

Diabetes and Nutrition

Nutrition Department, Division of Endocrinology/Diabetes





Today's Focus: Carbohydrates

What Are Carbohydrates?

- Which Foods Have Carbohydrates?
- Carbohydrates That Break Down Into Glucose In The Blood.

Carbohydrate Counting

- Measuring and Tools
- How To Read a Food Label



Carbohydrates



What Are Carbohydrates and Why Are They Important?

- Carbohydrates consist of **starches** (complex) and **sugar** (simple).
- All carbohydrates are broken down to **glucose**. Glucose is a type of sugar that your body receives from the foods that you eat, and in return, your body uses that sugar to give you energy.
- **Insulin** is required to use **glucose** for **energy** and **growth**.



Grain/Starches

Grain Types:

- Barley
- Oats
- Rice
- Wheat
- Other Grains

Food Group Examples:

- Bread
- Cereal
- Crackers
- Oatmeal
- Pasta
- Quinoa
- Rice
- Tortilla



Starchy Vegetables

Food Group Examples:

- Beans
- Carrots
- Corn
- Green Peas
- Green Bananas
- Lima Beans
- Plantains
- Potatoes
- Sweet Potatoes
- Butternut Squash
- Acorn Squash
- Water Chestnuts
- Yams



Vegetables

These vegetables contain very little carbohydrate, and they are considered “free:”

- Asparagus
- Broccoli
- Cauliflower
- Cucumbers
- Green Beans
- Lettuce/Leafy Greens
- Peppers
- Summer Squash
- Tomatoes
- Zucchini



Fruits

Fruits in All Forms:

- Fresh
- Frozen
- Canned
- Dried
- Juiced

Food Group Examples:

- Apples
- Bananas
- Blueberries
- Cantaloupe
- Grapes
- Kiwi
- Melon
- Mango
- Prunes
- Strawberry
- Raspberry
- Watermelon



Dairy

Dairy Types:

- Milk
- Yogurt
- Cheese

Food Group Examples:

- Skim Milk
- 1% Milk
- 2% Milk
- Whole Milk
- Cheese*
- Yogurt
- Pudding
- Ice Cream

***Cheese** is the only dairy exception. It is very low in carbohydrate and is considered a “free food.”



Added Sugars

What Is Added Sugar?

Added sugar is sugar that has been added to a prepared food or beverage. It can be a sugar that is naturally found in food:

- Fructose
- Lactose
- Sucrose
- Manufactured (e.g. corn syrup solid)

Food Group Examples:

- Regular Soft Drinks
- Energy Drinks
- Sports Drinks
- Candy
- Cakes
- Cookies
- Pies
- Cobblers
- Sweet Rolls
- Pastries
- Donuts
- Dairy Desserts

