

# Cholesterol

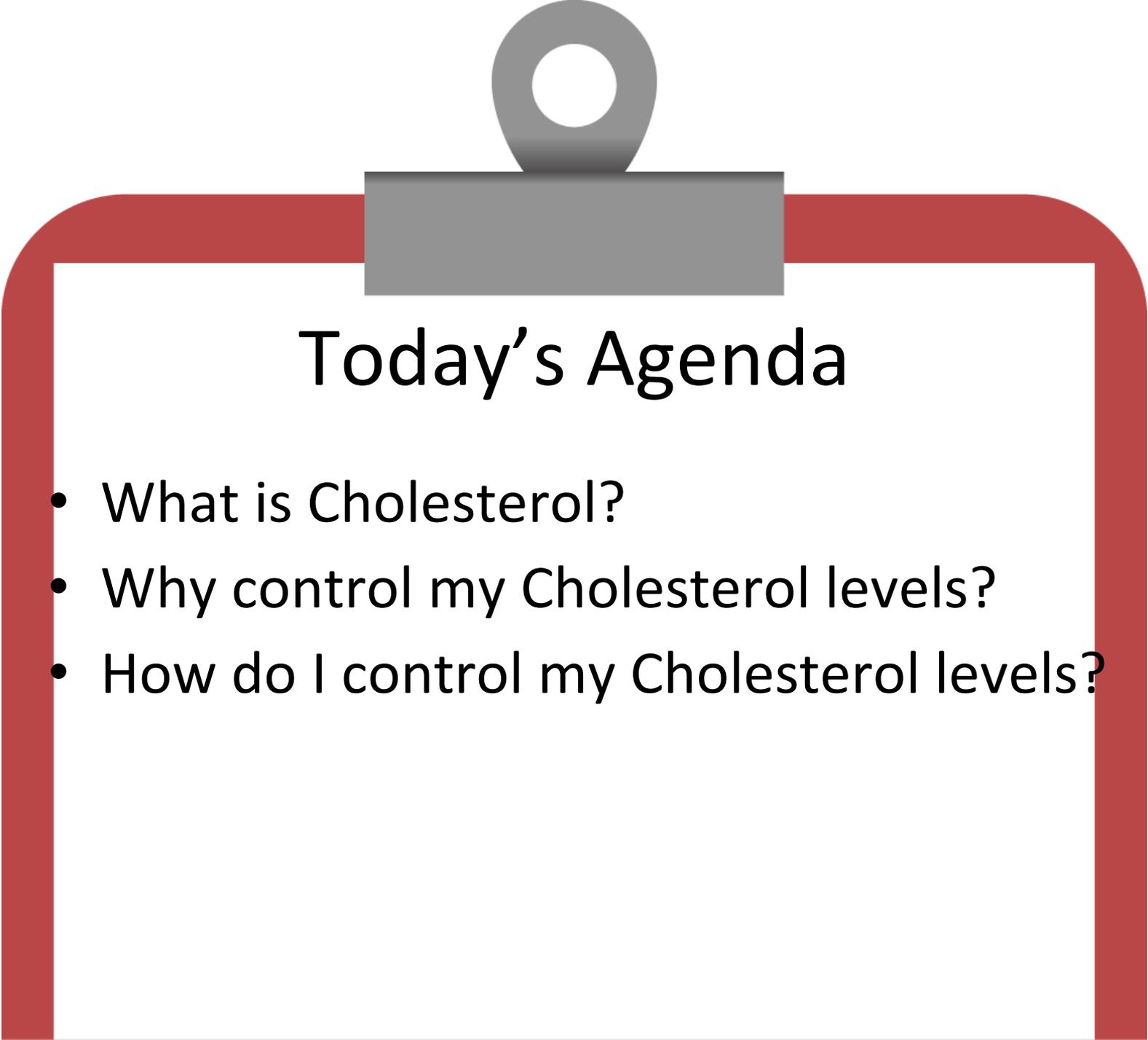
## Top Foods to Improve Your Numbers

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A graphic of a clipboard with a red border and a grey clip at the top. The text is centered on the white page.

# Today's Agenda

- What is Cholesterol?
- Why control my Cholesterol levels?
- How do I control my Cholesterol levels?

*Let's get started!*

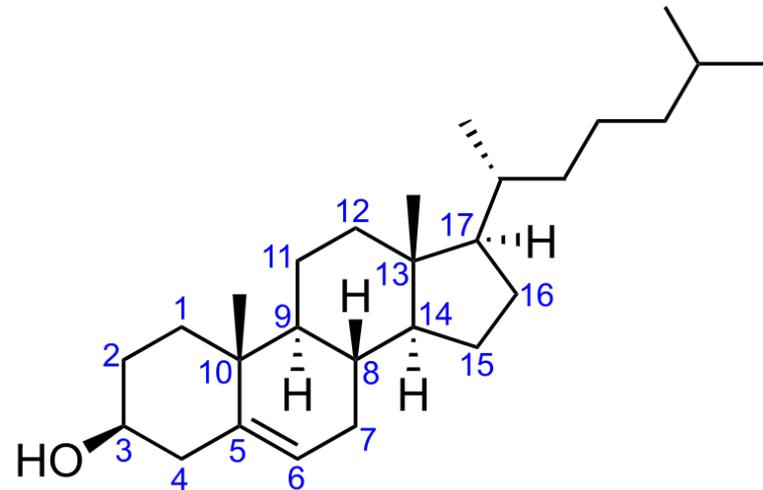
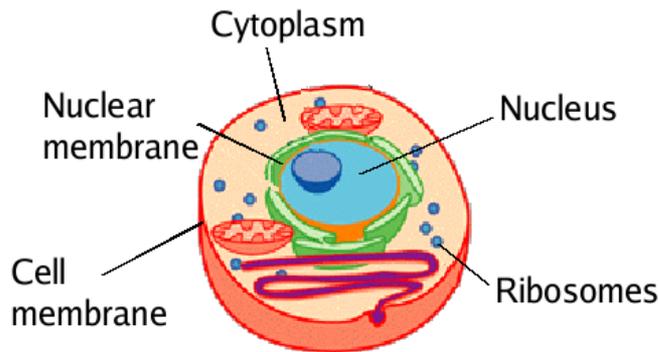
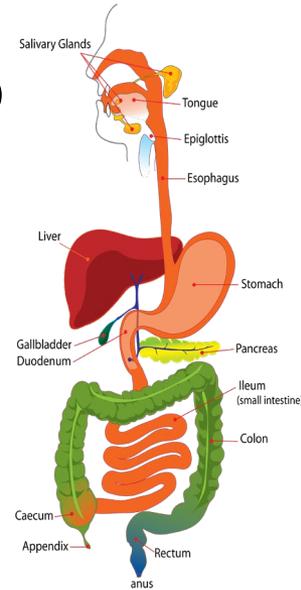
# What Is Cholesterol?

