

Sinclair Community College, Division of Allied Health Technologies

Health Promotion for Community Health Workers – Cardiovascular disease, stroke, and cancer

Class #5 High Blood Cholesterol

(date)

Course Objectives:

Know risk factors and causes of heart disease, stroke, and cancer
Know the most common treatments for diseases of the heart and blood vessels, heart attack and stroke, and contributing conditions like high blood pressure, high blood cholesterol, and diabetes.

Class/Learning Objectives: By the end of this session, students will be able to:

1. Describe the different types of cholesterol
2. Describe the risk factors for high blood cholesterol
3. Discuss at least two types of medicine for lowering cholesterol
4. Explain life style changes that can affect cholesterol levels

Participants:

Instructor(s)

Students

Materials/Resources Needed:

Flipchart, markers, tape, blackboard, chalk and eraser

Handouts:

- 5-1 What are High Blood Cholesterol and Tryglycerides
- 5-2 What do Cholesterol Numbers Mean?
- 5-3 Medicine for High Blood Cholesterol
- 5-4 What is Cholesterol-Lowering Medicine?
- 5-5 How Can I Lower My Cholesterol?
- 5-6 Tips for Lowering Cholesterol
- 5-7 What can CHWs Do To Help People Control High Blood Cholesterol Levels?

Class Outline

I. Quiz – classes 1, 2, 3,

II. Overview

II. Lesson

- A. What is High Blood Cholesterol?
- B. What Causes High Blood Cholesterol?
- C. How is High Blood Cholesterol Diagnosed?
- D. How is High Blood Cholesterol Treated?

E. What Changes Should You Make in Your Diet and Lifestyle?
III. Summary

Plan for the Class:

I. Quiz – Classes 1, 2, 3

II. Overview

A high level of cholesterol in the blood is one of the leading risk factors for heart disease and stroke. About 65 million people in the United States have cholesterol levels high enough to be a serious risk to their health.

More than half of Mexican American men, age 20 and older have high cholesterol levels and close to half of Mexican American women's cholesterol levels are too high.

Over a third of American Indians, men and women ages 45-74, have high blood cholesterol levels.

Over a third of blacks, age 20 and older, have high blood cholesterol levels.

III. Lesson

A. What is High Blood Cholesterol?

Cholesterol is a fatty substance found in the bloodstream and in all your body's cells. It is produced by the liver and is necessary for the body to function normally. The body is generally able to make all the cholesterol it needs to keep healthy.

Cholesterol is often used as a general term for cholesterol and other types of fat and proteins in the bloodstream. These fats and proteins work together to make hormones, vitamin D and substances that help digest foods.

One type of cholesterol is good for you, but the others are not. A high level of bad cholesterol in the blood contributes to plaques forming along the walls of the blood vessels. This narrows the blood vessels and causes atherosclerosis of "hardening of the arteries."

The good cholesterol is known as **HDL or high density lipoprotein**, but it's not necessary to remember that name. Almost everyone, including doctors, call good cholesterol HDL. It might help you to remember that HDL is the good protein by thinking of the "H" in HDL meaning "healthy." HDL is considered good because it removes cholesterol from the arteries and prevents plaque from building up along the blood vessels.

LDL or low density lipoprotein is the “bad” cholesterol. Thinking of the “L” in LDL as meaning “lousy” might help you remember that LDL is the bad cholesterol. If the LDL level is high and HDL is low, cholesterol and fat can begin to build up into plaque, a thick, hard deposit that can clog arteries.

As arteries become more clogged less blood flows to the heart and brain. When one or more arteries that supply blood to the brain and heart become severely blocked and a blood clot forms it can cause a heart attack or stroke.

Triglycerides, another type of fat in the blood, also contribute to overall cholesterol levels. The liver produces triglycerides and changes some into cholesterol. But just as with LDL cholesterol, too much triglycerides in the blood is not a good thing.

People with high triglycerides often have low HDL. People with diabetes often have high triglycerides and low HDL cholesterol.