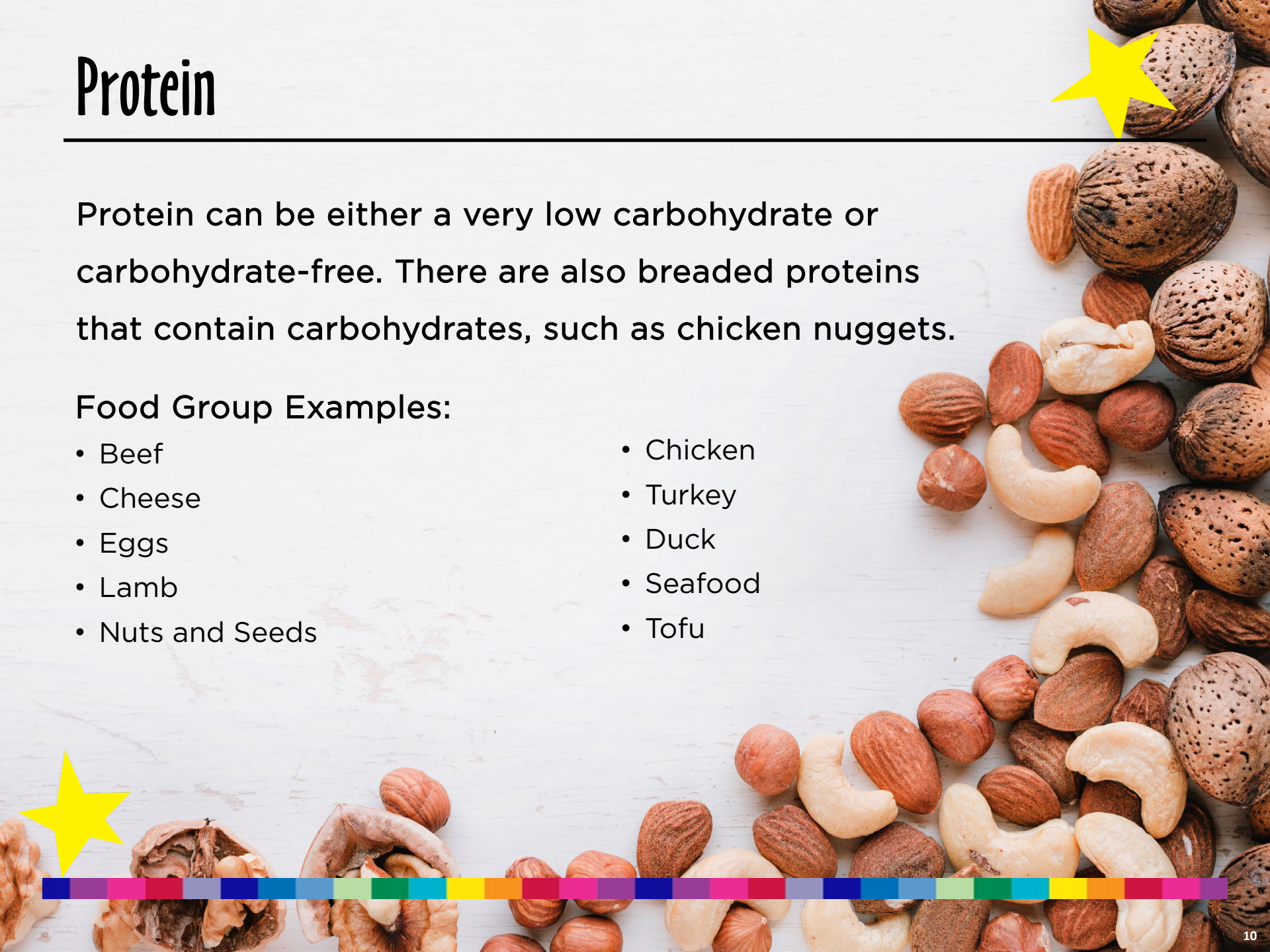


Protein

Protein can be either a very low carbohydrate or carbohydrate-free. There are also breaded proteins that contain carbohydrates, such as chicken nuggets.

Food Group Examples:

- Beef
- Cheese
- Eggs
- Lamb
- Nuts and Seeds
- Chicken
- Turkey
- Duck
- Seafood
- Tofu



Fats



Fats (Animal Source):

- Butter
- Milk Fat (Cheese)
- Cream Cheese
- Beef Fat (Tallow)
- Chicken Fat
- Pork Fat (Lard)
- Stick Margarine
- Shortening
- Partially Hydrogenated Oil

Oils (Plant Source):

- Cooking Oil
- Canola Oil
- Coconut Oil
- Corn Oil
- Peanut Oil
- Olive Oil
- Mayonnaise
- Salad Dressings
- Soft Margarine

***Watch for Carbs in Fat-Free or Low-Fat Products**





Test for Understanding

Carbohydrate Knowledge



Test Your Carbohydrate Knowledge



Food

Yes

No

English Muffin

Apple Juice

Yogurt

Macaroni and Cheese

Pizza

Chicken Nuggets

Eggs

Oranges

Peanut Butter and Jelly Sandwich

Pudding

Cheese

Cucumber Sticks

Potato Chips

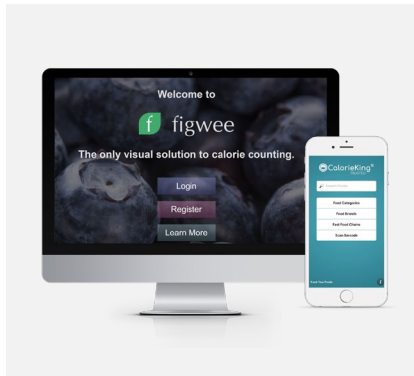
Goldfish



Where Can I Find Carbohydrate Information?



