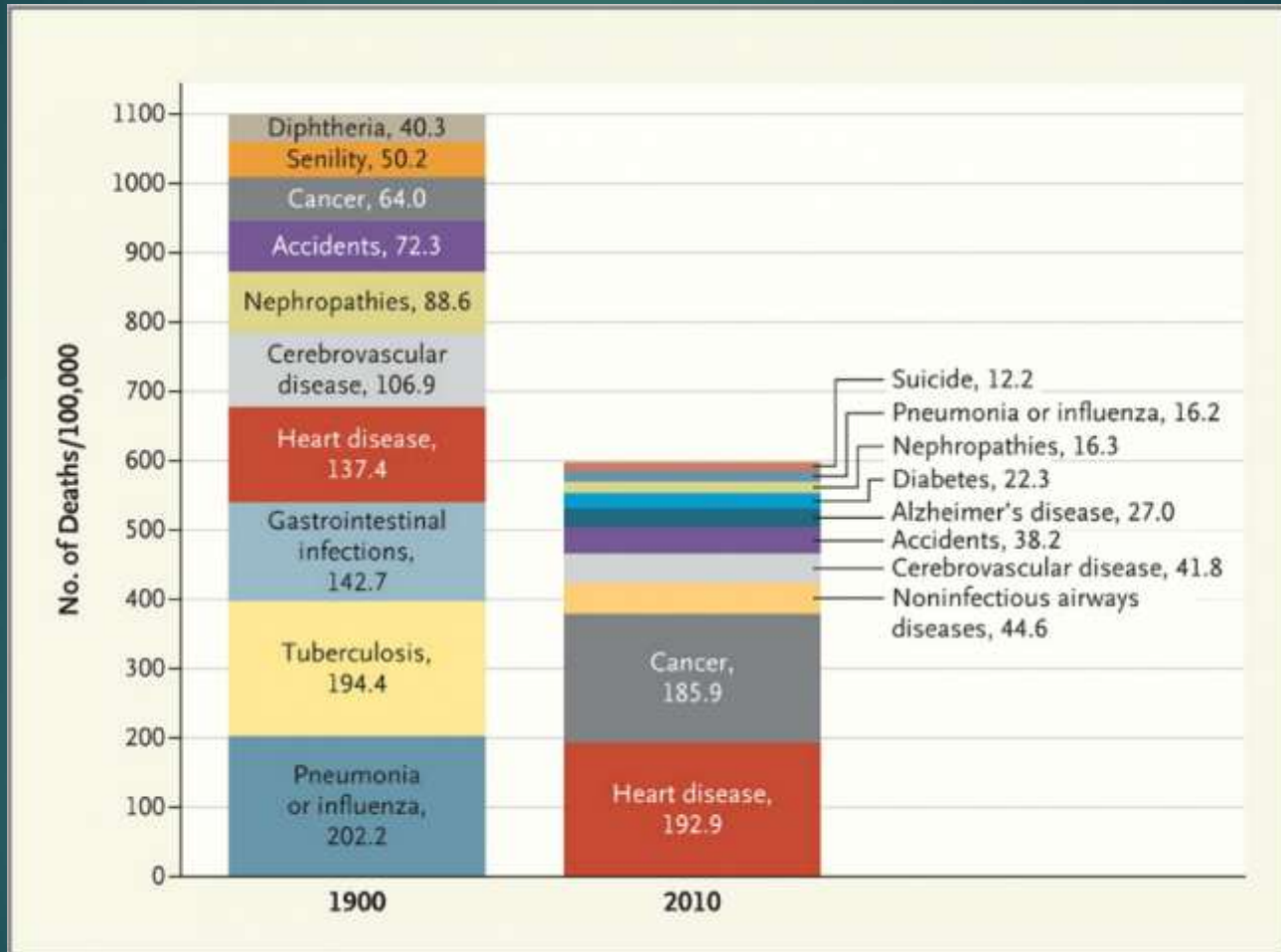


HLT201

Chapter 2: Common medical problems

Omar Bou Hamdan, MD

Leading causes of death



Common medical problems

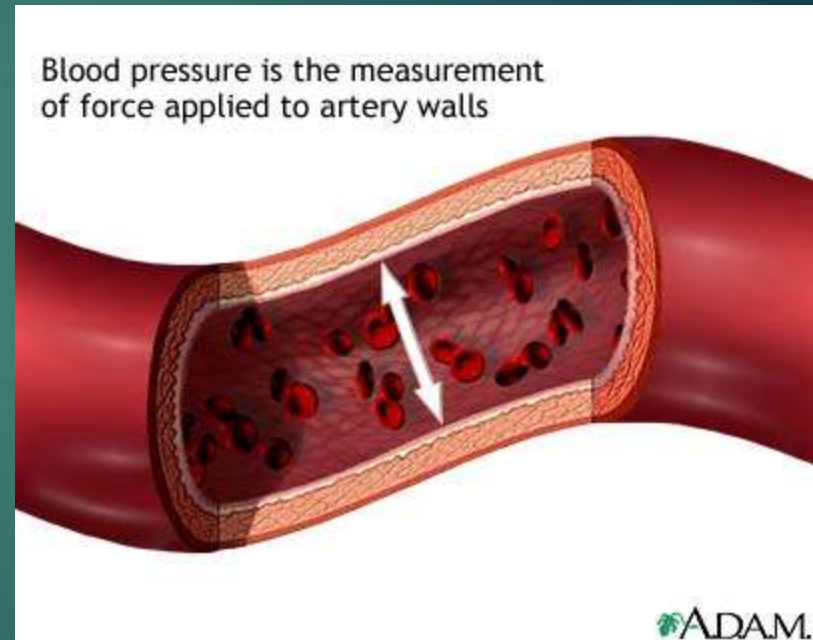
- ▶ Hypertension
- ▶ Dyslipidemia
- ▶ Coronary artery diseases (Heart Attack)
 - ▶ Stroke

Hypertension

Definition

Hypertension is the term used to describe **high blood pressure**.

Blood pressure is a measurement of the force against the walls of your arteries as the heart pumps blood through the body.



Measuring BP

Blood pressure readings are measured in millimeters of mercury (mmHg) and usually given as two numbers -- for example, **120 over 80** (written as 120/80 mmHg).

One or both of these numbers can be too high.



