

# Instructor's Notes

**To present this workshop, the Instructor should have a good and current understanding of diabetes and nutrition.**

There are no specific diabetes information that coordinates with this presentation. It is recommended that basic diabetes information be made available. Go to [www.dagc.org](http://www.dagc.org) under the "management" tab on the left side to download the following: *What is diabetes?*; *Testing Your Blood (Sugar)*; *Diabetes and Food*; *Exercise*

# **Carbohydrates**

**A “survival skills” presentation  
developed by the  
Diabetes Association  
of Greater Cleveland**

Understanding carbohydrates is a survival skill for people with diabetes. This presentation is designed to do just that!

# What are Carbs

## and why are they so important?

Carbs, or carbohydrates, are nutrients found in the foods we eat. Carbs are your body's main source of energy and come from a variety of foods. We will learn about those foods shortly.

Protein and fat are other important nutrients, but do not have big affect on blood sugar.

Most of the carbs we eat are broken down into sugar (or glucose) and appear in the blood as blood sugar within 15 minutes to 2 hours after they are eaten.

Insulin, a hormone made in the pancreas, lets the sugar out of the blood and into the cells where it is used as energy. People with diabetes may not produce insulin at all, or not enough insulin, or their body does not use the insulin it does produce the right way. This can cause blood sugar levels to become out of control.

People with diabetes can help control their blood sugar through healthy eating, activity, and checking their blood sugar levels. Some people with diabetes may also need to take pills or insulin.

## How much carbohydrate do I need each day?

- Needs will vary from person to person
- Generally speaking,
  - Women need 45-60 grams of carbohydrate per MEAL
  - Men need 60-75 grams of carbohydrate per MEAL
  - Snacks should be 15-30 grams of carbohydrate

Your registered dietitian or registered dietetic technician can help you determine what is right for you.

If you currently have a meal plan in place, stay with that meal plan. If you do not have a meal plan, these general guidelines are good to follow until you can visit with a nutrition professional.

# What foods contain carbs?

The next few slides will help us discover which foods contain carbohydrates.

## Cereals, breads, grains, pasta, & rice



What type of food do you see in this slide?

These foods are sometimes called starches. They are all sources of carbohydrate and anything made with these foods will contain carbohydrate.

$\frac{1}{2}$  cup of mashed potatoes, yams, sweet potatoes or cooked legumes = 15 grams of carbohydrate.

$\frac{1}{3}$  cup of cooked pasta or rice = 15 grams of carbohydrate.

About  $\frac{1}{2}$  cup of cooked cereal = 15 grams of carbohydrate (this can vary)

A 1 ounce slice of bread = 15 grams of carbohydrate

Soups (rice, noodles, barley) stews (potatoes), and casseroles all contain carbs.

Flours, such as wheat, rye, corn, and potato are also carbs. Anything made from them contain carbs.

## Starchy Vegetables



Besides corn, other starchy vegetables include lima beans, peas, winter squash and legumes.

A serving of any of these vegetables is  $\frac{1}{2}$  cup which equals about 15 grams of carbohydrate.

Is popcorn a carb? (yes)

How much is a serving? (A 3 cup serving = 15 grams of carbohydrate)

These foods all contain vitamins, mineral and fiber and are all okay to eat, you just need to count the amount of carbohydrate they contain into your meal plan.

## What about other vegetables?



Other “non starchy vegetables” like lettuce, carrots, broccoli, tomatoes, etc. do not contain as much carbohydrate per serving as the starchy vegetables. These vegetables are called “free” vegetables.

A serving of cooked vegetables is about  $\frac{1}{2}$  cup and contains about 5 grams of carbohydrate. Unless you are eating a  $1 \frac{1}{2}$  cups serving or more, you do not have to count these carbs.

A serving of fresh vegetables is 1 cup and contains about 5 grams of carbohydrate. Unless you are eating 3 cups, you do not have to count these carbs. Keep in mind, salads that are larger than 3 cups may need to be counted.

# Fruit and Fruit Juices



Fruit in any form is a carb. Fruits contain vitamins, minerals and fiber and should be a part of the food we eat daily.

A serving of canned fruit is  $\frac{1}{2}$  cup.

A serving of juice is generally about  $\frac{1}{2}$  cup but does vary with some juices (grape or prune juice =  $\frac{1}{3}$  cup).

A piece of fruit about the size of a tennis ball is 1 serving or 15 grams of carbohydrate.