- Waxy, fat-like substance.
- It occurs naturally in all parts of the body.
- It is made by the liver.
- Cholesterol is also present in foods we eat.
- Cholesterol is needed to help the body function normally.



# What Does Cholesterol Do?

- Your body needs cholesterol to make hormones and aid digestion.
- It is part of cell walls and membranes.
- Your body makes all the cholesterol it needs.

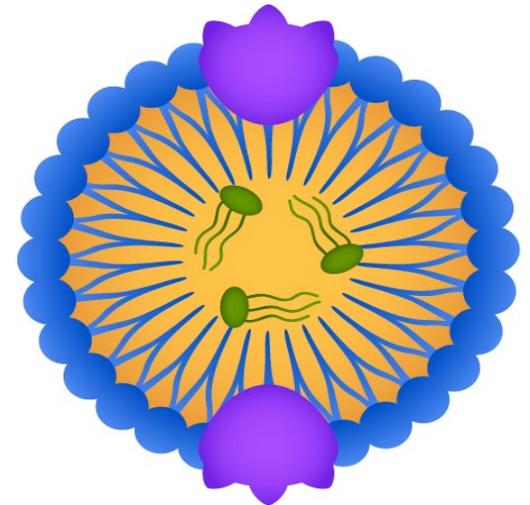


# Where Does Cholesterol Come From?

- Saturated fats make your body create cholesterol.
  - Saturated fats are solid at room temperature.
    - Animal fats; Beef, Pork, Poultry, Whole Milk, Cheese
    - Vegetable fats: Coconut Oil, Palm Kernel Oil
- You can also get cholesterol from foods you eat.
  - Only Animal foods contain Cholesterol
    - Meats, poultry, and fish.
    - Eggs.
    - Dairy foods made from whole or reduced fat milk.
    - Lard and butter.

# Lipoproteins!

- Cholesterol travels through your blood in packets of protein and fat.
- These packets are called lipoproteins.
- There are two types of lipoprotein.



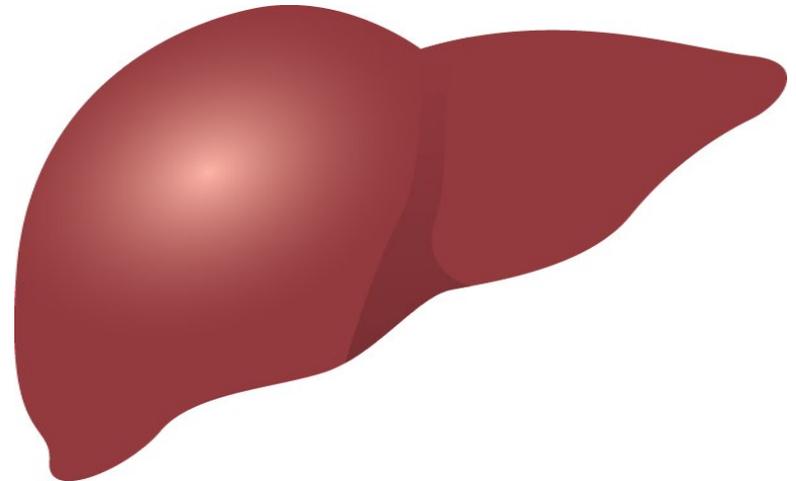
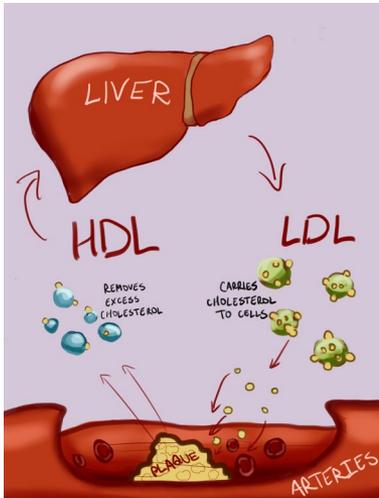
# Low-Density Lipoproteins

- LDL cholesterol is called “bad” cholesterol.
- It **sticks** to artery walls.



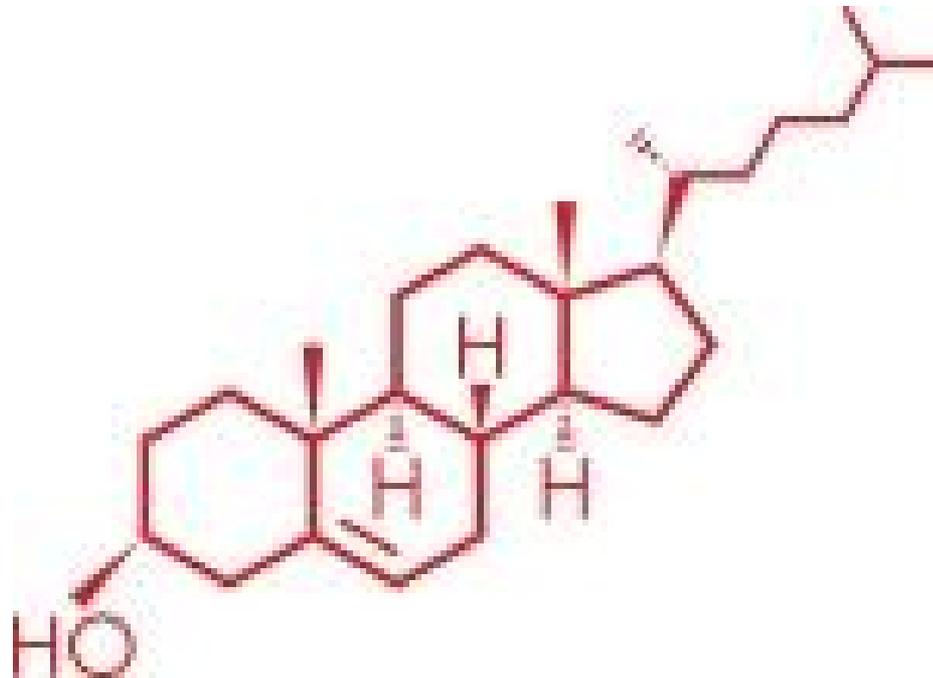
# High-Density Lipoproteins

- HDL cholesterol is called “good” cholesterol.
- It moves cholesterol to the liver and out of your body.



