

# LESSON 5: FATS & HEART HEALTH

*Recipes for Health*  
*Prepared by Common Threads*

## ABOUT THIS LESSON

In this lesson, participants will be introduced to fats (also known as lipids) and heart health. Participants will learn about different types of lipids, and understand that eating too much of some kinds, such as saturated and man-made trans fats, may raise low density lipoprotein (LDL) and lower high density lipoprotein (HDL). An increase in the number of LDL particles can increase the risk of heart disease. LDL cholesterol is sometimes called the “bad” cholesterol and can get bad press, but this is a misnomer. Likewise, HDL cholesterol is sometimes called the “good” cholesterol. It’s important to point out that while excess LDL particles increase the risk of heart disease, your body uses both LDL and HDL for proper transport of lipids, cholesterol and fat soluble vitamins to the tissues of your body. There really is no “good” and “bad”, but rather appropriate amounts of each. Participants will also learn how oils are extracted and why it is important to consider the smoke point of a given oil or fat before using it for cooking.

## KEY UNDERSTANDINGS

### Nutrition

- Participants will be able to (PWBAT) differentiate between types of lipid? A fat is a lipid that is solid at room temperature and an oil is a lipid that is liquid at room temperature.
- PWBAT identifies food sources of saturated, unsaturated and man- made trans fat.

### Culinary

- PWBAT Identify various cooking oils and which to use based on smoke point
- PWBAT practice cooking skills: sautéing, knife skills
- PWBAT make an avocado crema as a healthier substitution for aioli (garlic mayonnaise)
- PWBAT properly use a blender or food processor
- PWBAT identify common flavors in Latin cuisines

## 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)
- Measure out ingredients
- 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 - Latin*

- Burrito Bowl
- Pineapple Basil Cremolada

## BACKGROUND INFORMATION

- Foods containing fat can have a bad reputation because of fat's association with heart disease and weight gain (Remember all the low-fat food products of the 1990s?). But fat is an essential macronutrient for many body functions particularly growth and development. An adult brain contains nearly 60% of its mass as fat. That's why it's important to understand the sources of fat in food, the different types of fat and their role in heart disease risk, and the amounts of each fat type recommended per day.
- Saturated fat
  - o Found in animal foods (meat/dairy).
  - o Diets high in saturated fats can increase your plasma LDL cholesterol levels which can increase your risk of heart disease.
  - o The American Heart Association recommends limiting saturated fat to less than 5-6% of total calories per day. Depending on your calorie needs this would equate to 11-13 grams per day.
  - o Some food sources high in saturated fat include: beef, pork, lamb, butter, cheese, cream, shortening (a fat that is used in baking and contains no water).
- Unsaturated fat
  - o Found in plant-based foods as well as fish.

- o There are two types of unsaturated fats: monounsaturated fatty acids (MUFAs) and polyunsaturated fatty acids (PUFAs). A subset of PUFAs are the omega-3 and omega-6 fatty acids.
- o These types of fats are associated with reducing blood levels of LDL cholesterol and thus reduce the risk of heart disease. It is recommended to consume unsaturated fats in place of saturated fat to meet your daily fat intake requirements for optimal health.
- o Some foods high in unsaturated fatty acids include: olives and olive oil, avocado and avocado oil, nuts (e.g. walnuts, hazelnuts, almonds, cashews) and seeds (e.g. pumpkin, sesame, chia) and cold-water fish such as salmon, cod and sardines which are high in anti-inflammatory omega-3s.
- Trans fat
  - o Most trans fats in the food supply are produced when vegetable oils are chemically altered by hydrogenation leading to man-made trans fats that are harmful.
  - o However, there are small amounts of naturally occurring trans fats in some foods which are beneficial.
  - o The most common sources of trans fats are found in commercially prepared baked goods such as cakes and cookies and deep fried foods. However, since being banned in 2015 manufacturers phased out the use of these fats by 2020 and they are no longer prevalent in the food chain.
  - o Man-made trans fats should be avoided! Deep frying foods can produce man-made trans fats. Be sure to read the nutrition label. Note, a product may contain man-made trans fats of less than 0.5g per serving and still be considered trans fat free.<sup>1</sup>
- Traditionally, oils are extracted from fruits, nuts and seeds through mechanical crushing and pressing. If bottled immediately thereafter, you've got a first cold-pressed or "virgin" oil, which tends to retain its natural flavor, color and anti-oxidant/anti-inflammatory properties. The crushing and pressing produces an unrefined oil packed with minerals, enzymes, and other compounds that can be more fragile when heated and tend to be especially susceptible to rancidity; these are the oils best-suited to drizzling, dressings, and lower temperature cooking.
- Unrefined versus refined oil: Unrefined oils are minimally processed and typically made in small batches by mechanical crushing and pressing along with filtration leading to colorful and flavorful oils. Refined oils go through all the steps of unrefined oils, but in much larger batches plus are exposed to chemicals for extraction and clay for bleaching and deodorizing which makes them more shelf stable, but also less healthful, tasty and appealing to consume.
- Introduce vocabulary:
  - o **Smoke point:** a temperature at which oil starts burning, causing smoke to begin coming from the pot or pan.
    - Heated past its smoke point, oil starts to break down, releasing free radicals and a substance called acrolein, the chemical that gives burnt foods their acrid flavor and aroma.