Handout 5-1: What are High Blood Cholesterol and Triglycerides? Ask CHWs to take a look at this handout. It is something that they can share with others in the community. All the information in the handout has not yet been covered, so discuss later.

B. What Causes High Blood Cholesterol?

High LDL cholesterol can be caused by factors that can't be controlled by the individual, such as heredity and age, but certain behaviors or conditions can contribute to high levels of cholesterol also. The risk factors include:

- **Inactivity.** Regular physical activity can help lower LDL (bad) cholesterol and raise HDL (good) cholesterol levels. It also helps with losing weight. People should try to be physically active for 30 minutes or more on most, if not all, days.
- **Obesity.** Being overweight is a risk factor for heart disease. It also tends to increase cholesterol. Losing weight can help lower LDL and total cholesterol levels, as well as raise HDL and lower triglyceride levels.
- **Diet.** Saturated fat and cholesterol in the food you eat make your blood cholesterol level go up. Saturated fat is the main problem, but cholesterol in foods also matters. Reducing the amount of saturated fat and cholesterol in the diet helps lower blood cholesterol levels. We'll talk more about fats and cholesterol in foods in the Nutrition chapter of this course.
- **Age.** As you get older, cholesterol levels rise.
- **Heredity.** High blood cholesterol can run in families.

If a person has a high blood cholesterol level, smoking and high blood pressure add to the risk of developing heart disease or having a stroke. Cigarette smoke and high blood pressure damages blood vessel walls, making it more likely that cholesterol will collect along the walls causing them to harden and narrow.

Type 2 diabetes (the type that usually develops in adulthood) can also cause blood vessels to narrow, making high levels of cholesterol in the blood even more dangerous to your health.

C. How is High Blood Cholesterol Diagnosed?

High blood cholesterol itself causes no symptoms and many people have it without knowing about it. It's important to find out what your cholesterol numbers are so you can talk to your doctor about a treatment program and make some lifestyle changes.

All adults 20 years and older should have their blood cholesterol checked at least once every five years.

If a person has high cholesterol levels or other risk factors for heart disease, such as diabetes, he or she should be tested as often as advised by his or her doctor.

There are two types of tests to check cholesterol. One is a **finger prick test** to get a general reading of the blood cholesterol level. The other is a **lipid profile test**, which provides more detailed and accurate information.

The finger prick test is most often done at health fairs and health screenings at shopping malls. As the name implies, blood is drawn from a prick in the finger. The test provides a reading of the total cholesterol level only.

The blood cholesterol number should be **less than 200**, but the lower the better. A total cholesterol of:

- **200 – 239 is borderline high.** Depending on other risk factors, you may be at higher risk for heart disease.
- **240 or over is high.** You are at risk for clogged arteries and a heart attack.

If someone has a finger prick test and the number is close to or over 200 it is a very good idea to see the doctor. To have complete understanding of cholesterol levels and how they may be affecting your health, you should know the numbers for HDL, LDL, and triglycerides as well as total cholesterol. The **lipid profile test** provides a reading for all four.

It is also more accurate than the finger prick test and is the preferred test because it gives a more complete picture of cholesterol levels.

Before the test, a person will be asked to fast (not to eat food) for 12 hours. For this test, blood is drawn from the arm and is tested in a lab.

If levels are within the normal range, lipid profile test results will be:

- HDL (healthy, good cholesterol) – more than 40. The higher the better.
- LDL (lousy, bad cholesterol) – less than 130. The lower the better.
- Triglycerides – less than 150
- Total cholesterol – less than 200

Handout 5-2: What Do Cholesterol Numbers Mean? Review the numbers with the CHWs. Ask them how they might help people in the community understand the importance of normal cholesterol levels. Ask them to role play explaining what “good cholesterol” and “bad cholesterol” mean and what the numbers should be.

To review: Lipid profile tests should be done at regular check ups or at least once every 5 years. If a person has high cholesterol levels or other risk factors for heart disease and stroke, they should be tested as often as their doctor advises.