Measuring BP

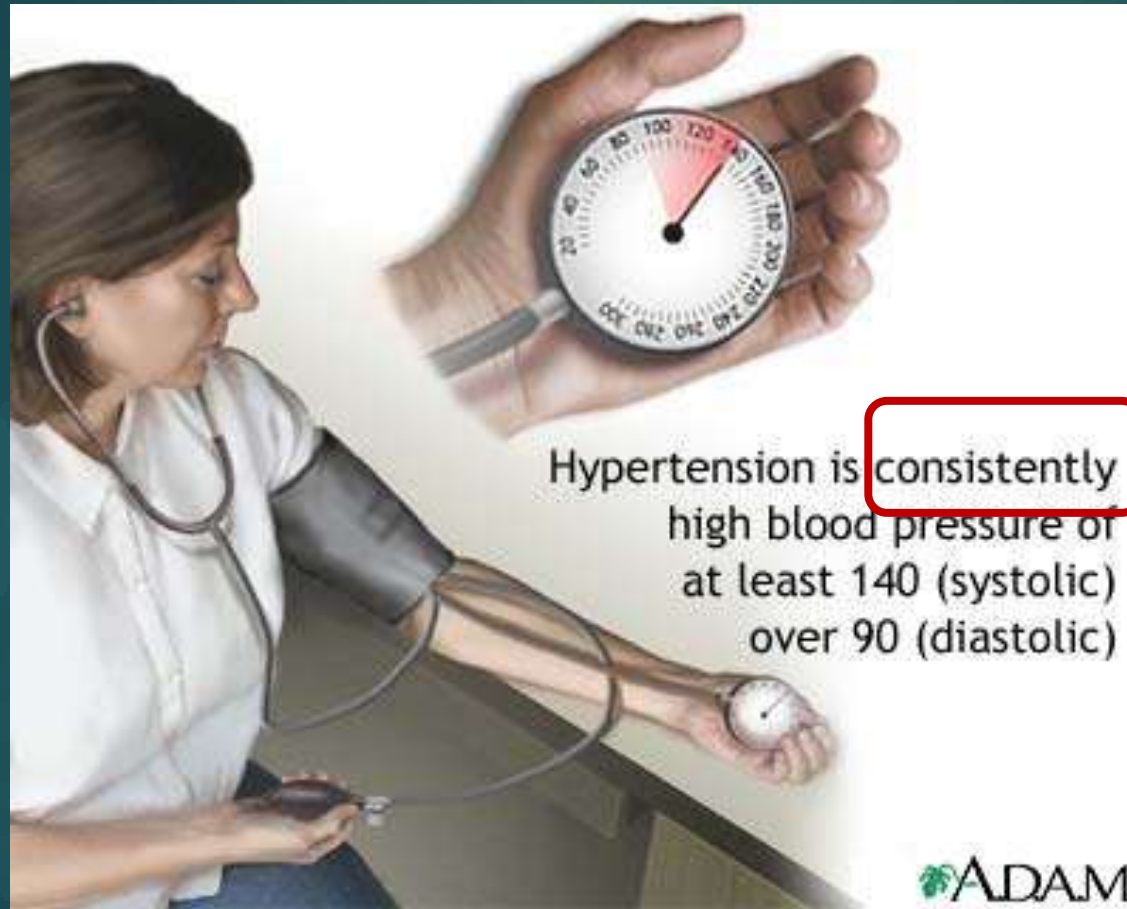
- ▶ The top number is the systolic pressure.

It is considered high if it is **over 140** most of the time.

- ▶ The bottom number is the diastolic pressure.

It is considered high if it is **over 90** most of the time.

Measuring BP



The measurements need to be repeated over time, so that the diagnosis can be confirmed.

Causes of hypertension

Risk factors for high blood pressure :

- ▶ obesity
- ▶ stressful lifestyle
- ▶ too much salt in the diet
- ▶ a family history of high blood pressure
- ▶ Diabetes
- ▶ Smoking
- ▶ **Aging** (vessels become stiffer)

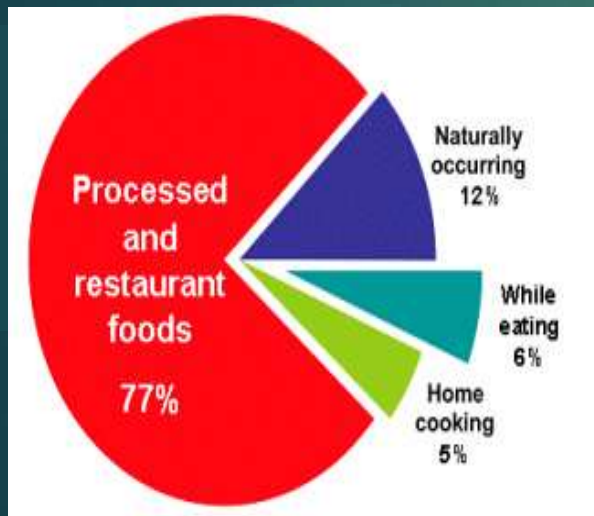
Causes of hypertension

Most of the time, no cause is identified. This is called **essential hypertension i.e, primary hypertension**

High blood pressure that is caused by another medical condition or medication is called **secondary hypertension 10% of cases**, it may be due to:

- ▶ Alcohol abuse
- ▶ Atherosclerosis
- ▶ Chronic kidney disease
- ▶ Cocaine use
- ▶ Endocrine disorders
- ▶ Medications
 - ▶ Appetite suppressants
 - ▶ Birth control pills
 - ▶ Certain cold medications
 - ▶ Corticosteroids
- ▶ Others

Salt and hypertension



- ▶ Research shows **a strong dose-dependent relationship** between consuming too much salt and raised levels of blood pressure—as sodium intake increases, so does blood pressure for most people.
- ▶ The 2010 Dietary Guidelines for Americans recommend limiting sodium to **less than 2,300 milligrams (mg) per day**.