<sup>1</sup> <https://www.eatthis.com/trans-fat-banned-artificial-natural/>

<https://www.hsph.harvard.edu/news/hsph-in-the-news/us-bans-artificial-trans-fats/#:~:text=It's%20official%3A%20Artificial%20trans%20fats,deadline%20of%20June%2018%2C%202018.>

<https://www.fda.gov/regulatory-information/search-fda-guidance-documents/small-entity-compliance-guide-trans-fatty-acids-nutrition-labeling-nutrient-content-claims-and#:~:text=Trans%20fatty%20acids%20should%20be,nearest%20gram%20above%205%20grams.>

- As an oil degrades, it's also getting closer to its flash point, producing ignitable gasses that you probably don't want hovering over an open flame. If your pan/pot starts to smoke, remove it from the heat, allow it to cool and then smell it. If you detect any off-putting aroma, then discard and begin again, if not you can re-heat the oil and proceed.
- Keep your oils tightly sealed in a cool, dark place and, if they come in a translucent bottle, consider wrapping them in aluminum foil to extend their shelf life.
- A few examples:
  - o Canola oil, 375-450F
  - o Vegetable oil, 400-450F
  - o EVOO, 375-410F (Maillard Reaction is at 285F)
  - o Butter, 350F
  - o Clarified butter (ghee), 485F
  - o Coconut Oil, 350F
  - o Sesame Oil, 410-450F

### *INTRODUCTION - 20 MINUTES*

#### Nutrition Presentation

1. Introduce participants to the class topics of fats & heart health.
2. Review the 2 types of fats and their subclasses (saturated, unsaturated: trans, MUFA, PUFA)
3. Introduce the culinary lesson today: Today's recipe features a vegetarian meal using plant-based oils high in unsaturated fats. By excluding meat (the primary source of saturated fat), the saturated fat content will be low. You don't have to follow a vegetarian diet to meet the recommendations for dietary fat intake. But it is important to choose leaner cuts of meat and focus on making at least half the meal vegetables and/or fruits (e.g. following USDA MyPlate recommendations).
4. Highlight nutrition profile of meal: NFP represents one serving of each recipe

## Nutrition Labels:

Burrito Bowl?	Pineapple Basil Cremolada
<p><b>Nutrition Facts</b></p> <p>Serving size</p> <hr/> <p>Amount Per Serving</p> <p><b>Calories</b> <b>570</b></p> <p style="text-align: right;">% Daily Value*</p> <p><b>Total Fat</b> 22g <b>28%</b></p> <p>Saturated Fat 3g <b>15%</b></p> <p>Trans Fat 0g</p> <p><b>Cholesterol</b> 0mg <b>0%</b></p> <p><b>Sodium</b> 590mg <b>26%</b></p> <p><b>Total Carbohydrate</b> 84g <b>31%</b></p> <p>Dietary Fiber 16g <b>57%</b></p> <p>Total Sugars 13g</p> <p>Includes 0g Added Sugars <b>0%</b></p> <p><b>Protein</b> 14g <b>28%</b></p> <p><small>Not a significant source of vitamin D, calcium, iron, and potassium</small></p> <p><small>*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.</small></p>	<p><b>Nutrition Facts</b></p> <p>5 servings per container</p> <p>Serving size <b>1/2 Cup (99g)</b></p> <hr/> <p>Amount per serving</p> <p><b>Calories</b> <b>60</b></p> <p style="text-align: right;">% Daily Value*</p> <p><b>Total Fat</b> 0g <b>0%</b></p> <p>Saturated Fat 0g <b>0%</b></p> <p>Trans Fat 0g</p> <p><b>Cholesterol</b> 0mg <b>0%</b></p> <p><b>Sodium</b> 0mg <b>0%</b></p> <p><b>Total Carbohydrate</b> 16g <b>6%</b></p> <p>Dietary Fiber 1g <b>4%</b></p> <p>Total Sugars 13g</p> <p>Includes 7g Added Sugars <b>14%</b></p> <p><b>Protein</b> 0g</p> <hr/> <p>Vitamin D 0mcg <b>0%</b></p> <p>Calcium 12mg <b>0%</b></p> <p>Iron 0mg <b>0%</b></p> <p>Potassium 79mg <b>2%</b></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>

This meal contains a total of 22 grams of fat. Of the 22 grams of fat, only 3 grams come from saturated fat. The remaining 19 grams of fat come from unsaturated fat (MUFA and PUFA), which are not listed on this label format.

