

LESSON 7: ALL ABOUT CARBS

Recipes for Health
Prepared by Common Threads

ABOUT THIS LESSON

In this lesson, participants will learn about carbohydrates. Participants will identify differences between simple and complex carbohydrates, recognize good sources of carbohydrates and understand the importance of fiber in the diet. Participants should also understand appropriate serving sizes when consuming carbohydrates and, if pre-diabetic or diabetecic, not exceed maximum recommended levels of carbohydrates at meals or snacks. Participants will also learn how to purchase fish from a fishmonger or grocery store seafood department.

KEY UNDERSTANDINGS

Nutrition

- Participants will be able to (PWBAT) differentiate between carbohydrate types
- PWBAT use the Plate Method for visually evaluating carbohydrates in a balanced meal
- PWBAT calculate carbohydrate exchanges

Culinary

- PWBAT safely work with raw fish
- PWBAT properly set-up an oven and baking tray
- PWBAT properly measure ingredients
- PWBAT demonstrate safe and accurate knife skills
- PWBAT make yogurt dip

MATERIALS NEEDED

- Printed recipes for each participant
- Ingredients
- Cooking equipment
- [Lesson Canva Slide Deck](#)

BEFOREHAND

Steps to successfully set up your classroom for learning:

- Set up the mise en place to organize recipe ingredients so they are ready for participants to use (e.g. wash produce, divide up ingredients for each group)
- Have participants wash their hands

LESSON PLAN

DURATION - 120 minutes

- 20 min Nutrition (Presented by Registered Dietitian or Nutritionist)
- 75 min Cooking + Cleaning (Conducted by Chef Instructor)
- 15 min Eating + Goal Setting
- 10 min Conclusion

MENU - Caribbean

- Jerk Spiced Tilapia
- Callaloo
- Coconut Lime Yogurt

BACKGROUND INFORMATION

- *Carbohydrates represent one of the three macronutrient groups that we eat. Fat and Protein represent the other macronutrient groups. Carbohydrates give us energy! There are several types of carbohydrates:*
 - Complex Carbohydrates
 - Starchy Vegetables
 - Legumes
 - Grains
 - Whole Grains with bran and germ intact (slow release of sugars)
 - Refined Grains with only endosperm (fast release of sugars)
 - Simple sugars
 - Note that regardless of the source of the sugar, whether it be naturally occurring or refined and added to a food, they are the same sugars and they all have calories that count. However, naturally occurring sugars are packaged with fiber, vitamins and minerals in a whole food and are not as easily broken down so they don't raise your blood glucose as much.
 - Naturally occurring
 - Lactose - galactose and glucose (milk and dairy products)
 - Sucrose - fructose and glucose (fruits, honey, maple syrup)
 - Maltose - glucose and glucose (from malted seeds and grains)
 - Added (refined) sugars
 - Sucrose (table sugar, brown sugar, molasses, syrup, etc)
 - Fiber

- Always found with whole foods (unrefined)
 - Indigestible component of plants (fruits, vegetables, whole grains, etc)
 - Two main classes, soluble and insoluble
 - Recommended to consume 21-38 grams per day (differs by age and gender)
- Reading nutrition labels will be the best source of information for when you are determining the number of carbs in foods you are consuming. When eating out be sure to check the nutrition on menu boards or online.
 - Eating appropriate amounts of carbohydrates! Always look to preferentially eat whole food complex carbohydrates such as vegetables, whole grains, and fruits. Limit foods that contain refined grains and added sugars. That doesn't mean you cannot have a dessert or a treat again. All foods fit in moderation! But be mindful of what's contained in the dessert or treat and choose the most unprocessed option.
 - In today's menu we are also incorporating a fish dish. Introduce the benefits of fish, especially fatty fish with heart healthy omega-3 fatty acids, and tips for buying fish. Note, tilapia is not considered a fatty fish, but still has some omega-3 fatty acids. It's a healthy protein choice with lots of vitamin B₁₂, phosphorus, selenium and choline.

Today's lesson uses tilapia, an economical fish that is low in fat and high in protein. What to look for when buying fish:

- *Bright, clear eyes: the eyes of old or less fresh fish will look milky or cloudy and sink into the head.*
- *Bright redness around the gills: if the gills are more of a rust or brick color, the fish may have been sitting out for a while.*
- *Shiny, metallic skin: fish that sits out for a while will become discolored and dull-looking in certain patches.*
- *Fresh fish never smells of fish.*
- *What to look for when buying fillets:*
 - *Brightly colored flesh: if the flesh looks grayish or dull, do not buy it.*
 - *Flesh that bounces back: ask the fishmonger to press on the flesh of the fish. If it bounces right back, it's good. If the indentation stays, the fish is too old.*
 - *Shiny, metallic skin: if the skin is still on the fillet, you can use the same test as you would for a whole fish. If the skin is discolored and dull don't buy it.*
 - *Clear liquid on the flesh: if there is a milky liquid sitting on the flesh, don't buy the fish. That is the first sign of rot.*