Symptoms of hypertension

Most of the time, **there are NO symptoms**. Symptoms that may occur include:

- ▶ Confusion
- ▶ Ear noise or buzzing
- ▶ Fatigue
- ▶ Headache
- ▶ Nosebleed
- ▶ Vision changes

THE SILENT KILLER

Screening

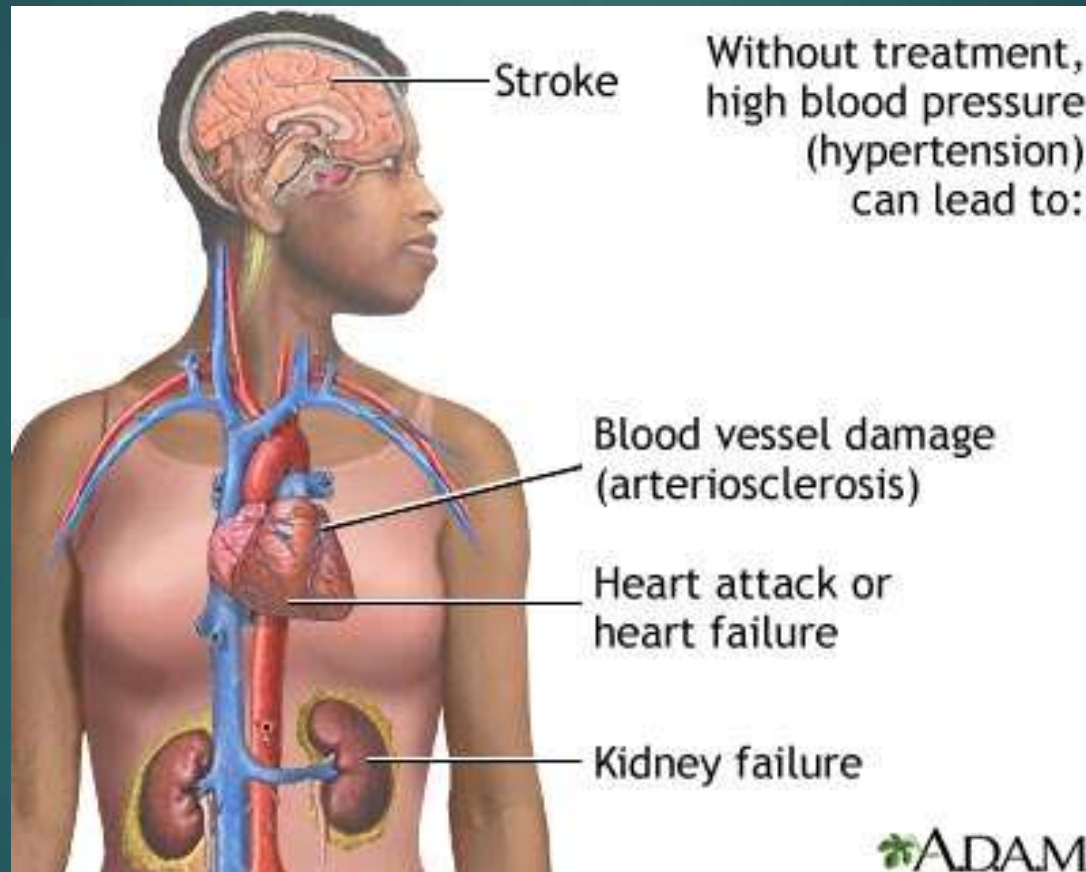
The U.S. Preventive Services Task Force (USPSTF) recommends screening for high blood pressure in adults aged **18 and older** every 2 years

Complications

If left untreated, hypertension can lead to the **thickening of arterial walls** causing its lumen, or blood passage way, to narrow in diameter. As a result, the **heart must work harder** to pump blood through the narrowed arterial openings.

