Healthy Eating Lifestyle Changes Part 1

University of Virginia
Virginia Center for Diabetes Prevention & Education

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Class Topics

I. More on Carbohydrate Consistency
II. Understanding Food labels
III. Carbohydrate Counting
IV. Reducing Post-meal Glucose Spikes
V. SMART Goals

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What's in it for You?

Going deeper on understanding carbohydrates and making eating choices will impact

- ✓ How you feel
- ✓ Your blood sugar management
- ✓ Helps manage or prevent complications of diabetes

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Eating Carbohydrates Consistently

Eating a consistent amount of carbohydrates per meal/snack help with

- ✓ Promotes healthy blood sugars
- ✓ Helps manage weight
- ✓ Reduces hunger
- ✓ Helps manage or prevent complications of diabetes
- ✓ Eating similar amounts meal to meal (ex. Eating similar amounts of carbohydrates at dinner)

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More on Eating a Consistent Amount of Carbohydrate

1 serving of carbohydrate = 15 grams of carbohydrate

(Carbohydrate amounts should be individualized.)

* Consult a Registered Dietician for an individualized diet plan.

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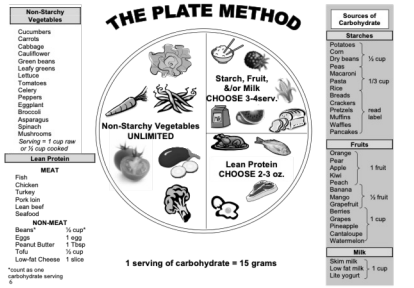

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Resources for Carbohydrate Counting

- Handout "Carbohydrate Food List"
- Online Food tracker
  - FatSecret,
  - LoseIt
  - Myfitness Pal
- Look at ***Total Carbohydrate*** on food label
  - May consider fiber

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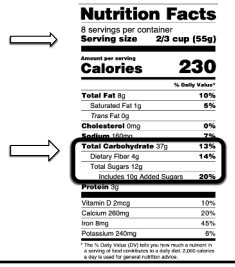
Food Label



Total Carbohydrate: Includes fiber, starch and sugar (natural & added)

Fiber: Those carbs not digested fully so little impact on blood sugar. Goal 25 grams per day.

Total Sugars: Include natural sugars from milk and fruit and added sugars

Added Sugars: Added simple sugar

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Food Label: Mom's Raisin Bran

- What is the serving size?
- How many grams of carbohydrate per serving?
- Tell us where that carbohydrate is coming from?
- If 15 grams of carbohydrate make 1 serving of carb, how many servings of carb are in 1 cup of cereal?
- 43/15=2.9 or 3 svgs

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- What is the serving size?
- How many grams of carbohydrate per serving?
- Tell us where that carbohydrate is coming from?
- If 15 grams of carbohydrate make 1 serving of carb, how many servings of carb are in 3/4 cup of flavored yogurt?
- 17/15 ~ 1 svg

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Breakfast example #1 - answers

- **1 cup cooked oatmeal = 2**
- **¾ cup fresh blueberries = 1**
- **1 packet artificial sugar = 0**
- **¼ cup walnuts = 0**
- **1 cup skim milk = ~1**

~4 Total Carbohydrate Servings

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Breakfast example #2 - answers

- 2 eggs = 0
- 1 turkey sausage patty = 0
- 2 slices toast = 2
- 1 tablespoon margarine = 0
- 1 small banana = 1
- 1 cup orange juice= 2

5 Total Carbohydrate Servings

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Lunch example #1 - answers

- 1 cup tomato soup = 1
- Grilled ham & cheese sandwich (2 slices bread, 2 slices cheese, 2 slices ham, 2 tsp. margarine) = 2
- ½ cup coleslaw (made with cabbage, carrots, green peppers, mayo, and vinegar) = 0
- 1 cup melon = 1
- 1 large oatmeal-raisin cookie = 1-2
- Tea with Splenda = 0

5-6 Total Carbohydrate Servings

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Lunch Example #2 - answers

- Hamburger or veggie patty = 0
- 1 whole wheat hamburger bun = 2
- 1 cup raw veggies = 0
- 1 container light yogurt = 1
- Water = 0

3 Total Carbohydrate Servings

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Dinner example #1 - answers

- **5-oz. salmon filet, grilled with spices = 0**
- **1 medium (6 oz.) baked sweet potato with 2 teaspoon margarine = 2**
- **10 stalks of asparagus pan sautéed in canola oil = 0**
- **1 medium fresh peach with ½ cup ice cream and 1 tablespoon chopped pecans = 2**
- **Water = 0**

4 Total Carbohydrate Servings

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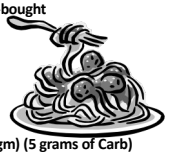
Dinner Example #2 - answers

- **1 cup pasta = 3**
- **1/2 cup spaghetti sauce = 0 or 1 if store-bought**
- **3 meatballs = 0**
- **2 tablespoons parmesan cheese = 0**
- **Green salad = 0**
- **1 breadstick = 1**
- **1 Lindt dark chocolate truffle = 0 (3 =15gm) (5 grams of Carb)**
- **Iced Tea = 0**

4-5 Total Carbohydrate Servings



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After Meal Glucose Levels

Measurement of blood glucose level after eating

Goal is < 140-180 - 2 hours after a meal

Why is it important?