# High Cholesterol

- When you have too much cholesterol in your blood, then you have “high cholesterol.”



# Risk Factors for High Cholesterol

- Diet
- Sedentary lifestyle
- Age
- Weight
- Genetics
- Gender

# Risk Factors that Increase Risk of Heart Attack or Stroke

- If you have High Cholesterol these factors increase your risk for Heart Attack / Stroke.
  - Smoking
  - Family History
  - High Blood Pressure
  - Diabetes

# What should my number be?

- Starting at age 20, total Cholesterol should be checked at least every 5 years.
- Cholesterol is measured as mg/dl.
  - mg of cholesterol in every deciliter of blood.
- Total Cholesterol should be less than 200 mg/dl.
- HDL levels of 60 mg/dl or more help lower risk of heart disease.
- LDL levels of 100 mg/dl or less is best.

*Why control cholesterol?*

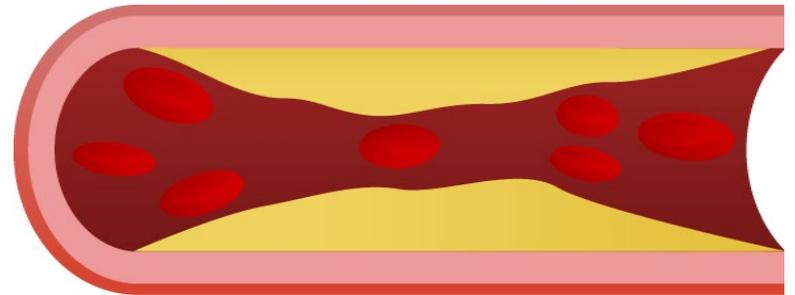
# Health Impact

- Too much cholesterol is bad for your health.
- It increases your risk of heart disease, especially when LDL cholesterol is involved.



# Cholesterol and Your Heart

- Cholesterol helps plaque build up in your arteries.
- This hardens the walls and clogs blood flow.
- Plaque can also tear off and send clots into your bloodstream.
- Clots can cause heart attack or stroke.



# The Good News

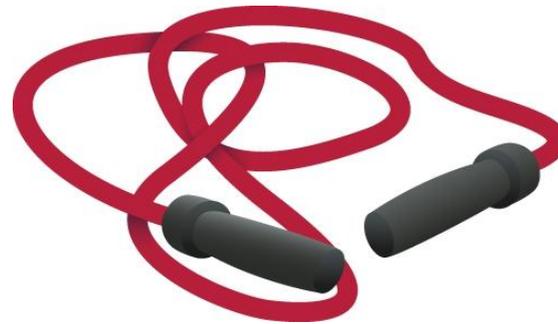
- Reducing your cholesterol can reduce plaque buildup and the risk of plaque rupture and there by reduce your risk for heart attack and stroke.



*How is it possible to  
control cholesterol levels?*

# Diet and Exercise

- “You can lower your cholesterol by exercising more and eating more fruits and vegetables.”  
– National Institutes of Health



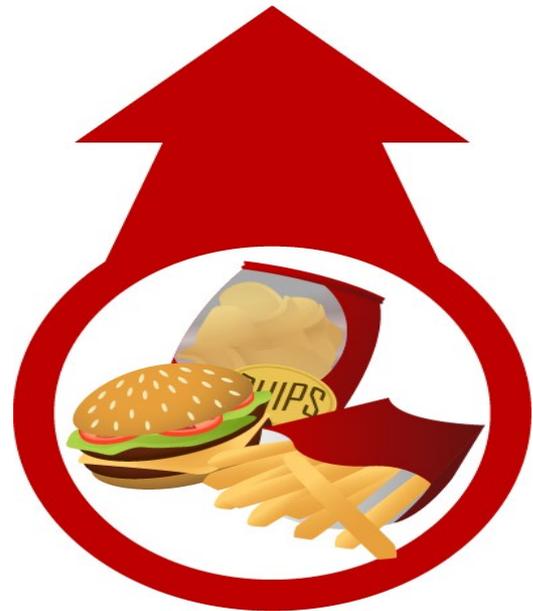
# Diet

- What you eat affects how much cholesterol your body makes.



# Saturated Fat

- Saturated fat raises your LDL cholesterol levels.
  - Remember LDL is the bad cholesterol.
- Trans fat does the same thing.
  - Found in fried food, crackers, cookies, chips.