Carbohydrates are measured in grams (g). There are many resources available to access carbohydrate information, such as:



Online Tools

Online tools such as Figwee.com and the Calorie King app are great ways to access information.



Measuring Scale

A measuring scale is a fast and effective way to access carbohydrate measurement information.



Measuring Cups

Another easy way to access carbohydrate information is by using measurement tools like a measuring cup.

Nutrition Facts	
Serving Size: 1 miniature (7g)	
Amount Per Serving	
Calories	36
Calories from Fat 19	
% Daily Value*	
Total Fat	2.14 g 39%
Saturated Fat	0.75 g 49%
Trans Fat	
Cholesterol	0.42 mg 0%
Sodium	21.98 mg 1%
Potassium	24.01 mg 1%
Total Carbohydrate	3.88 g 1%
Dietary Fiber	0.25 g 1%
Sugars	3.3 g
Sugar Alcohols	
Protein	0.72 g

Ingredients Label

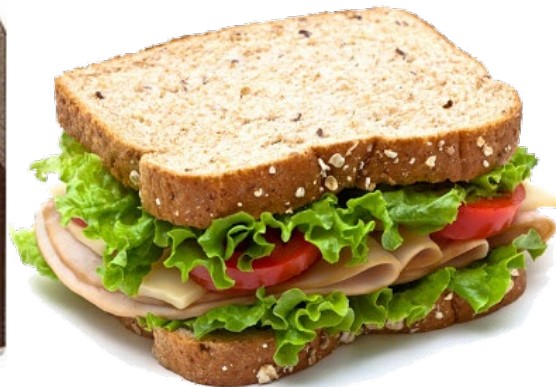
The ingredients label featured on the side of most foods will provide you with carbohydrate detail, as well.



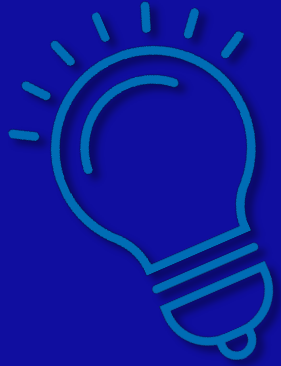
Let's Practice!



What are the total carbohydrates in a turkey and cheese sandwich, plus (8 oz) glass of chocolate milk?



Answer!



The total carbohydrates in a turkey and cheese sandwich plus (8 oz) glass of chocolate milk is **60 g!**

Ingredients	Carbohydrate
Turkey	~0 g
Cheese	0 g
1 Piece of Lettuce	~0 g
1 Slice of Tomato	~0 g
Mayonnaise	0 g
2 Slices of Wheat Bread	30 g
8 oz Chocolate Milk	30 g





Get the Facts

Sugar-Free vs. Carbohydrate-Free

Sugar-Free Product Options

Heart Healthy Free Foods



Sugar-Free vs. Carbohydrate-Free



It's important to always check the ingredients labels because that not all Sugar-Free products are Carbohydrate-Free as well.



Smucker's Sugar-Free Strawberry Preserves

Nutrition Facts

Serving Size 1 Tbsp	(17g)
Servings Per Container	45
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Amount Per Serving	
Calories	10
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Total Fat	0g
Total Carbohydrate	5g
Sugars	0g
Sodium	0mg
Protein	0g



Smucker's Seedless Strawberry Jam

Nutrition Facts

Serving Size 1 Tbsp	(20g)
Servings Per Container	45
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Amount Per Serving	
Calories	50
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Total Fat	0g
Total Carbohydrate	13g
Sugars	12g
Sodium	0mg
Protein	0g



Sugar-Free Product Options



- Jelly (Great option for peanut butter and jelly sandwich fans!)
- Jell-O
- Popsicles
- Yogurt
- Gum (For healthy teeth, nothing to do with diabetes)
- Beverages
- Pancake syrup
- Products made with sugar substitutes:
 - Splenda
 - Truvia
 - Equal
 - Sweet 'n Low
- *Not those that contain sugar alcohols like lactitol or other “tols.”