INTRODUCTION - 20 MINUTES

Nutrition Presentation

1. Introduce participants to the class topic
2. Introduce the Plate Method (this method is an alternative that is more visual than carbohydrate counting and should be the primary focus. Detail on carbohydrate counting is below if it is determined that it is more appropriate for the participants)

- a. The Plate Method focuses on portion sizes and portion control. The same portion guidelines used for the diabetic exchange are used but in a visual form making it easier to understand. The portions are based on a standard 9" plate. Any **protein** - meat, poultry, tofu, legumes, pulses, eggs or fish should be between 3-5 oz per meal, or around the size of the palm of your hand, and should cover one **quarter** of the plate. **Starchy carbohydrates** will make up 2-4 servings per meal and cover the second **quarter** of the plate. Examples of a serving are one slice of bread, ½ cup of corn or potatoes, ½ cup of rice or ½ cup of pasta. Recommended portions for fresh or cooked **non-starchy** vegetables including salad are the other **half** of the plate. Milk and fruit are added to the side of the plate for a complete meal. Please see illustration.
3. If your care team is recommending Carbohydrate Counting, work with your care team to determine the calorie and carbohydrate goals in consultation with your Registered Dietitian Nutritionist. General recommendations from the American Diabetes Association for pre-diabetic and diabetic clients (share only if appropriate for the audience):
- Meal planning using Carbohydrate Counting. This meal plan method will help you manage your blood glucose and prevent spikes in your blood glucose after you eat. One exchange of carbohydrates ("CHO") is 15g. There are booklets published that give exchanges for all foods, not just those that are pure carbohydrate because other foods also contain carbohydrates that must be taken into account. Examples: 1 small apple is 1 exchange = 15g CHO, a medium banana is 2 exchanges = 30g CHO, ½ C cooked rice is 1 exchange = 15g CHO, 1 cup (8 fl. oz.) of whole milk = 12g CHO
- Full Diabetic Exchange List
https://diabetesed.net/page/_files/THE-DIABETIC-EXCHANGE-LIST.pdf
- Maximum of 45-60 g CHO at meals (3-4 exchanges)
 - 15 g CHO at snacks (1 exchange)
4. Review the nutrition label as a source of information. When using carbohydrate counting, look at the total number of carbohydrates including fiber.

Nutrition Labels:

Jerk Spiced Tilapia	Callaloo	Coconut Lime Yogurt
<p>Nutrition Facts</p> <p>6 servings per container Serving size 1 small or half a large fillet (124g)</p> <hr/> <p>Amount per serving Calories 160</p> <hr/> <p>% Daily Value*</p> <p>Total Fat 7g 9%</p> <p>Saturated Fat 1.5g 8%</p> <p>Trans Fat 0g</p> <p>Cholesterol 60mg 20%</p> <p>Sodium 100mg 4%</p> <p>Total Carbohydrate 2g 1%</p> <p>Dietary Fiber 1g 4%</p> <p>Total Sugars 0g</p> <p>Includes 0g Added Sugars 0%</p> <p>Protein 24g</p> <hr/> <p>Vitamin D 4mcg 20%</p> <p>Calcium 24mg 2%</p> <p>Iron 1mg 6%</p> <p>Potassium 379mg 8%</p> <p><small>*The % Daily Value 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.</small></p>	<p>Nutrition Facts</p> <p>servings per container Serving size (282g)</p> <hr/> <p>Amount per serving Calories 120</p> <hr/> <p>% Daily Value*</p> <p>Total Fat 7g 9%</p> <p>Saturated Fat 2g 10%</p> <p>Trans Fat 0g</p> <p>Cholesterol 0mg 0%</p> <p>Sodium 300mg 13%</p> <p>Total Carbohydrate 11g 4%</p> <p>Dietary Fiber 2g 7%</p> <p>Total Sugars 3g</p> <p>Includes 0g Added Sugars 0%</p> <p>Protein 2g</p> <hr/> <p>Vitamin D 0mcg 0%</p> <p>Calcium 68mg 6%</p> <p>Iron 2mg 10%</p> <p>Potassium 398mg 8%</p> <p><small>*The % Daily Value 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.</small></p>	<p>Nutrition Facts</p> <p>5 servings per container Serving size 3 T (51g)</p> <hr/> <p>Amount per serving Calories 60</p> <hr/> <p>% Daily Value*</p> <p>Total Fat 3g 4%</p> <p>Saturated Fat 2.5g 13%</p> <p>Trans Fat 0g</p> <p>Cholesterol 0mg 0%</p> <p>Sodium 15mg 1%</p> <p>Total Carbohydrate 6g 2%</p> <p>Dietary Fiber 1g 4%</p> <p>Total Sugars 5g</p> <p>Includes 3g Added Sugars 6%</p> <p>Protein 4g</p> <hr/> <p>Vitamin D 0mcg 0%</p> <p>Calcium 45mg 4%</p> <p>Iron 0mg 0%</p> <p>Potassium 83mg 2%</p> <p><small>*The % Daily Value 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.</small></p>

5. Ask the participants the following questions:

- How many carbohydrates (exchanges) are in this meal?
- Does this fall within the recommendations for the number of grams of carbohydrate to consume at a meal?
- How many grams of fiber are in this meal?
- How does this compare to the recommendations for daily intake? Women 21-25g/day, men 30-38g/day, children vary with age and size.