# Reduce!

- Eat less...
  - Saturated Fat
  - Trans Fat
  - Dietary Cholesterol



# Increase

- Eat more:
  - Fruits
  - Vegetables
  - Whole Grains
  - Heart Healthy Fats

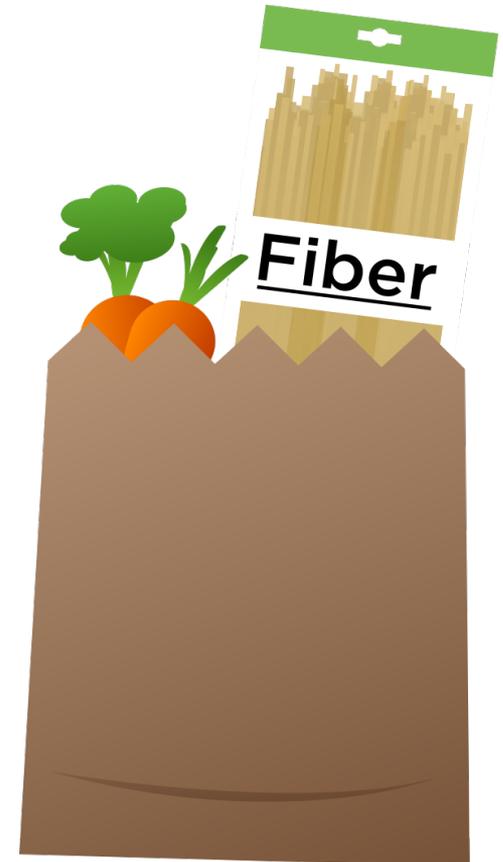
# Unsaturated Fats are Heart Healthy

- Avocado
- Canola Oil
- Fatty Fish
- Nuts
- Olive Oil
- Seeds



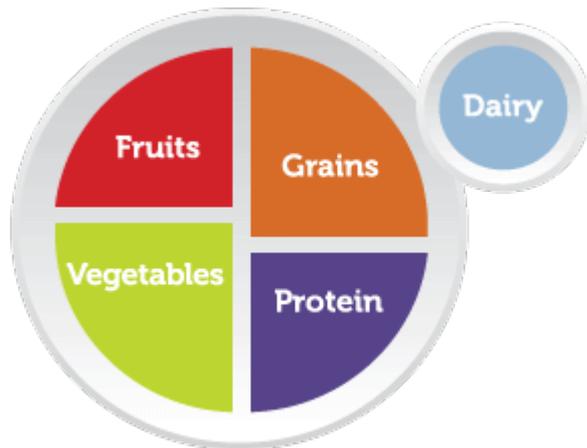
# Eat More Fiber

- There's a link between fiber and heart health.
- Fiber may help lower LDL levels.



# Fruit, Vegetables, & Whole Grains Are High Fiber Foods

- Besides being high in Fiber, these foods have;
  - Phytochemicals that may reduce the risk of disease.
  - Vitamins & Minerals.
  - Plan your meals around them.
  - Think MyPlate! And, eat the rainbow.



# Exercise

- Regular physical activity can reduce cholesterol levels.
  - Check with your Doctor before starting any exercise program.
  - Remember to start slowly and stay steady.

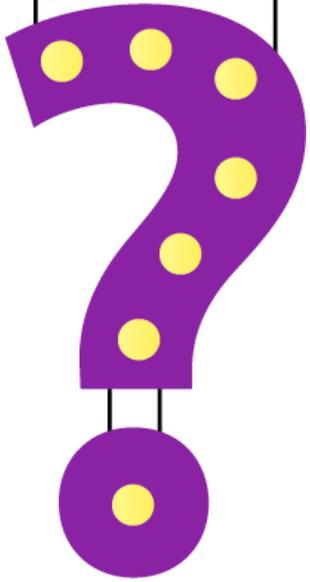


# Let's Check the Research!

- “Exercise, a low fat diet, or a diet low in saturated fat content can each lower plasma total cholesterol and low-density lipoprotein (LDL) cholesterol.”
  - From the study *Effects of Exercise, Dietary Cholesterol, and Dietary Fat on Blood Lipids*

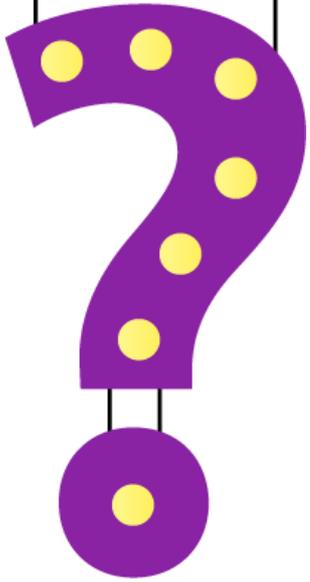
# Additional Tips

- Eat foods with less fat.
- Remove the skin from chicken, turkey, & fish.
- Broil, bake, roast, or poach instead for frying.
- If you smoke, STOP!
- If you are overweight, losing weight will help lower your cholesterol.
- If your Dr. prescribes medication, take it!



*Now it's time for a quiz!*

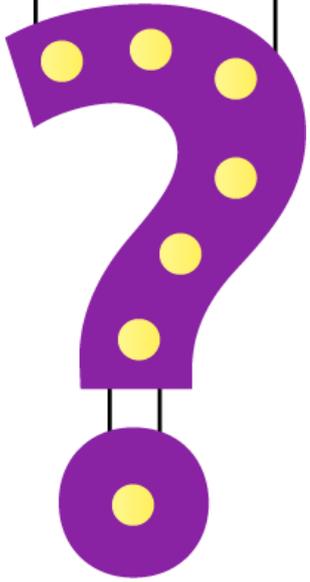




# What Is Cholesterol?

- True or False? Cholesterol is a waxy substance that your body uses to make hormones and aid digestion.





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# LDL Cholesterol

- What are the health dangers associated with high LDL cholesterol levels?

- A) Increased risk of stroke
  - B) Increased risk of coronary artery disease
  - C) Increased risk of heart attack
  - D) All of the above
- 

# LDL Cholesterol

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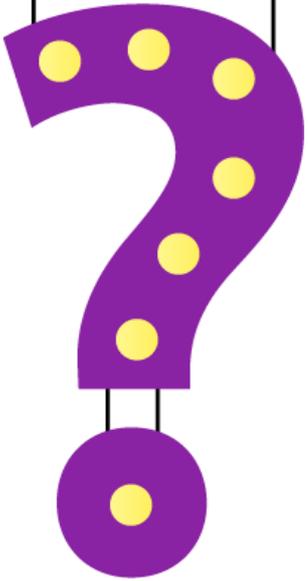
# Fat and You

- What type of fat prompts your body to make way more cholesterol than it needs?