- Blood glucose variability has been linked to heart disease
- 2-hr high blood glucose may contribute to coronary heart disease

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After Meal Elevated Glucose

- **Short-term Effects**
  - Fatigue
  - Impaired concentration
  - Moodiness
  - Increased hunger
  - Elevated A1C
- **Long-term Effects**
  - It is an independent risk factor for cardiovascular disease.

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Minimize Post-Meal Glucose Rise

A. Timing of insulin

B. Activity after a meal

C. Timing of largest meal

D. Eating carbs last

E. Resistant starch

F. Adding vinegar

G. Glycemic index/load

Scheiner, G. & Perry, ML (2022). Here's looking at you, postprandial! Strategies for managing postmeal glucose levels. *Lifescan - Diabetes Institute*. https://www.lifescandiabetesinstitute.com/

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Timing of Insulin

Discuss timing of insulin with your healthcare provider.

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Activity After a Meal

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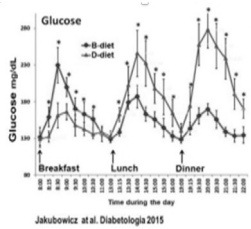
Meal Timing

Eating the largest meal in the morning and smaller meal in the evening decreased the glucose response throughout the day.



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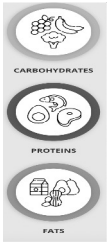
Sequence of Macronutrients

Having a small portion of protein or fat before a meal induces the release of certain hormones that slow gastric emptying and stimulate insulin secretion before carbohydrates are eaten.

This allows the body to use the meal insulin more efficiently and avoids high glucose spikes.



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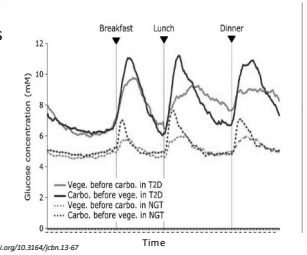
Carbs First vs Carbs Last

Eating vegetables before eating carbohydrates helps the insulin to be more effective in keeping blood glucose levels stable.



Saeko, et.al, J Clin Bio Nutr 2014, https://doi.org/10.3164/jcbn.13-67

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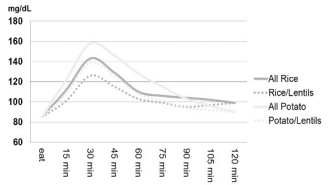
What You Eat Matters



Eating Carbs along with a protein or fat will slow down absorption and decrease the blood glucose rise.

Morovek et al. The Journal of Nutrition, 2018; doi: https://doi.org/10.1093/jn/nxy018

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Choose Low Glycemic Index

(Low)	Average	Fast (High)
Pasta	Fruit	Breads/Crackers
Legumes	Juice	Salty Snacks
Salad Veggies	Pizza	Potatoes
Dairy	Soup	Rice
Chocolate	Cake	Cereals
		Sugary Candies

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Resistant starch

- Carbohydrates have the most substantial influence on blood sugar. Cooling rice after cooking causes the starch to become less absorbable and reduces the carbohydrate available for digestion.

Post-meal glucose response after test meals

	Fresh Rice	Cooled Rice
Max Glucose	198 mg/dL (185-210 mg/dL)	178 mg/dL (169-196 mg/dL)
Max Glucose Increase	70 mg/dL (45-84 mg/dL)	48 mg/dL (27-64 mg/dL)

Stražyk, S et al: Nutrition and Diabetes 2022 12:21 doi.org/10.1038/s41387-022-00196

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Addition of Vinegar

- Studies have shown that adding a small amount of vinegar* to food can blunt the postmeal glucose rise. Lower PH foods and drinks delay postmeal glucose rise.

*Avoid if you have heartburn

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Set Your Goal

Create your SMART Goal

- **SPECIFIC:** Give the who, what, when, where, and how of your goal
- **MEASURABLE:** Establish set criteria for measuring your progress
- **ATTAINABLE:** Instead of vowing to cook a healthy meal seven nights a week, shoot for one or two more than what you currently
- **REALISTIC:** Make sure your goal is something that you are willing and able to work toward
- **TIMELY:** Set a deadline for when you will have achieved your goal

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