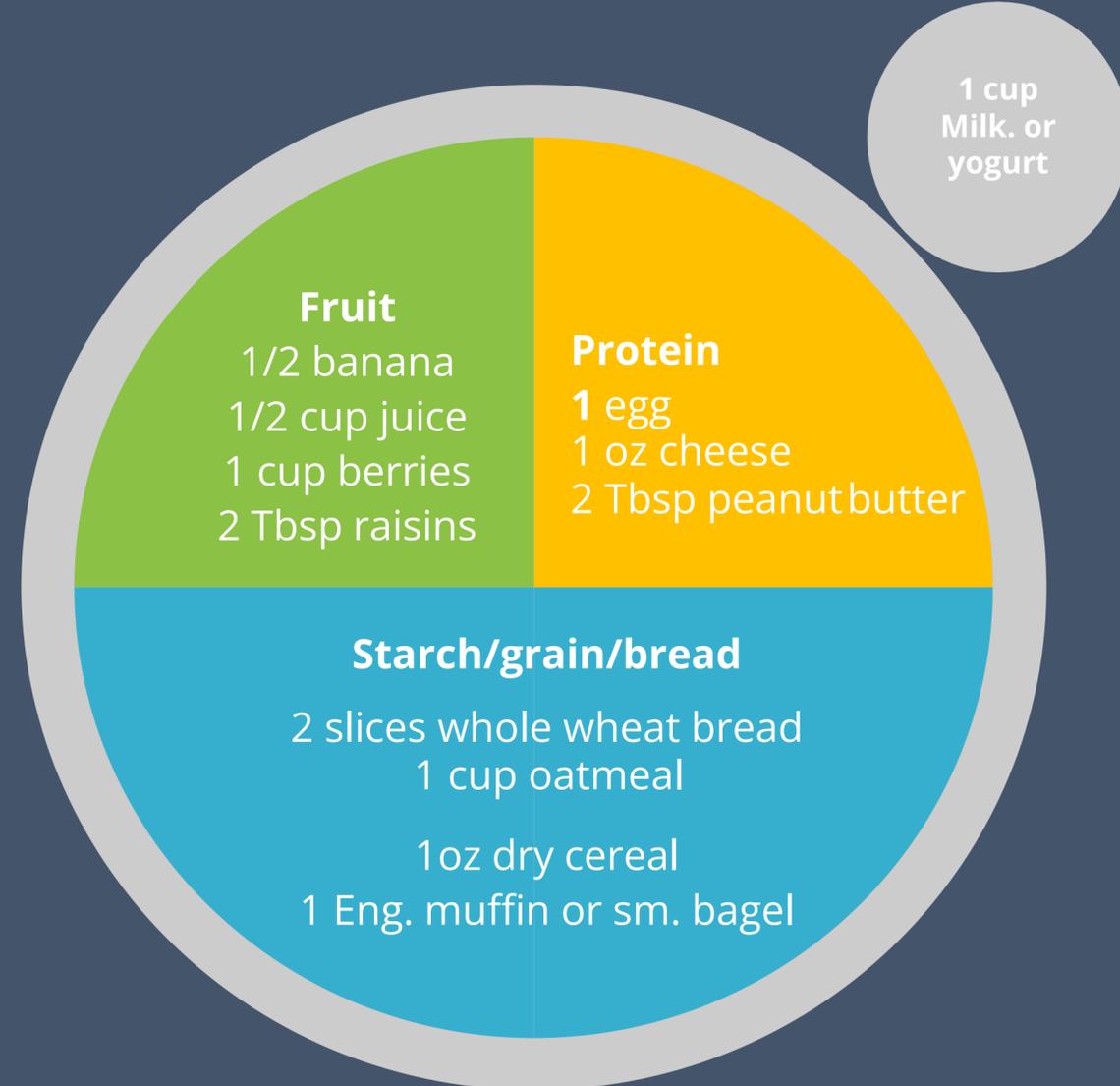
The Plate Method is a meal planning approach that promotes consistent carbohydrate, low fat meals for blood glucose control and heart health. Below are the guidelines for following the plate method, and on the reverse is a sample plate. The Plate Method works best when using a 9-inch plate.