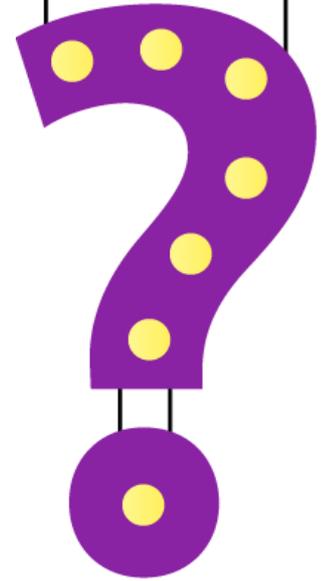
- A) Polyunsaturated fat
- B) Saturated fat
- C) Monounsaturated fat
- D) All fats



# Fat and You



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A) Polyunsaturated fat

**B) Saturated fat**

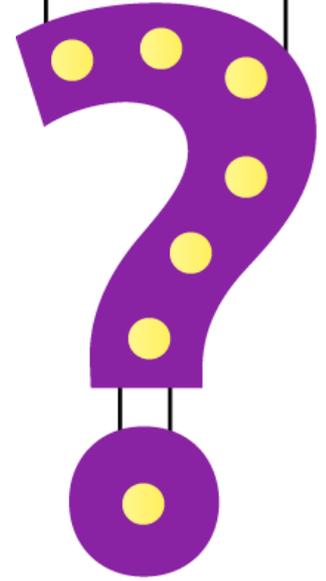
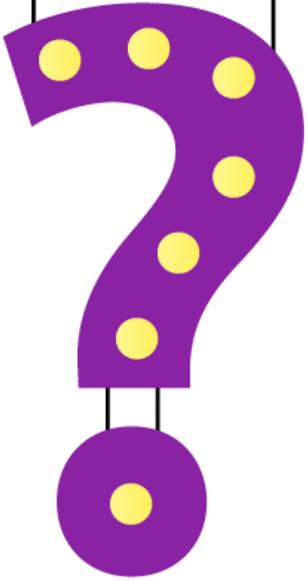
C) Monounsaturated fat

D) All fats

# Take Control

- How can you take control of your cholesterol levels?

- A) With intermittent yoga and no desserts
- B) With a paleo diet and sprints
- C) With a healthful diet and regular exercise
- D) With mind control



# Take Control

- How can you take control of your cholesterol levels?

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**C) With a healthful diet and regular exercise**

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*Let's review!*



# What We Discussed

- What is Cholesterol?
- Why Should I Control My Cholesterol Levels?
- How Can I Control My Cholesterol Levels?

*The End*

# CHOLESTEROL



It's time to take control

## Why Care About Cholesterol?

Too much cholesterol in your body can lead to all kinds of health issues.

According to the National Heart, Lung, and Blood Institute, "People who have high blood cholesterol have a greater chance of getting coronary heart disease [...] The higher the level of LDL cholesterol in your blood, the **GREATER** your chance is of getting heart disease."

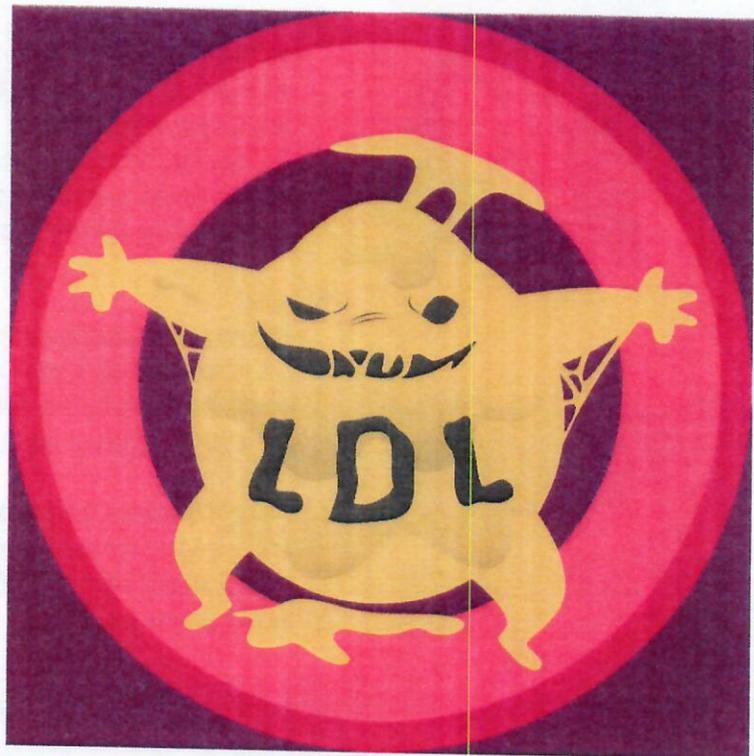
## How Can You Take Control of Your Cholesterol Levels?

The National Institute of Health has revealed that "You can lower your cholesterol by exercising more and eating more fruits and vegetables."

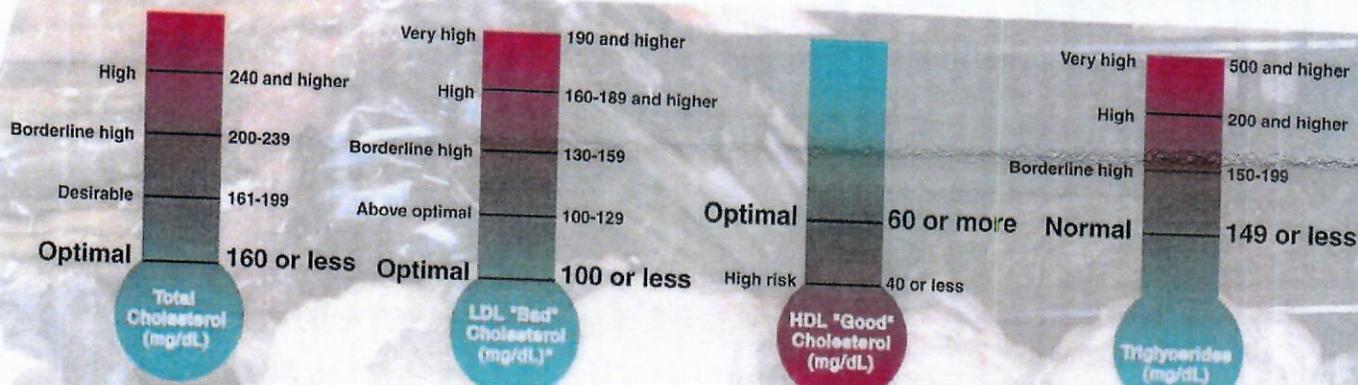
Increase the amount of fiber you eat each day, and reduce foods that are high in saturated fat.

## What Is Cholesterol?

Cholesterol is a waxy substance that is similar to fat. Some foods, like saturated fats, prompt your body to make **more cholesterol than it needs**. Cholesterol travels through your blood in packets of protein and fat. These packets are called lipoproteins. **Low-density lipoproteins are also called LDL or "bad" cholesterol**. These stick to your artery walls, which makes it harder for your circulatory system to work. **High-density lipoproteins are also called HDL or "good" cholesterol**. These move cholesterol from your bloodstream to your liver, where it can be processed out of your body.



