

Nutrition and Carb Counting

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Objectives

- Learn carbohydrate basics
- Explain the difference between basic and advanced carbohydrate counting (CC)
- Learn the benefits of CC
- Identify barriers to effective CC
- Identify how CC can be effective in managing diabetes with dosing insulin and technology

What is a carbohydrate?

- One of 3 **macronutrients** that we get from food to supply energy to the body.
 - **Carbohydrates, protein, and fat**
- Has the greatest effect on blood glucose
- Exists as sugars, starches, and fiber in foods

Foods Containing Carbohydrates

Starches	Beans and legumes Fruits Whole grains like oats and brown rice Starchy vegetables
Fiber	Foods listed above + Nonstarchy vegetables Nuts & seeds
Sugars	Naturally occurring sugars in fruit and milk Added sugars found in sweets and desserts

Foods Containing Carbohydrates

- Starches & Fruits = 15 g carbohydrates
 - Serving sizes vary – in general,
 - 1 slice bread, ½ cup beans and starchy veggies, 1/3 cup pasta and rice
 - Half banana, small round fruit, 1 cup melons and berries
- Dairy = 12 g carbohydrates
 - 8 ounces milk
 - 6 ounces plain yogurt
- Nonstarchy Vegetables = 5 g carbohydrates
 - ½ cup cooked or 1 cup raw



Basic Carbohydrate Counting (CC)

- Focuses on
 - portion sizes,
 - identifying carb containing foods,
 - timing &
 - amount of carbohydrates
- **1 Choice = 15 grams of carbohydrates**



Dietitian's Role

- The dietitian will teach:
 - Portion sizes
 - How to read a nutrition facts label
 - How blood glucose is affected by
 - Different foods
 - Medications
 - Exercise



Who Can Benefit?

- Patients
 - With insulin resistance who desire weight loss
 - Who control their diabetes with diet and exercise
 - On a mixed dose insulin regimen
 - On a fixed dose of rapid-acting insulin

Using the Nutrition Facts Label

Carbohydrate Grams	Carbohydrates Choices
5 or less	0
6-10	½
11-20	1
21-25	1 ½
26-35	2
36-40	2 ½
41-50	3
51-55	3 ½
56-65	4

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans 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	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* 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.

<https://www.fda.gov/food/nutrition-education-resources-materials/new-nutrition-facts-label>

Meal Planning

- Encourage patients to meal plan, prep, and measure
- Plan will help patient estimate carbohydrate intake
 - Most people need between 3-5 servings of carbohydrates at meals and 1-2 servings of carbohydrates at snacks

Advanced Carbohydrate Counting

- Useful for patients who take insulin
- Patients can adjust bolus insulin doses based on the amount of carbohydrates consumed at meals = more flexibility
- **Insulin:Carb Ratio**

Dietitian's Role

- Help the patient learn how to appropriately and accurately count carbohydrates
- Help the patient understand basal vs bolus insulin
- Teach bolus insulin dosing based on carbohydrate intake



Who Can Benefit?

- Patients
 - Who understand basic carb counting and are ready to learn more
 - Do Multiple Daily Injections
 - On Insulin Pump Therapy

Benefits of ACC

- Prevent or delay diabetes-related complications
- More flexibility with meals
- Blood glucose improvement
- More accurate diabetes medication doses
- Better compliance from patients

Advanced CC Barriers

- Patients must be able to:
 - Perform basic math skills
 - Willing to complete before/after meal blood glucose checks
 - Accurately estimate portions

- “Hidden” Carbohydrates



Take Home Message

- Carbohydrate counting & exchanges are both useful tools to help patients estimate carbohydrate intake
- Accurate CC (whether basic or advanced) can lead to better patient outcomes