2 tablespoons of dried fruit, such as raisins, is one serving and equals about 15 grams of carbohydrate

# Yogurt and Milk



Milk and yogurt are good sources of calcium and vitamin D and should be a part of our daily meals. Low fat or fat free versions are the best choice.

1 cup of milk is a serving and equals 12 grams of carbohydrate.

6 ounces of yogurt sweetened with artificial sweeteners such as Equal or Splenda equals 1 serving and 15 grams of carbohydrate although this can vary from product to product.

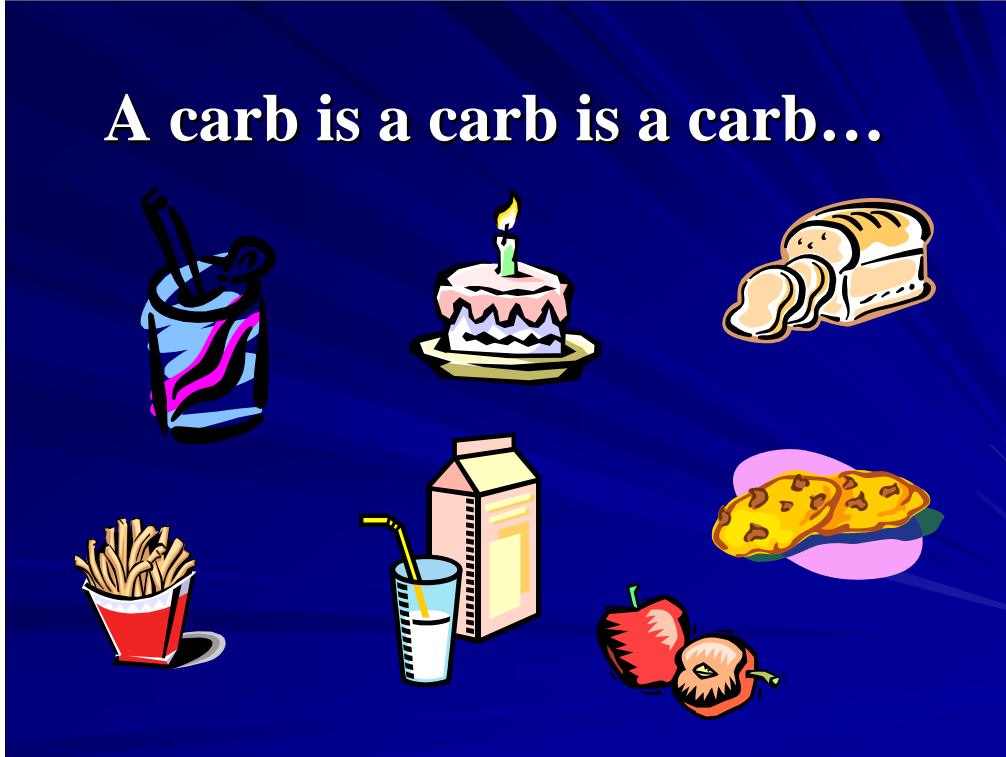
Foods that contain milk (for example, ice cream, cream soups) will contain carbs.



Are there different types of  
carbs?

Introduction to next group of slides.

## A carb is a carb is a carb...



Your body cannot tell if you ate a piece of fruit or a cookie.

Your body reacts to the amount of carbohydrate you eat, not the type of carbohydrate.

### **HOWEVER**

We know that an apple will always be a “healthier” choice than a cookie.

A glass of milk (low fat or fat free) will always be a better choice than a glass of pop.

A fresh orange will be a better choice than orange juice.

Whole grain pasta will always be a better choice than white pasta.

**Why do you think that is?**

# Carbohydrate Counting VS Carb Servings

Do any of you count grams of carb? Do any of you count carb servings?

How many of you do something else? What do you do?

Let's take a quick look at carb counting and carb servings, 2 popular methods of meal planning for people with diabetes.

# Carb Servings

Sometimes the amount of carbohydrate we should eat is expressed in “carb servings” A carb serving = 15 grams of carbohydrates. A serving or portion of food from each of the food groups = about 15 grams of carbohydrates.

**For example:**

One serving from the fruit group contains 15 grams of carbohydrate. This could be ½ cup of canned fruit or 1 piece of fresh fruit the size of a tennis ball.

One serving from the bread / starch group contains 15 grams of carbohydrate. This could be 1 slice of bread or ½ cup of mashed potatoes or noodles.