# Cholesterol: Control Your Numbers



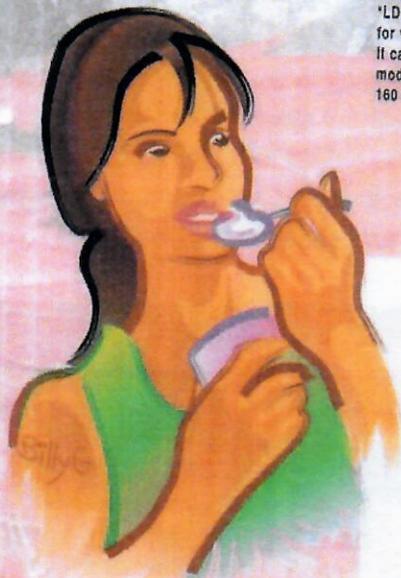
Too much *cholesterol* in your blood can build up in the walls of your arteries and increases your risk for heart disease.

*LDL* is the main source of cholesterol buildup and blockage in the arteries. Think "L" for lousy.

\*LDL should be 70 or less for very high risk patients. It can go as high as 130 for moderate risk patients or 160 for patients with little risk.

*HDL* is the good cholesterol that helps keep cholesterol from building up in arteries. Think "H" for helpful.

*Triglycerides* are another form of fat in your blood. High levels are associated with a higher risk for heart disease and stroke. They are often high when obesity and diabetes are present.



## - Eat healthy for your heart:

- Eat **more** foods rich in soluble fiber. Sources include: plant foods like fruits, vegetables, whole grains, beans/legumes and seeds.
- Eat **less** trans-fat, saturated fat and cholesterol. Sources include: processed foods, animal products (meat and dairy) and tropical oils.

## - Exercise:

- Regular physical activity can help lower LDL and raise HDL levels. It also helps you lose weight. You should try to be physically active for 30 minutes on most days.

## - Lose weight if you are overweight:

- Losing weight can help lower your LDL, total cholesterol and triglyceride levels, as well as raise your HDL.



# Increase Your HDL

HDL stands for high density lipoprotein. It is also called 'good' cholesterol. Higher levels of HDL seem to protect against coronary artery disease.

Here are some tips on how to increase your HDL level.

## Adjust Your Diet

### Increase your consumption of fiber...

- Beans
- Whole Grains
- Fruits
- Vegetables

### Decrease your consumption of...

- Organ Meats
- Lard
- Palm or Coconut Oil
- Fatty and/or Processed Meat
- Stick Margarine
- Egg Yolks
- Butter, Whole Dairy
- Sugar and Other Refined Carbohydrates



### Consume fatty fish that are high in omega-3 fatty acids...

- salmon
- herring
- sardines
- mackerel
- trout

### Stay away from foods that contain trans or saturated fats.

### Eat smaller, more frequent meals.

## Get Some Exercise



Thirty minutes of moderate daily exercise can help reduce LDL cholesterol while increasing HDL cholesterol.

Start small and work your way up to more ambitious exercise goals.

## Lose Weight

Reducing your size will help balance your cholesterol levels and decrease your health risks.

Exercise and changing your diet helps you keep your cholesterol level in check AND helps you lose weight! Talk about a win-win!



# Fabulous Fiber

We know that we need to eat more fiber. But why? Fiber-rich foods like the skins of fruits and vegetables, the pectin in the flesh of apples, pears and bananas, and the gritty outer layers of whole grains provide our intestines with a workout. Research reveals that fiber helps our bodies control blood sugar, blood pressure, and cholesterol levels, as well as stave off certain cancers (like colorectal cancer). It can also help fend off excess weight gain by helping you feel full with fewer calories. This is precisely why fiber is on the public health radar screen.

Aim to get about 14 grams of fiber per 1,000 calories you eat (for a 2,000 calorie diet, that's 28 grams a day). Fibrous foods like whole grains, beans, legumes, nuts, fruits, and vegetables contain more than just fiber -- they also have plant-based chemicals called phytonutrients, as well as vitamins and minerals like vitamin E, vitamin B6, magnesium, zinc, iron, copper, manganese, and potassium, as well as plant protein. These are all great for your health!

Try upping the fiber in your favorite recipes, side dishes, and desserts. Next time you go grocery shopping, plan to fill your cart with a variety of fiber-rich foods.

*By Victoria Shanta Retelny, RD, LDN, author of The Essential Guide to Healthy Healing Foods.*



## FIBER

### Fiber-friendly shopping list:

*The next time you go to the grocery store, stock up on these fiber-rich favorites!*

#### Grains

- Rolled oats
- Whole grain cereals
- Whole wheat flour
- Brown rice
- Long grain wild rice
- Whole wheat pasta
- Whole grain crackers
- Whole grain bread
- Tabbouleh salad (made with bulgur wheat)

#### Fruits and Vegetables

- Canned beans (be sure to rinse and drain before use)
- Fresh fruit
- Fresh vegetables
- Frozen fruit (skip options that add sugar)
- Frozen vegetables (avoid versions with lots of added salt)

#### Protein

- Raw nuts and seeds

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# Handout: Fiber is Your Friend

## What is Fiber?

Fiber is the part of plant foods that is not digested by the human body. It lends structure, texture, and support to plants, yet it does not have any caloric value. It is, however, considered to be a complex carbohydrate.

Notice that fiber is part of PLANT foods. It is not generally associated with animal products. For example, you certainly won't find it in meat or dairy products.

## Where can I find fiber?

Fiber is in whole plant foods, like:

- Fruits
- Vegetables
- Whole-grains
- Beans, peas, and lentils
- Nuts and seeds

## Make A Healthy Plate!

That's one of the reasons that MyPlate recommends that people fill half their plates with fruits and veggies at each meal plus an additional one quarter of the plate is whole grains. There's tons of fiber in those foods!

## Are there different types of fiber?

Yes. While the total amount of dietary fiber in your diet is what's important, we typically classify fiber as either soluble or insoluble.