Heart Healthy Free Foods: Dairy



Healthy free foods for less than 5 g carbohydrate per serving; or less than 20-25 calories per serving.

Dairy Options:

- 8 oz Glass of Almond or Soy Milk (Plain/Unsweetened)
- $\frac{1}{2}$ - $\frac{3}{4}$ Cup of Reduced Fat Cottage Cheese
- Egg White Omelet with Veggies, Cheese and Low Sodium Ham
- Hardboiled Eggs
- Reduced-Fat String Cheese
- Laughing Cow's Babybel Cheese
- Soy Cheese (Brands to Try: Veggie Slices or Vegan Gourmet)



Heart Healthy Free Foods: Vegetables



Healthy free foods for less than 5 g carbohydrate per serving; or less than 20-25 calories per serving.

Vegetables Options:

- ½ of a Medium Avocado
- ¼ Cup of Guacamole
- Olives
- Dill Pickles
- Raw Veggie Salad (Lettuce, Tomato, Cucumber, etc) with 2 Tablespoons of Low-Calorie Dressing
- Raw Green or Red Peppers Sliced with 2 Tablespoons of Low-Calorie Dressing
- Raw Celery with Peanut Butter, Reduced-Fat Cream Cheese or Tuna Salad
- Lettuce Roll-Ups: Low-Sodium Luncheon Meat, Egg Salad, Tuna Salad or Reduced-Fat Cream Cheese and Raw Veggies Rolled Up in Leaves of Lettuce



Heart Healthy Free Foods: Fruits and Nuts



Healthy free foods for less than 5 g carbohydrate per serving; or less than 20-25 calories per serving.

Fruit Options:

- ½ Cup of Raspberries with ¼ Cup of Cool Whip or Reddi-Whip
- ½ Cup of Strawberries with ¼ Cup of Cool Whip or Reddi-Whip

Nut Options:

- ½ Cup Macadamia Nuts
- ¼ Cup Peanuts
- ¼ Cup Walnuts
- ¼ Cup Almonds
- ¼ Cup Sunflower Seeds
- ½ Cup Pecans



Heart Healthy Free Foods: Snacks



Healthy free foods for less than 5 g carbohydrate per serving; or less than 20-25 calories per serving.

Snack Options:

- 2 Tablespoons of Hummus
- Salsa
- Sugar-Free Hot Chocolate Made with Water
- Sugar-Free Popsicles (Remember to read the label because not all are free.)
- Sugar-Free Jell-O Gelatin or Gel Snacks
- Smoked Salmon and Reduced Fat Cream Cheese on Cucumber Slices
- $\frac{3}{4}$ Cup of Air Popped Popcorn
- Turkey Pepperoni (Zap slices in the microwave to make pepperoni chips.)
- Turkey Jerky



Snack Ideas for 15g or Less



- ½ English Muffin with Peanut Butter, a Slice of Cheese or Cream Cheese
- ½ of a 3 oz Bagel with Peanut Butter, a Slice of Cheese or Cream Cheese
- 1 Slice of Toast with Peanut Butter, a Slice of Cheese or Cream Cheese
- ½ of a Sandwich of Any Kind
- ½ Bagel or English Muffin Pizza
- ½ Cup of Cheerios and 4 oz of Milk
- One 4-inch Pancake with Peanut Butter and 4 oz of Milk
- 2 Homemade Mini Muffins (You can experiment with adding different fruits!)
- 2 Mini Waffle with ¼ Cup Canned Peaches Packed in Juice
- Sliced Low Fat Cheese and 1 of the Following:
 - 3 Graham Crackers
 - 6 Saltines
 - 25 Mini Cheese Crackers (Cheez-Its)
 - 6 Animal Crackers
 - 7 Ritz Crackers
 - 5 Triscuits
 - 45 Goldfish Crackers
 - 12 Wheat Thins
 - 15 Air Crisps
 - 5 Vanilla Wafers
- 4 oz Serving of Dannon's Light'n Fit Carb and Sugar Control Yogurt
- 1 Small Apple with Cheese or Peanut Butter
- Cottage Cheese and ½ Cup Cut-Up Fresh Fruit
- ½ of a Banana with Peanut Butter
- String Cheese and 4 oz of Juice



Thank You!

