

Advanced Nutrition and Carb Counting

Diabetes Care Group
www.diabetescaregrp.com



Objectives

- To learn carbohydrate gram counting for flexibility with meals and snacks
- To learn how to adjust carbohydrate for fiber and sugar alcohol
- To learn how to read nutrition labels for BG and weight control
- To learn how to decrease daily calorie intake and improve heart health by choosing lean meats and lower –fat products
- To learn how to make better choices when dining out

Goals for Diabetes Management

- Blood Sugar Control
- Weight Management
- Heart Disease Prevention



Nutrients in Food

1. Carbohydrate
2. Protein
3. Fat
4. Vitamins
5. Minerals
6. Water



Pop Quiz

- Which nutrient causes an increase in blood sugar?
- Which nutrient contributes the greatest amount of calories per gram?
- Which specific nutrient causes an increase in cholesterol levels?
- Which dietary substance contributes to an increase in blood pressure?
- Which dietary substance can promote healthier digestion and assist in managing blood sugar and cholesterol?

Carbs, Protein and Fat

- All have calories!
- Calories affect weight
- Extra calories from **ANY** nutrient cause weight gain
- Excess body weight affects blood glucose control



The Carbohydrate Facts

- What is carbohydrate?
 - The body's basic source of energy
 - Any food that contains sugar or that turns into sugar after eaten
- Which foods are considered carbohydrate?
 - Sweets and regular sugar beverages
 - Starches and starchy vegetables
 - Fruit
 - Milk

Carb Counting by Choices

Women



Men



- Need about 3-4 carb choices per meal

- Need about 4-5 carb choices per meal

If you like to snack, save one of the choices from your meal to eat later

Carb Counting by Grams

Women



Men



- Need about 45-60 grams per meal

- Need about 60-75 grams per meal

If you like to snack, save 10-15 grams from your meal to eat later

Carbohydrate Counting Resources

- Nutrition labels
- Books
 - Calorie King
 - Complete Book of Food Counts
- Recipes
- Exchange books
- Internet Resources
 - www.calorieking.com
 - Restaurant Websites
- Phone apps
 - Go Meals
 - MyFitness Pal
 - Restaurant Nutrition
- Pump food database

1 Starch = 15gm Carbohydrate

- Bread 1 slice
- Waffle/Pancake 1 small
- Taco/Fajita 1 small
- English Muffin 1/2 muffin
- Small Hamburger Bun 1/2 bun
- Small Bagel 1/2 bagel
- Cornbread 2" square
- Roll 1 small

1 Starch = 15gm Carbohydrate

- Potatoes/Sweet Potatoes $\frac{1}{2}$ cup
- Corn $\frac{1}{2}$ cup
- Dried Beans $\frac{1}{2}$ cup
- Peas $\frac{1}{2}$ cup
- Oatmeal/Grits $\frac{1}{2}$ cup
- Plain Cereal $\frac{3}{4}$ cup
- Rice $\frac{1}{3}$ cup
- Pasta $\frac{1}{3}$ cup

1 Fruit = 15gm Carbohydrate

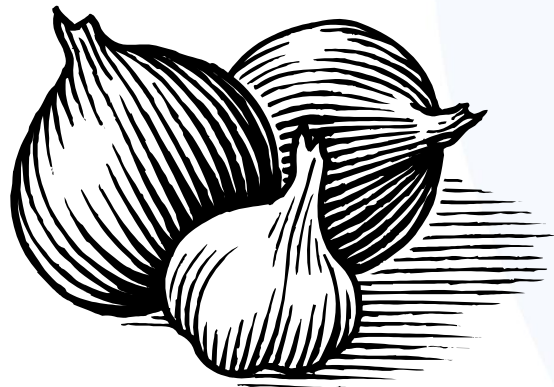
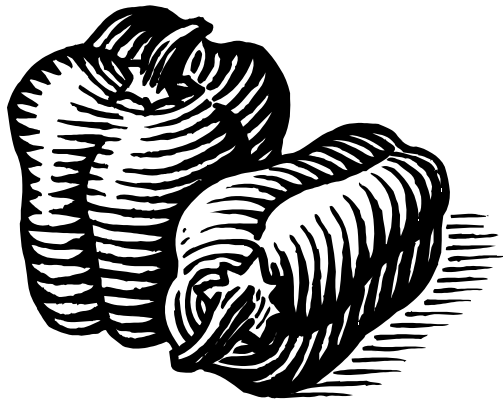
- Fresh Fruit 1 small
- Cantaloupe/Honeydew 1 cup
- Strawberries/Watermelon 1 $\frac{1}{4}$ cup
- Grapes 17 small
- Banana $\frac{1}{2}$ banana
- Canned Fruit $\frac{1}{2}$ cup
- Dried Fruit $\frac{1}{4}$ cup
- Juice (orange/apple/pineapple) $\frac{1}{2}$ cup