## Soluble fiber:

- Lowers blood cholesterol
- Helps to control blood sugar
- Makes you feel full after a meal

Sources of soluble fiber include oat bran, oatmeal, barley, rye, peas, beans, carrots, apples, and oranges.

## Insoluble fiber:

- Gets credit for promoting GI health.
- Prompts normal laxation.
- Absorbs water, which makes things easier on your digestive tract.

Sources of insoluble fiber include fruits, vegetables, beans, wheat bran, brown rice and other whole grains.

In real life, the distinction between fibers is not so simple. Fiber-rich foods usually have both types of fiber, and a high-fiber diet should provide enough of each. It is your total fiber intake that counts.

## How much fiber do I need?

It's estimated that prehistoric man ate 77-120 grams of fiber a day! That's much more than today's experts recommend for adults (25-38 grams/day). This can be achieved by eating a plant-based diet that's rich in fruits, vegetables, beans, and whole grains.

## A high-fiber diet has many health benefits, including...

Decreased risk of...

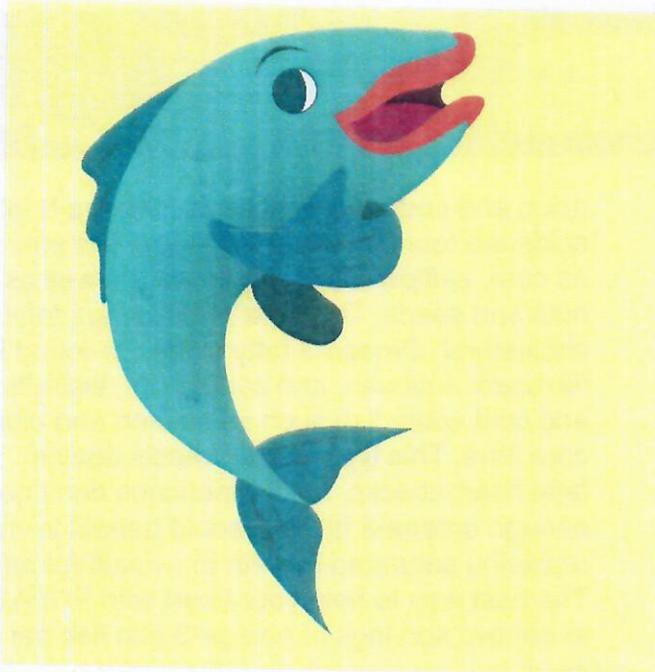
- Heart disease
- Diabetes
- Cancer

Positive impact on...

- Weight control
- Weight loss
- Gastrointestinal health



# Omega-3s for You and Me



We know that eating seafood high in omega-3 fatty acids is good for our health. Omega-3s can reduce the risk of heart disease by decreasing the risk of abnormal heart beats, decreasing triglyceride levels, slowing down the accumulation of plaque inside blood vessels, and slightly lowering blood pressure (1).

There are three main omega-3 fatty acids: alpha-linolenic (ALA), eicosapentaenoic (EPA), and docosahexaenoic (DHA).

- EPA and DHA are found in **fish** and **seafood** and provide the most health benefits.
- Some **plants** contain ALA, which our body partially converts into EPA.
- DHA is also added to some common foods such as **milk**, **orange juice** and **eggs** (2).

Use these quick, simple and delicious tips to meet the American Heart Association's recommendation to consume 3.4 ounces of fish high in omega-3s two times per week (1).

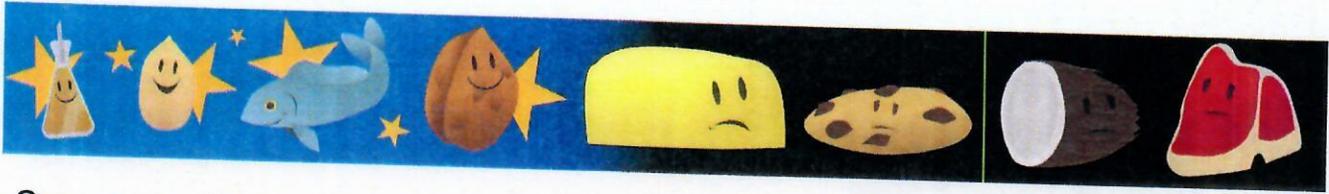
1. **Keep it simple.** Squeeze fresh lemon juice on a fish fillet and sprinkle it with a dash of salt and pepper. Then grill, bake, or sauté it!
  - **On the grill:** Wrap seasoned fish in a foil packet and grill it using indirect heat for about 10 minutes.
  - **In the oven:** Place seasoned fish on a greased baking pan and bake in a 425-degree oven for about 15 minutes.
  - **Quick sauté:** Heat 1-2 teaspoons of olive oil, canola oil, or butter in a non-stick skillet. Add the seasoned fish and cook for 1-4 minutes per side, until each side is golden and the fish flakes easily.
2. **Spice it up.** Use your favorite seasoning mix (like lemon pepper, Cajun spices, or a seafood seasoning blend) to give fish a flavorful kick.
3. **Make friends with your freezer.** Purchase plain frozen fish fillets instead of fresh ones, and stock your freezer with healthful protein that's ready in minutes. Avoid breaded or fried versions — plain is best. You can dress it up at home with herbs and spices.
4. **Cook carefully.** Fish is cooked through and ready to eat when it flakes easily with a fork and the flesh is opaque.

By Lynn Grieger RDN, CDE, CPT, CWC

See a list of references at <http://www.communicatingfoodforhealth.com/omega3s/>.

BROUGHT TO YOU BY:

# The Big Fat Question



Once upon a time, the big fat question was “butter or margarine?” If you were confused back then, you’re probably throwing up your hands these days. Now it’s butter vs. stick margarine vs. tub margarine vs. olive oil vs. coconut oil vs. fish oil vs. lard... you get the idea. What’s a person to do? To understand all the questions about fat, you need to look at the different types of fat.

## **Saturated Fat:**

Most health experts agree that a diet high in saturated fat increases your risk of heart disease by raising total cholesterol and LDL (bad) cholesterol levels. According to the 2010 Dietary Guidelines for Americans, average daily intake of saturated fats should be no more than 10% of calories. Cutting down to 7% of calories will help your heart even more. For a 2,000 calorie diet, this translates to 22 grams and 16 grams per day, respectively. Saturated fat is found mainly in animal foods, such as butter, milk and milk products, beef and pork, chicken skin, and lard. Coconut, palm, and palm kernel oils are also high in saturated fats.