<i>For one serving of the burrito bowl</i>	
<i>Calories</i>	<i>570</i>
<i>Total fat</i>	<i>22 g</i>
<i>Total Carbohydrate</i>	<i>84 g</i>
<i>Total Fiber</i>	<i>16 g</i>
<i>Sodium</i>	<i>590 mg</i>
<i>Protein</i>	<i>14 g</i>

- Nutritional Fact:** Did you know that black beans, or turtle beans as they are also known, are legumes and part of the Pea family of plants. They are primarily made of complex carbohydrates about 30% of which is fiber, an indigestible complex carbohydrate that is good for gut health. In one serving of black beans, ½ cup cooked, you receive 64% of your daily folate and 20% of your daily copper requirements plus many B vitamins. They also boast about 7.5 grams of protein per serving. One thing to note, legumes contain antinutrients in the form of phytates and lectins that can interfere with absorption of nutrients in the gut. When preparing legumes from scratch, soaking them overnight and cooking helps remove and deactivate the anti-nutrients.
- Avocados, a fruit, also known as alligator pears, are loaded with heart-healthy MUFAs along with some PUFAs and saturated fats. That creamy consistency has a lot to do with the fat content of an avocado. They also boast an array of B vitamins including thiamin, riboflavin,

niacin, pantothenic acid, pyridoxine and folate that are important in energy metabolism plus vitamins C, E and K. And let's not forget the 3g of fiber per 50g serving.

- **Cultural Fact:** A burrito bowl is a variation on the traditional Tex-Mex burrito featuring an assortment of savory ingredients that are served in a bowl rather than wrapped in a tortilla

#### *CLASSROOM COOKING + CLEANING - 75 MINUTES*

1. Have participants put on aprons, hats/hair nets, and wash hands.
2. Review recipes that will be used in this class and discuss that this menu was designed to be a heart healthy meal featuring Latin cuisine
3. Explain that today participants will be sautéing with oil and when it comes to cooking it is important to consider the "**smoke point**" of oils to avoid burning and introducing the carcinogens from burnt oil into our foods.
4. Review demo
  - Peeling and spiralizing sweet potatoes
  - De-pitting and scooping an avocado
  - Using the blender safely
  - Dicing tomatoes
  - Slicing celery
5. Discuss the tastes today's ingredients provide and point out that a balanced meal or dish has all five tastes.
6. Work in groups of 3-4, have each group prepare the following recipe. The recommended order is:
  - Combine all salsa ingredients from the whole class to blend at one time and then let sit to combine flavors. Divide just before serving
  - Sauté the taco ingredients
  - Combine the class's avocado crema ingredients and blend at one time

#### *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*

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

## RECIPES:

### Burrito Bowl

*Yields 6 servings*

#### Ingredients:

- 1 tsp taco seasoning
  - 1 tbsp chili powder
  - 1 tsp garlic powder
  - ½ tsp cumin
  - Salt to taste
- 2 C cooked chicken breast
- 2 C spinach or other leafy greens, roughly chopped
- 1/4 red onion, small dice
- 1 red bell pepper, small dice
- 1/4 jalapeño, minced
- 1 lime
- 2 garlic cloves, minced
- 1 14oz can black beans, low sodium
- 1 C uncooked brown rice
- 1 C water
- salt and pepper to taste
- 2 Tbsp olive oil
- 1/2 C salsa

#### Directions:

##### 1. Mise en Place

- Prepare Taco Seasoning per recipe directions.
- Prepare chicken per recipe directions
- Wash and dry the spinach, onion, bell pepper, jalapeno, and lime.
- Rock and chop spinach and small dice the bell pepper.
- Slice the onion and mince the jalapeño.
- Peel and mince garlic.
- Slice the lime in half and squeeze juice into a small bowl.
- Drain and rinse black beans.
- Measure out the ingredients.

##### 2. Prepare the Brown Rice

- Combine rice and water in a pot over medium heat.
- Bring to a boil and add salt.
- Reduce to a simmer, cover, and simmer for 35 minutes.
- Remove from heat, keep covered, and rest for 15 minutes.
- Fluff with a fork and set aside.

### 3. Prepare Onion and Pepper Mix

- Heat sauté pan over medium heat with 1/2 Tbsp olive oil.
- Add the onions, bell pepper and garlic.
- Cook until lightly caramelized.
- Lightly toss in the greens and allow to wilt.
- Remove from heat and set up aside

### 4. Prepare Burrito Mix

- Clean out the sauté pan and heat again over medium heat with 1/2 Tbsp olive oil.
- Add black beans, jalapeño, 1/4 C salsa, and chicken, if using.
- Cook until heated through, adding 1 Tbsp of water as needed to prevent sticking.
- Season with salt, pepper, and taco seasoning.
- Remove from heat and allow to cool.

### 5. Serve

- Portion rice, about 1/2 C cooked, into 4 serving bowls.
- Equally distribute pepper and onion mix on top of the 4 rice bowls.
- Layer on 1 C cooked of the bean and chicken mix.
- Top each bowl with remaining salsa and lime juice.
- Serve and enjoy!

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## Pineapple Basil Cremolada

*Yields 5 servings*

### Ingredients:

- 2 Tbsp basil
- 2 C pineapple, frozen (or other pulpy fruit)
- 2 Tbsp honey
- 1/2 C water, cold

### Directions:

#### 1. Mise en Place

- Wash, dry, and rough chop the basil.
- Measure out the ingredients.

#### 2. Prepare the Cremolada

- Add basil, pineapple, honey, and water into a blender.
- Blend until smooth, about the consistency of a frozen slush.
- Add more water as needed.

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