1 Milk = 12gm Carbohydrate

- 1 cup white milk
- 1/2 cup chocolate milk
- 1/2 cup evaporated milk



1 Vegetable = 5gm Carbohydrate



- 1 cup raw
- ½ cup cooked
 - Green Beans
 - Carrots/Beets
 - Broccoli/Cauliflower
 - Onions/Peppers
 - Squash/Zucchini
 - Cucumber/Tomato
 - Cabbage/Greens

Other Carbohydrates

- Sweets! Other carbohydrates are foods that are generally very high in carbohydrate due to a combination of sugar, starch, fruit, and/or milk content.
- These foods can be substituted for starches, fruit, and/or milk on a meal plan; however, these foods will contain more fat, calories, and cholesterol, with less vitamins and minerals.
- These foods should only be used for special occasions or dire situations.

Sweet Tooth Samples

- Brownie, unfrosted
 - 2” = 15gm carb
- Cake, unfrosted
 - 2” square = 15gm carb
- Brownie, frosted
 - 2” square = 30gm carb
- Cake, frosted
 - 2” square = 30gm carb
- Fruit pie
 - 1/6 of pie = 45gm carb



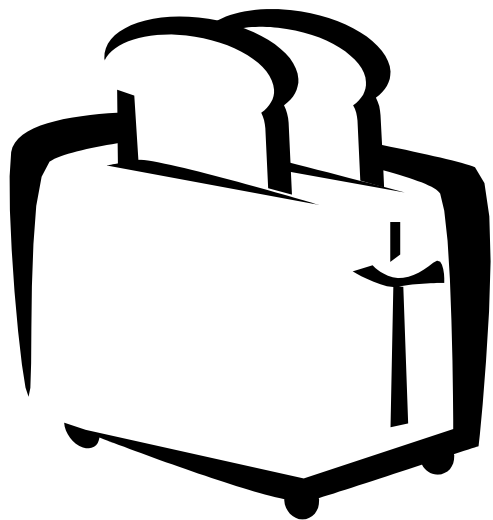
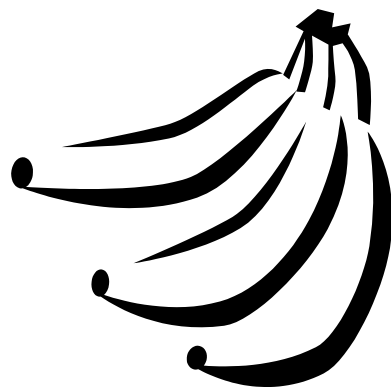
Carb Counting Practice

Nutrition Facts	
Serving Size 1 cup (236ml)	
Servings Per Container 1	
Amount Per Serving	
Calories 80	Calories from Fat 0
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	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol Less than 5mg	0%
Sodium 120mg	5%
Total Carbohydrate 11g	4%
Dietary Fiber 0g	0%
Sugars 11g	
Protein 9g	17%
<hr/>	
Vitamin A 10%	Vitamin C 4%
Calcium 30%	Iron 0% • Vitamin D 25%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	

1. Start with Serving Size (Is that how much you are eating?)
2. Is this a high fat food? (Is it more than 20% of the Daily Value?)
3. Is this a high sodium food? (Is it more than 20% of the Daily Value?)
4. How many carbohydrate grams does this food provide? (each 15 grams counts as 1 carb choice)