## **Unsaturated Fat:**

There are two types of unsaturated fats: polyunsaturated fat (PUFA) and monounsaturated fat (MUFA).

### *Polyunsaturated Fat -- PUFA:*

While saturated fat is usually referred to as “bad” fat, PUFA is known as a “good” fat. The two main types of PUFA are omega-6 fatty

acids and omega-3 fatty acids. Omega-6 fatty acids are found in liquid vegetable oils such as corn, safflower and sunflower, as well as nuts and seeds. This type of fat lowers total cholesterol. Omega-3 fatty acids are found in flaxseed, soybean, and canola oils, walnuts, and cold-water fish such as salmon and albacore tuna. This type of fat protects against fatal heart attacks. Most Americans don’t get enough omega-3 fat and would benefit from replacing saturated fat with this healthful fat. The best way to help your heart with PUFA is to eat two servings of omega-3 rich fish per week.

### *Monounsaturated Fat -- MUFA:*

This other “good” fat is found mainly in vegetable oils (canola and olive), nuts, seeds and avocados. MUFA appears to have a neutral effect on cholesterol and heart disease. Small amounts can be included in your diet.

## **What About Trans Fat?**

Small amounts of trans fats are found naturally in meat and milk. Synthetic trans fat is made when vegetable oil is partially hydrogenated for use in processed foods such as donuts, cookies, pastries, peanut butter, crackers, French fries, chips, and cake. Trans fat is not good for your heart. It raises total cholesterol and lowers HDL (good) cholesterol. It also causes inflammation and damages blood vessels.

*By Hollis Bass, MEd, RD, LD*

BROUGHT TO YOU BY:

# Top 10 Ways to Lower Triglycerides

Triglycerides are used daily by our bodies and are normally found circulating in the bloodstream with other fatty molecules, such as cholesterol. However, when levels of triglycerides in the blood become too high, this can put you at risk for heart disease. If you are overweight, you probably have elevated triglycerides.

Here are 10 easy ways to lower them and help you with your weight, too.



**1. Restrict total fat to less than 30% and saturated fat in your diet to less than 10% - here is a general guide:**

Calories	Total Fat	Saturated Fat
1200	<33g	< 9g
1400	<38g	<11g
1600	<44g	<12g
1800	<50g	<14g
2000	<55g	<15g

- **Avoid hidden trans fats in foods**, which are often found in fried foods, margarine, vegetable shortening, and high fat processed foods (ex: crackers).

- **Use only trans-free margarine** (Promise, Fleischmann's Light or Olive, etc.).

**2. Restrict alcohol intake.**

- Men should drink less than two 1oz servings per day.
- Women should drink less than three 1oz servings per week, with no more than one serving per day.
- Note: If you drink less than the restriction above, yet have high triglycerides, it would be beneficial for you to restrict your alcohol intake even more.

**3. Restrict refined carbohydrates in your diet.**

- Examples of refined carbohydrates include: white bread, pasta and rice, pretzels, cereals not considered high fiber or whole grain, baked goods (cookies, cakes, etc.) and other sugar-containing foods not providing significant nutrition (ex: pudding).

- Refined carbohydrates should be restricted to 2 servings per week (one serving = 100 calories).

**4. Avoid foods high in sugar.**

- Eliminate regular sodas, concentrated fruit juices and other sweets.

**5. Lose weight and inches.**

- A 10% weight loss will not only improve your triglycerides, but also your cholesterol, blood pressure and glucose levels.

**6. Exercise regularly.**

- Moderate intensity exercise for 30 – 60 minutes on most days of the week is strongly encouraged.

**7. Add more fish to your diet.**

- The omega-3 fatty acids, EPA & DHA, are among the most potent things you can increase in the diet to lower triglyceride levels.
- Replace meat and cheese in the diet with seafoods rich in omega-3s.

**8. Consume foods high in fiber.**

- Look for whole grain breads with 3g fiber per slice on the food label.
- Choose foods with “whole grain” as the first ingredient.
- Other foods high in fiber include beans, ground flaxseed, oat bran, fruits and vegetables.
- Be sure to drink more water when you begin to increase your fiber intake.

**9. Consume 2 servings of fish per week.**

- Especially fish high in omega-3 fatty acids (salmon, mackerel, sardines, tuna and trout).

**10. Manage daily stress, comply with your medications, and quit smoking.**

- If you have questions or concerns with your medications, please contact your doctor's office.
- Smoking cessation classes are offered at minimal cost (or free) throughout the community. Contact the American Lung Association for classes near you.

*By Sarah Mohrman, RD, MA.*

Client Name \_\_\_\_\_ Date \_\_\_\_\_  
 RD/DTR \_\_\_\_\_  
 Email \_\_\_\_\_ Phone \_\_\_\_\_

## List of Foods High in Fiber

### How Much Do You Need?

The daily recommendations for most healthy adults:

- Men ages 50 years and younger: 38 grams fiber per day
- Men ages 51 years and older: 30 grams fiber per day
- Women ages 50 years and younger: 25 grams fiber per day
- Women ages 51 years and older: 21 grams fiber per day

Food	Amount	Total Fiber (grams)
Bran cereal	1/3 cup	8.6
Cooked kidney beans	1/2 cup	7.9
Cooked lentils	1/2 cup	7.8
Cooked black beans	1/2 cup	7.6
Canned chickpeas	1/2 cup	5.3
Baked beans	1/2 cup	5.2
Pear	1	5.1
Soybeans	1/2 cup	5.1
Quinoa	1/2 cup	5
Baked sweet potato, with skin	1 medium	4.8
Baked potato, with skin	1 medium	4.4
Cooked frozen green peas	1/2 cup	4.4
Bulgur	1/2 cup	4.1
Cooked frozen mixed vegetables	1/2 cup	4
Raspberries	1/2 cup	4
Blackberries	1/2 cup	3.8
Almonds	1 ounce	3.5
Cooked frozen spinach	1/2 cup	3.5
Vegetable or soy patty	1 each	3.4
Apple	1 medium	3.3
Dried dates	5 pieces	3.3