For example, 1 cup of milk or ½ cup of canned fruit or 6 saltine crackers all equal about 15 grams of carbs.

**Generally speaking, women should have 3-4 carb servings per meal and 1-2 carb servings per snack.**

**Men should have 4-5 carb servings per meal and 1-2 carb servings per snack.**

<b>Nutrition Facts</b>	
Serving Size 1 cup (228g)	
Servings Per Container 2	
<b>Amount Per Serving</b>	
<b>Calories</b> 250	Calories from Fat 110
% Daily Value*	
<b>Total Fat</b> 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
<b>Cholesterol</b> 30mg	10%
<b>Sodium</b> 470mg	20%
<b>Total Carbohydrate</b> 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
<b>Protein</b> 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

### Carbohydrate Gram Counting

With this method, the exact number of grams of carbs are added up for each meal and snack. Food labels, food lists, nutrition information from recipes and meal planning books are useful tools.

When looking at the Nutrition Facts Food Label, look at the amount of **Total Carbohydrate** for the amount of carbs per serving. Sugars, dietary fiber, and sugar alcohols (a type of sweetener) are included in the amount of total carbohydrate.

## What about sugar?

Sugar is a carbohydrate and will have an affect on your blood sugar level. Other sweeteners like corn syrup, molasses and honey are carbohydrates and will affect your blood sugar, too.

Foods that contain these sweeteners will likely raise your blood sugar level.

## How much carbohydrate do I need each day?

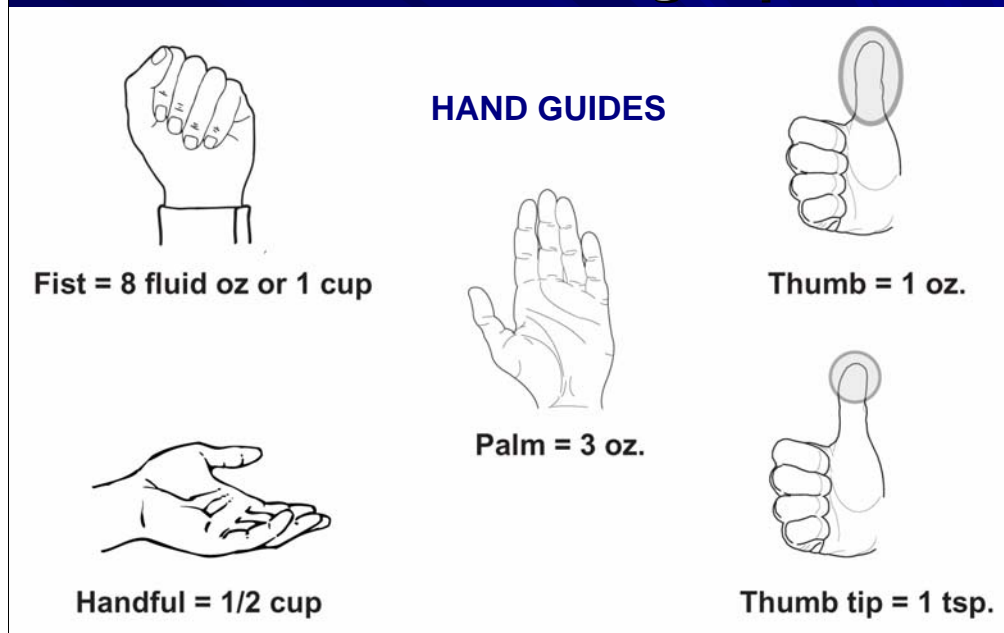
- Needs will vary from person to person
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This is a review of the earlier slide.

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# Carb Counting Tips



If you are not sure of how much food is the right amount, use your hands to help you estimate serving sizes.

Here are some additional tips:

A computer mouse = 1 baked potato serving.

A tennis ball = a medium piece of fruit.

A checkbook = a serving (2-3 ounces) of meat.

A deck of cards = a serving (2-3 ounces) of meat.

Can you think of other tricks to help you remember a serving size?

## Other helpful guidelines

- **Eat 3 meals each day**
- **Eat at about the same time each day**
- **Do not skip meals**
- **Watch the fat!**
- **Watch your portion size**
- **Remember to get up and move each day.**

These guidelines will help you keep your blood sugar in good control.

What questions do you have?

If you have questions or need help  
call 216-591-0800



This presentation was developed by and is the property of the Diabetes Association of Greater Cleveland (2010). It may not be changed or altered in any way.