Count it Out



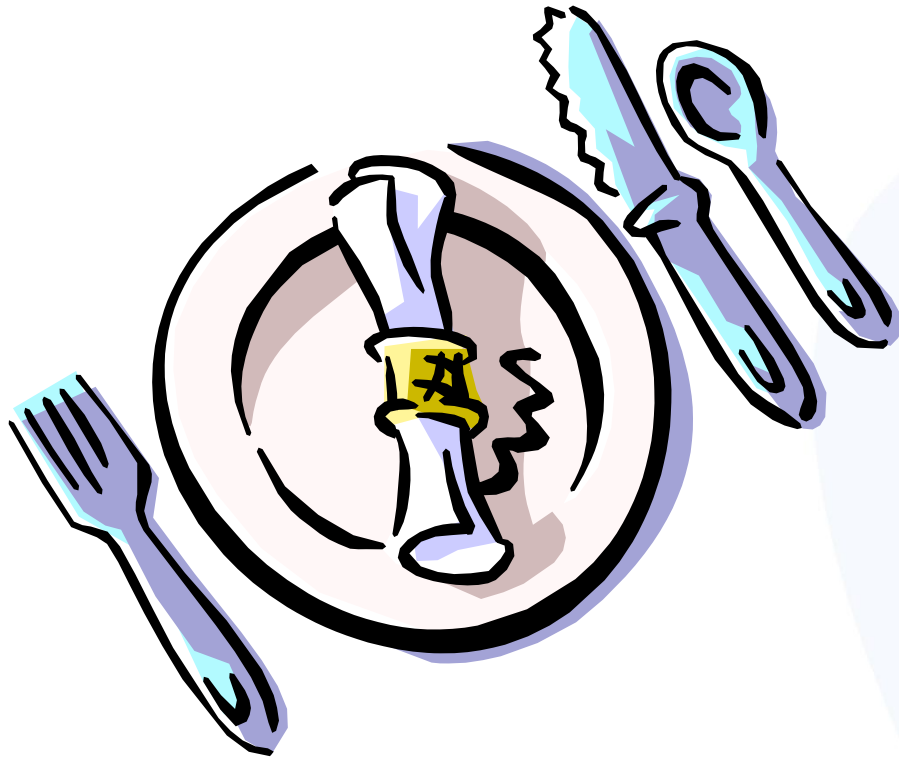
- **Breakfast**
 - 2 wheat toast
 - 1T peanut butter
 - ½ banana
 - 1 cup skim milk
- **Total Carbohydrate**
 - 60gm

Count it Out

- **Lunch**
 - Turkey wrap
 - Lettuce/tomato
 - Ranch dressing
 - Medium bag of chips
- **Total Carbohydrate**
 - 60gm



Count it Out



- **Supper**
 - 3 strips fried fish
 - Handful of fries
 - 2 hush puppies
 - 1 cup green salad
- **Total Carbohydrate**
 - 65gm

Facts on Fat

- Fat is more nutrient dense providing 9 calories per gram
 - Cutting out even a small amount of fat can significantly decrease total calorie intake
- Fat slows down the absorption of carbohydrate
 - BG may stay higher for longer if the meal contains a large amount of fat
- Fat causes the body to be more resistant to insulin
 - Insulin, produced in the body or injected, may not work as well since fat causes the cell to be more resistant

Choosing Lean Protein

- **Lean Protein**

3oz = 105kcal; 3 gm fat

- Chicken/Turkey
- Fish/Shellfish
- Venison
- “Loin” or “Round” meats
- Turkey Sausage/Bacon
- Low-fat cheese
- Egg Whites
- Soy Protein

- **High-Fat Protein**

3oz = 225kcal; 21 gm fat

- Bacon/Sausage
- Hot Dogs
- Ground Beef
- Pork Chop
- Ribeye/T-Bone Steak
- Fried Meats
- Cheese
- Eggs

Cutting the Fat

- Choose low-fat versions of fat products
- Decrease portion sizes of regular-fat products
- Choose baked, broiled, or grilled meats instead of fried
- Remove skin from chicken and choose white meat over dark meat
- Limit starches that contain added fat such as biscuits and pop-corn
- Use non-stick cooking spray instead of oil