D. How is High Blood Cholesterol Treated?

The first step in treating high blood cholesterol is to make lifestyle changes, including a diet low in saturated fat and cholesterol, increased physical activity and weight management.

The most important change you can make in your diet is to limit the amount of saturated fat that is eaten. Saturated fat, which is found mainly in foods that come from animals, raises blood cholesterol the most.

Generally, your LDL (bad) cholesterol level will begin to drop a few weeks after you begin eating healthy meals, low in saturated fats, and increase your level of physical activity. If your cholesterol level does not fall enough, however, a doctor may prescribe medication.

So, the second step is taking cholesterol-lowering medicines prescribed by a doctor.

Handout 5-3: Medicine for High Blood Cholesterol. Review the types of medicines. Allow questions about the different types and possible side effects of each.

AHA Handout 5-4: *Let the CHWs know that this is a good handout for people in the community. Discuss the questions on the second page of the handout. How will they help people in the community answer the questions?*

The main goal is to lower the LDL number to a level that reduces the risk of developing heart disease or having a stroke. Reducing cholesterol levels can slow or even reversed the buildup of cholesterol on the walls of the arteries. By reducing LDL cholesterol levels, the risk of heart disease can be reduced.

E. What Changes Should You Make in Your Diet and Lifestyle?

As Community Health Workers, you can help people in your community lower their cholesterol levels- often without medicine. Here are some helpful tips:

- Keep a healthy weight. If you are overweight, try to lose weight.
- Eat more fruits and vegetables.
- Eat less of foods that are high in fat and calories.
- Eat healthy snacks.
- Exercise for at least 30 minutes on most days of the week.

Choose activities that you enjoy doing with your friends or family. You might play sports, walk, dance, or garden, take the stairs, park your car further from shops and walk, and play active outdoor games with children.

By taking these steps to lower your cholesterol, you can lead a life that is heart healthy.

Note to faculty: for more information, see the Healthy Eating and Physical Activity chapters.

Handout 5-5: How Can I Lower My Cholesterol? *Discuss the questions on the second page.*

Activity: Saturated Fats in Foods. *Ask for examples of foods that are high in saturated fats. Hint: foods that come from animals are often high in saturated fat. Write responses on newsprint or chalkboard.*

Possible responses:

- *Whole milk, butter, cream, and high-fat cheeses*
- *Lard, pork fat, shortening, oils such as coconut and palm*
- *Fatty meat such as ribs, hot dogs, sausage, pork rinds, liver, and lunch meats like bologna and salami.*
- *Tacos and fried foods from fast food restaurants*
- *Pastries, donuts, cakes, pies, chips and other snack food.*

Then ask what kinds of foods are lower in saturated fats or have no saturated fats?

Possible responses:

- *Fish, chicken and turkey, without skin*
- *Beans and rice*
- *Fruits and vegetables*
- *Fat free and low-fat milk*
- *Low-fat cheese, cottage cheese and yogurt*
- *Some oils (canola, olive, peanut, soybean, safflower, corn, sunflower, flaxseed)*

In order to eat a diet low in cholesterol it is important to learn to read food labels for the amount of saturated fat, total fat, cholesterol, and total calories in a serving of the product. Use this information to compare products and to pick the healthier products when shopping.

Other important things to remember about eating a healthy diet include:

- Stick margarine is not a healthy substitute for butter (because of trans-fat)
- Limit salt intake
- Limit size of portions
- Limit daily calorie intake

Handout 5-6: Tips to Lower Cholesterol. Review tips on this handout and discuss with students how they can encourage people in their community to adopt healthier lifestyles.

IV. Summary

Handout 5-7: What Can Community Health Workers Do to Help People Control High Cholesterol Levels?

Resources:

American Heart Association. www.americanheart.org

National Heart, Lung, and Blood Institute; National Institutes of Health; Department of Health and Human Services. www.nhlbi.nih.gov

Honoring the Gift of Heart Health. National Heart, Lung, and Blood Institute and Indian Health Service; National Institutes of Health; Department of Health and Human Services.