

### Activity 2:

#### Problems caused by plaque

From the above text, tabulate the effects of plaque on various parts of the body.

Name of Disease	Part of the body affected	Physical effect

Some people with atherosclerosis have no signs or symptoms. They may not be diagnosed until after a heart attack or stroke.

The main treatment for atherosclerosis is lifestyle changes. You also may need medicines and medical procedures. These, along with ongoing medical care, can help you live a healthier life.

The cause of atherosclerosis isn't known. However, certain conditions may raise your chances of developing it. These conditions are known as risk factors. You can control some risk factors, such as lack of physical activity, smoking, and unhealthy eating. Others you can't control, such as age and family history of heart disease.

### Activity 3:

#### Controlling the risk

From the above text, list what you can do to limit the risk factors of atherosclerosis.

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What are the main 2 factors you cannot control?

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### TREATMENT OF ATHEROSCLEROSIS

In recent times, better treatments have reduced the number of deaths from atherosclerosis-related diseases. These treatments also have improved the quality of life for people with these diseases. Still, the number of people diagnosed with atherosclerosis remains high.

Methods of removing plaque, especially from arteries in the heart and brain include the following.

- To orally take thrombolytic (clot-dissolving) agents. However, to be effective, they must be given within a few hours after symptoms begin.
- Angioplasty: Surgery done on arteries, veins or capillaries in which a balloon is inflated inside a blood vessel to flatten any plaque that obstructs it and causes it to become narrowed.

Atherosclerosis can affect any artery in the body, including arteries in the heart, brain, arms, legs, and pelvis. As a result, different diseases may develop based on which arteries are affected.

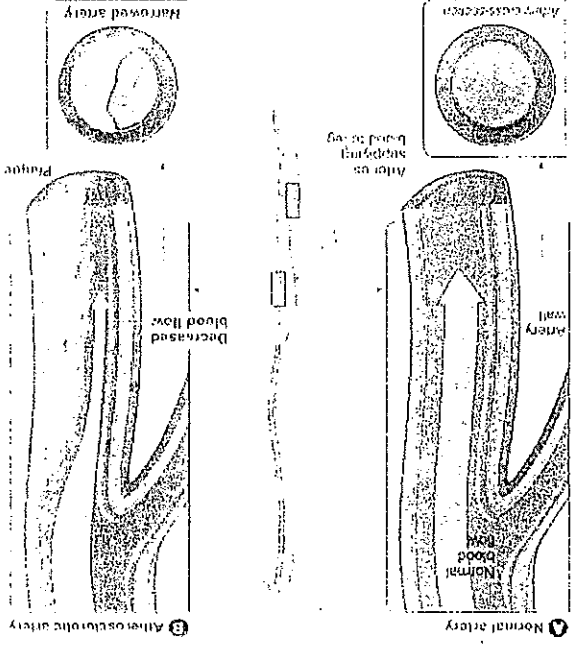
### 3 DISEASES CAUSED BY ATHEROSCLEROSIS

1. **Coronary Artery Disease (CAD)**. This is when plaque builds up in the **coronary arteries**. These arteries supply oxygen-rich blood to your heart. When blood flow to your heart is reduced or blocked, it can lead to **chest pain and heart attack**. CAD is the most common type of **heart disease**, and it's the leading cause of death in the United States.



2. **Carotid Artery Disease**. This happens when plaque builds up in the **carotid arteries** (the two large blood vessels in your neck). These arteries supply oxygen-rich blood to your **brain**. When blood flow to your brain is reduced or blocked, it can lead to **stroke**.

3. **Peripheral Artery Disease (PAD)**. This occurs when plaque builds up in the **major arteries** that supply oxygen-rich blood to the **legs, arms, and pelvis**. When blood flow to these parts of your body is reduced or blocked, it can lead to **numbness, pain, and** sometimes dangerous **infections**.



- **Athrectomy**: A catheter is placed in the aorta in the groin and then moved to the heart or the location of the plaque. The instrument then mechanically removes the plaque.

### Activity 4:

#### Various treatments

From the above text, answer the following questions.

1. Which treatment involves inflating a balloon inside the blood vessel to flatten plaque? \_\_\_\_\_
2. Which treatment involves mechanically removing the plaque using a catheter entering the aorta in the groin? \_\_\_\_\_
3. Why is taking colt-dissolving agents not a good method for removing plaque? \_\_\_\_\_

### TECHNIQUES USED TO EASE BLOOD FLOW

You are required to GATHER INFORMATION FROM SECONDARY SOURCES on techniques used to ease blood flow to and from the heart and in blood vessels, when there has been a build up of plaque.

### Activity 5:

Outline the following techniques in point form:

## Activity 1:

### Effects of blood clots on the body

Blood clots may affect the body by raising blood pressure.

From the above text, tabulate the effects of increased blood pressure from blood clots on the body.

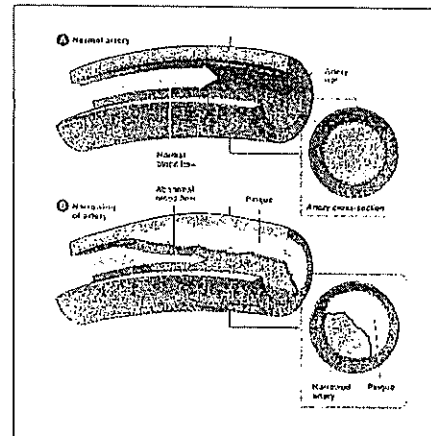
Name of problem	Physical effect

## 1. Angioplasty

## WHAT IS ATHEROSCLEROSIS?

Atherosclerosis is a disease in which plaque builds up on the insides of your arteries. Arteries are blood vessels that carry oxygen-rich blood to your heart and other parts of your body.

Plaque is made up of fat, cholesterol, calcium, and other substances found in the blood. Over time, plaque hardens and narrows your arteries. The flow of oxygen-rich blood to your organs and other parts of your body is reduced. This can lead to serious problems, including heart attack, stroke, or even death.



## 2. Athrectomy

Figure A shows a normal artery with normal blood flow. Figure B shows an artery with plaque build-up.

# PLAQUE BUILD-UP IN VEINS AND ARTERIES

## DOT POINTS COVERED

9.3.2 h describe and explain the build up of plaque on the walls of major arteries and veins on blood flow to and from the heart.

9.3.2 i discuss ways in which plaque could be eliminated to ease blood flow.

9.3.2 p gather information from secondary sources on techniques used, including angioplasty, to ease blood flow to and from the heart and in blood vessels, when there has been a build up of plaque.

The build up of plaque on the walls of arteries and veins is termed *atherosclerosis*.

- A healthy artery or vein has a pale, smooth, glistening wall. At sites of plaque, yellow fatty streaks are apparent under the thin layer of that line the interior surface of blood vessels. Here, a fat deposit is built up from cholesterol. Dense white tissue may also be laid down forming a raised area in the wall of the vessel. This leads to the smooth wall breaking down, leaving the rough fibrous tissue exposed. The blood platelets (known for initiating clotting in blood) selectively adhere to the rough surface, and a blood clot, or *thrombus*, subsequently forms.

- Such blood clots may affect the body by raising blood pressure, leading to *aneurysms* (a bulging and weakening of the vessel wall), or obstructions such as *embolisms* (a mobile blood clot) or a *thrombosis* (a localised blood clot). Atherosclerosis of the coronary artery may lead to heart attack if not treated promptly.