CARBOHYDRATES: Your meals should include approximately 3 or 4 carbohydrate choices, which is equivalent to 45 to 60 grams of carbohydrates. (1 carbohydrate choice equals 15 grams of carbohydrates.) Carbohydrates are grains, legumes, fruits, starchy vegetables, and dairy. Choose whole grains over processed, refined grains.

Vegetables. Fill half your plate with 1 cup or more of non-starchy vegetables such as lettuce, cabbage, cucumbers, peppers, mushrooms, onions, garlic, beets, green beans, broccoli, celery, carrots, cauliflower and tomatoes. An easy way to meet this requirement is to eat a small salad along with your side vegetable.

Lean Protein. The protein section should provide 3 ounces of meat or meat substitute, the same dimensions as a deck of cards. Examples are poultry, fish, and lean steak. Examples of vegetarian sources of protein are beans, tofu, cheese, eggs, and peanut butter.

The Plate Method at Breakfast



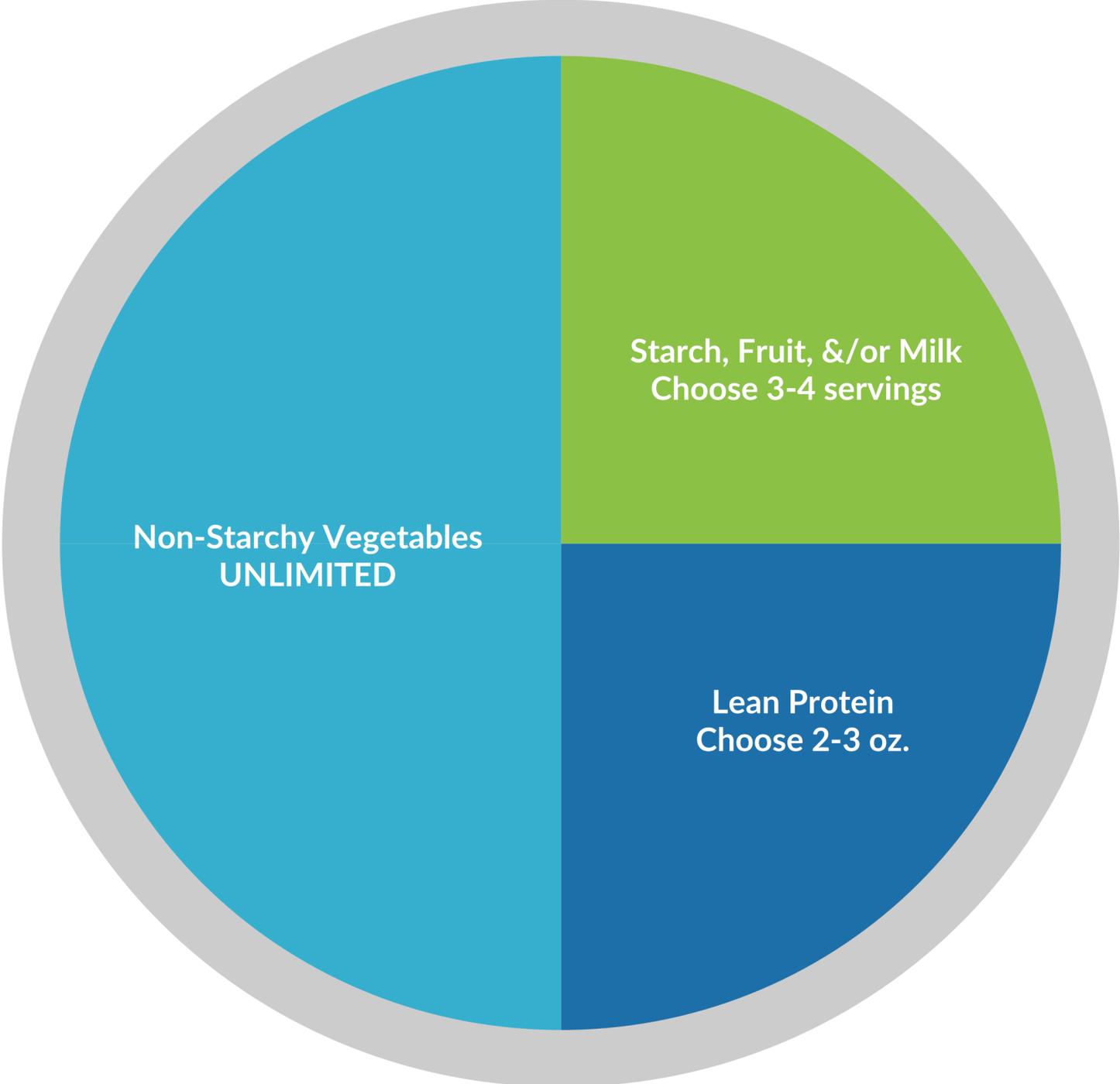
A healthy daily meal plan includes at least:

- 2-3 servings of non-starchy vegetables
- 2 servings of fruit
- 6 servings of grains, beans, and starchy vegetables
- 2 servings of low-fat or fat-free milk
- About 6 oz. of meat or meat substitute
- *Small* amounts of fat & sugar



The Plate Method

1 serving of carbohydrate = 15 grams



NON-STARCHY VEGETABLES

- Cucumbers
- Carrots
- Cabbage
- Cauliflower
- Green beans
- Leafy greens
- Lettuce
- Tomatoes
- Celery
- Peppers
- Eggplant
- Broccoli
- Asparagus
- Spinach
- Mushrooms

LEAN PROTEIN

- Fish
- Chicken
- Turkey
- Pork loin
- Lean beef
- Seafood

Serving = 1 cup raw or ½ cup cooked

NON-MEAT PROTEIN

- Beans* ½ cup*
- Eggs 1 egg
- Peanut Butter 1 Tbsp
- Tofu ½ cup
- Low-fat Cheese 1 slice

*count as one carbohydrate serving

Sources of Carbohydrate

STARCHES

- ½ Cup
 - Potatoes
 - Corn
 - Dry beans
 - Peas
- 1/3 Cup
 - Macaroni
 - Pasta
 - Rice

FRUITS

- 1 Fruit
 - Orange
 - Pear
 - Apple
 - Kiwi
 - Peach
- ½ Fruit
 - Banana
 - Mango
 - Grapefruit
- 1 Cup
 - Berries
 - Grapes
 - Pineapple
 - Cantaloupe
 - Watermelon

Read Label

- Breads
- Crackers
- Pretzels
- Muffins
- Waffles
- Pancakes

MILK

- Skim milk
- Low fat milk
- Lite yogurt



MEAL PLANNING APPROACHES

CARBOHYDRATE COUNTING

BREAKFAST EXAMPLES

1 English muffin
½ cup grits
1 poached egg
1 small banana
Coffee with Splenda

How many carbohydrate servings are in this meal?

LUNCH EXAMPLES

1 cup tomato soup
Grilled cheese sandwich (2 slices bread, 2 slices cheese, 2 tsp. margarine)
1 cup cantaloupe cubes
1 large oatmeal-raisin cookie
Tea with Splenda

How many carbohydrate servings are in this meal?

DINNER EXAMPLES

1 large sweet potato (9oz)
1 pork chop (4oz)
½ cup collard greens
1 cup fruit cocktail
Iced tea (unsweetened)

How many carbohydrate servings are in this meal?

BREAKFAST EXAMPLES

1 ½ cup cereal
1 cup 2% milk
½ cup orange juice
Coffee with 2 Tbsp. low-fat milk

How many carbohydrate servings are in this meal?

LUNCH EXAMPLES

2 slices wheat bread
1 slice (1 oz) low-fat Swiss cheese
1 slice turkey (1 oz.)
Carrot sticks
17 small grapes
1 cup light yogurt
Diet soda

How many carbohydrate servings are in this meal?

DINNER EXAMPLES

1 cup pasta
½ cup spaghetti sauce
3 meatballs
2 Tbsp parmesan cheese
Green salad
1 breadstick
½ cup light ice cream
Water

How many carbohydrate servings are in this meal?

Carbohydrate Counting emphasizes the total amount of carbohydrate not the source

- Carbohydrate consistency and portion control
 - One carbohydrate serving = 15 grams of carbohydrate

Goal for most people = 3-5 carbohydrate servings/meal, which is 45-75 grams/meal



Remember that all fats are high in calories and, in excess, can contribute to weight gain.