<i>For one serving of each recipe</i>	
Calories	340
Total fat	17 g
Total Carbohydrate	19 g
Total Fiber	4 g
Sodium	415 mg
Protein	30 g

- **Nutritional Fact:** Sweet potatoes are a starchy root vegetable that are grown the world over. In the US, the most commonly seen varieties are the Garnet and Jewel which have orange flesh, but sweet potatoes also come in white (e.g. Hanah) and purple (e.g Stokes) varieties. A 200g serving of cooked sweet potato is loaded with vitamin A (from beta

carotene) with a whopping 770% of our daily value (DV), and with vitamin C at a respectable 65% DV. They also have an abundance of fiber with 6.6g per serving.

- **Cultural Fact:** Callaloo is a traditional West African dish.: Crab and Callaloo - a dish which was created by the African slaves sometime around 1530 AD when the island was under Spanish occupation.

CLASSROOM COOKING + CLEANING - 75 MINUTES

1. Have participants put on aprons, hats/hair nets, and wash hands.
2. Review recipes and demo:
 - Knife skills
 - Simple braising on the stove (Callaloo)
 - Introduce the benefits of fish and tips for buying it (see *Background Information*)
3. Working in groups of 3-4, have each group make the recipes in the following order:
 - a. Callaloo
 - b. Jerk Spiced Tilapia
 - c. Coconut Lime Yogurt

EATING AND GOAL SETTING - 15 MINUTES

1. Participants gather to enjoy the meal together.
2. As a group or in pairs, discuss what was learned in class today and have participants set simple and realistic goals about what they can incorporate from today's class into the coming week.

CONCLUSION - 10 MINUTES

- Answer any remaining questions.
- Review the Key Understandings for this lesson.
- Clean-up dining area.

RECIPES:

Callaloo

Yields 5 servings

Ingredients:

- 1 C yellow or white onion, diced
- 1 sweet potato, diced
- 1 serrano pepper, minced
- 1 tsp fresh thyme
- 2 tsp garlic, peeled and minced
- 2 Tbsp olive oil
- 1/2 tsp salt
- 1/4 tsp pepper
- 3/4 C light coconut milk
- 3 C water
- 8 C spinach

Directions:

1. Mise en Place

- Wash and dry the sweet potato, pepper, and thyme.
- Dice the onion.
- Peel and dice the sweet potato.
- Peel the garlic.
- Mince the garlic, serrano, and thyme.
- Measure out the ingredients.

2. Prepare the Callaloo

- In a large sauté pan, heat oil over medium-high heat.
- Add the onions and cook until fragrant.
- Add the sweet potato, garlic, peppers, thyme, salt, and pepper.
- Cook, stirring for 30 seconds.
- Add the coconut milk and the water. Cook, stirring, until the sweet potatoes are tender and the liquid is slightly reduced, about 10 minutes.
- Add the spinach and stir until wilted.
- Remove from heat and let rest.

Jerk Spiced Tilapia

Yields 6 servings

Ingredients:

- 1/2 jalapeño, minced
- 2 limes, quartered
- 2 cloves garlic, peeled and minced
- 1 tsp dried thyme
- 1 tsp chili powder
- 1 tsp dried ginger
- 1/2 tsp ground nutmeg
- 1/2 tsp cinnamon
- 1 tsp pepper
- pinch of salt
- 2 Tbsp olive oil
- 3 large or 6 small tilapia fillets

Directions:

1. Mise en Place

- Preheat oven to 400°F.
- Line a baking tray with foil.
- Wash and dry jalapeno and limes.
- Seed and mince the jalapeño.
- Quarter the limes.
- Peel and mince the garlic.
- Measure out the ingredients.

2. Prepare the Dry Rub Seasoning

- In a small bowl, add garlic, jalapeño, thyme, chili powder, ginger, nutmeg, cinnamon, pepper, salt, and olive oil.
- Mix together to form a paste.

3. Prepare the Tilapia

- Place the tilapia fillets onto the prepared baking tray.
- Spread the seasoning onto each side of the fillets.

4. Bake the Jerk Spiced Tilapia

- Place into the oven and bake the fillets until just cooked through, about 7 minutes.
- Remove from the oven and let rest for 5 minutes.
- Squeeze fresh lime juice onto each fillet.

Coconut Lime Yogurt Dip

Yields 5 servings

Ingredients:

- 1/4 C shredded coconut, unsweetened
- 3/4 C nonfat plain yogurt
- 1 Tbsp honey
- 1 Tbsp lime juice
- Fresh fruit for dipping

Directions:

1. Mise en Place

- Measure out the ingredients.

2. Prepare the Yogurt Dip

- In a medium bowl, add the coconut, yogurt, honey, and lime juice.
- Mix until well combined.

3. Serve the Dip

- Enjoy the dip with fresh fruit of your choice

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