Choosing Better Fats

- **Saturated/Animal Fats**

- Bacon
- Butter
- Lard/Shortening
- Cream Cheese
- Sour Cream
- Cheese
- Whole/2% Milk

- **Unsaturated/Plant Fats**

- Nuts/Peanut Butter
- Olives/Olive Oil
- Vegetable Oil
- Avocado
- Margarine
- Mayonnaise
- Salad Dressing

Reading Labels

Nutrition Facts	
Serving Size	5 Crackers (16g)
Servings Per Container	About 28
Amount Per Serving	
Calories 80	Calories from Fat 40
	% Daily Value*
Total Fat 4.5g	7%
Saturated Fat 1g	5%
<i>Trans</i> Fat 0g	
Polyunsaturated Fat 1.5g	
Monounsaturated Fat 2g	
Cholesterol 0mg	0%
Sodium 140mg	6%
Total Carbohydrate 9g	3%
Dietary Fiber less than 1g	1%
Sugars 1g	
Protein 1g	
Vitamin A 0%	• Vitamin C 0%
Calcium 0%	• Iron 2%
*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

- **Total Carbohydrate**
30 – 60gm/meal
 - Fiber (25 – 35gm/day)
 - Sugar alcohol
- **Total fat**
50 – 66gm/day
- **Saturated fat**
16 – 22gm/day
- **Sodium**
2,000mg/day



What about Net Carbs?

- The term “net carbs” has not yet been defined by the FDA.
- Manufacturers are getting the “net carb” value by subtracting out all of the fiber and sugar alcohols from the total carbohydrate.
- There are currently standard rules for adjusting for fiber and sugar alcohols that is slightly different from that stated above.

Adjusting for Fiber

- If the fiber content is 5 grams or more, you can subtract half of the fiber out of the total carbohydrate.

Total Carbohydrate	45 g
Dietary Fiber	8 g (Half = 4)
Sugar	6 g
Other Carbohydrate	11 g

Subtract from total carb: $45 - 4 = 41$

Adjusted Total Carbohydrate = 41 g

Adjusting for Sugar Alcohol

- Sugar alcohols are a portion of the sugar molecule that is “chopped off” and used to sweeten foods.
- If a product has “sugar alcohols,” any other word ending in “ol,” or “isomalt,” listed under the total carbohydrate, it is considered sugar alcohol.
- Because sugar alcohol does not absorb like other carbohydrates, if the product contains 5 or more grams we can subtract half of it out of the total carbohydrate.

Adjusting for Sugar Alcohol

- Example:

Total Carbohydrate	22 g
Sugar	1 g
Other Carbohydrate	6 g
Sugar Alcohol	14 g (Half = 7)

Subtract from total carb: $22 - 7 = 15$

Adjusted Total Carbohydrate = 15 g

Dining Out

- Choose restaurants that offer healthier options
- Have a plan, and do not look at the menu for long
- Share the meal with a family member or friend
- Choose foods that are baked, broiled, or grilled rather than fried
- Ask to substitute non-starchy vegetables for starchy vegetables
- Ask for all condiments and sauces on the side
- Ask for a “to-go” box after the food arrives; place half of the meal in the box to bring home

Tips for Eating Out

- Decide what is important
- Remember why you use a meal plan
- Know your meal plan
- Chose plain food
- Plan ahead
- Ask how foods are prepared
- Prepare vegetables without added fat
- Substitute plain vegetable, starch or fruit for sweetened menu item

Use of Alcoholic Drinks

- Alcohol can be safely used only when your blood glucose is well controlled
- Alcohol can lower blood glucose
- Drink only with meals or snacks
- Drink in moderation
 - 1 oz liquor
 - 4 oz wine
 - 12 oz beer



Use of Alcoholic Drinks

- Avoid sweet wine, liqueurs and sweetened mixed drinks
- Use water, soda water, and sugar-free carbonated drinks
- Sip slowly
- Do not drink before, during or after vigorous exercise

Putting it all Together

- Read labels for carb counting accuracy
- Measure foods at home for better estimations when dining out
- Know carbohydrate in commonly eaten foods
- Decrease portion sizes to cut calories and fat
- Make better choices when dining out
- Monitor BG frequently during sick days
- Monitor BG frequently when consuming alcohol