HEART HEALTHY EATING

Unsaturated Fat <i>Preferred fat sources, in small amounts</i>	Saturated Fat <i>Limit these fat sources</i>	Trans Fat <i>Avoid these fat sources</i>
<u>Monounsaturated</u> Oil (olive, canola, peanut) Olives Avocados Peanut butter Nuts (peanuts, cashews, almonds) ↓ LDL cholesterol ↑ HDL cholesterol	Meat Cheese Egg yolk Whole milk 2% milk Ice cream Butter Bacon Sour cream Fatback Coconut oil Shortening Hydrogenated vegetable oil Poultry skin ↑ LDL cholesterol	Partially hydrogenated vegetable oil (may be found in vegetable shortening, some margarines, crackers, cookies, snack foods) ↑ LDL cholesterol ↓ HDL cholesterol
<u>Polyunsaturated</u> Oil (corn, safflower, soybean) Margarine Mayonnaise Walnuts Sesame seeds Omega fatty acids in fish ↓ LDL cholesterol		

Sources of Fat and Cholesterol

Food contains three types of fats, and some are better for you than others, depending on how they affect your cholesterol.

Ways to Limit Total and Saturated Fat

- Choose lean meats, fish and poultry
- Use skim or low-fat milk
- Limit egg yolks to three times per week
- Limit high-fat animal products such as bacon, hot dogs, cheese and butter
- Limit commercially prepared baked and snack foods
- Use monounsaturated fat for cooking and to replace other oils
- Limit trans fat to as little as possible



SODIUM

Half of the people with diabetes also have high blood pressure
Reducing dietary sodium may help reduce blood pressure
Sodium recommendations (American Heart Association): $\leq 1,500$ mg per day
The amount of sodium in 1/2 tsp. of salt = 1,200 mg



Ways to Reduce Sodium in Your Diet

- Decrease salt in cooking
- Remove the saltshaker from the table
- Eat smaller portions of high sodium foods
- Try seasonings and spices that can add flavor without adding sodium like Mrs. Dash
- Look for lightly salted or no salt added

Avoid

- Fast foods
- Canned foods
- Salty snacks
- Rice/noodle mixes and boxed meals

Choose pre-packaged foods that are

- Less than 400 mg per serving for snacks and side dishes
- Less than 800 mg per serving per entrée



CHOOSING SNACKS

Choose one from each circle for a healthy, satisfying snack.

CARBOHYDRATES

Grains

- 1 oz bagel
- ½ English muffin, 20 pretzels sticks, 2 4-in. rice cakes, or 6 crackers
- 12-15 veggie chips
- ½ whole wheat pita
- ¼ cup low-fat granola
- 2 slices reduced calorie bread or 1 whole wheat tortilla (6 in.)
- 3 graham cracker squares
- 3 cups light popcorn

Fruits

- 1 ¼ cup whole strawberries
- ¾ cup blackberries or blueberries
- 1 cup cantaloupe or honeydew
- 1 ¼ cup watermelon 1 small apple or pear
- ½ cup cherries 1 medium peach
- 2 tbsp. raisins
- 17 grapes

Dairy

- 8 oz. low fat or fat-free milk
- ~6-8 oz. lite yogurt
- ½ cup ice cream
- ½ cup of pudding

PROTEIN

Meats

- 1-2 oz. white meat, skinless, chicken, turkey
- 1 hard boiled egg
- ½ cup egg whites 1-2 oz. deli meat
- 1-2 oz. turkey/tuna/egg salad made with light or fat-free mayo
- 1-2 oz. salmon

Cheese

- 1 oz. part-skim block cheese, soy cheese, or string cheese
- ¼ cup part-skim grated cheese
- ¼ cup low fat or fat -free cottage cheese
- 2 tbsp fat-free cream cheese

Beans & Dip

- 1/3 cup hummus
- ½ cup tofu 1/3 cup bean dip
- ¼ - ½ cup edamame 1 oz soynuts

Nuts & Seeds

- 1 oz. sunflower, pumpkin, or sesame seeds
- 1 oz. pecans, walnuts, almonds, cashews, or peanuts
- 1 oz. peanut, almond, or cashew butter





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