In addition, people with hypertension may be more susceptible to **stroke**.

Treatment



Treatment

Lifestyle modifications:

- ▶ A healthy diet, including potassium and fiber
- ▶ Regular exercise
- ▶ Smoking cessation
- ▶ Restriction of alcohol intake
- ▶ Limit the amount of sodium (salt)
- ▶ stress reduction
- ▶ Healthy body weight

Treatment

There are many different **medications** that can be used to treat high blood pressure, more than one medication is usually needed

Prevention

Adults over 18 should have their blood pressure checked routinely.

Lifestyle changes may help control your blood pressure



ADAM



Exercising
10 minutes
at a time,
3 times a day,
5 days a week,
can help lower
blood pressure

ADAM

Summary

- ▶ Often no cause for high blood pressure can be identified, but sometimes it occurs as a result of an underlying disorder of the kidneys or a hormonal disorder.
- ▶ Obesity, a sedentary lifestyle, stress, smoking, and excessive amounts of alcohol or salt in the diet all can play a role in the development of high blood pressure in people who have an inherited tendency to develop it.
- ▶ In most people, high blood pressure causes no symptoms.
- ▶ Doctors make the diagnosis after measuring blood pressure on two or more occasions.

Dyslipidemia

Definition

Abnormally high levels of total cholesterol, low density lipoprotein (**LDL—the bad—cholesterol**), or triglycerides,

as well as an **abnormally low level** of high density lipoprotein (**HDL—the good—cholesterol**)



Risk factors

- ▶ Having close relatives who have had dyslipidemia (having a **family history** of the disorder)
- ▶ Being overweight
- ▶ Consuming a diet high in saturated fats and cholesterol
- ▶ Being physically inactive
- ▶ Consuming large amounts of alcohol
- ▶ smoking

Lipid levels

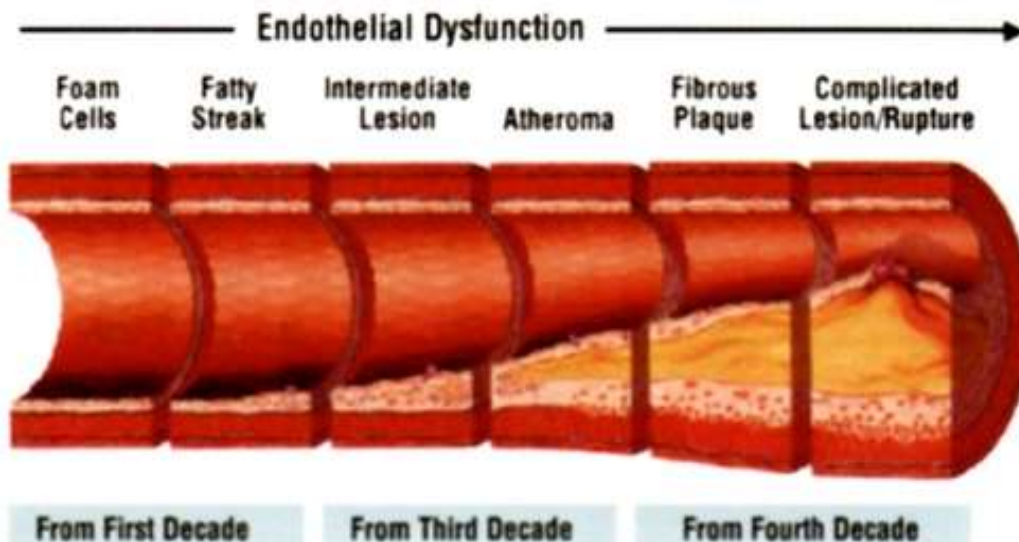
Desirable Lipid Levels in Adults

Lipid	Goal (mg/dL)*
Total cholesterol	Less than 200 mg/dL
Low-density lipoprotein (LDL) cholesterol	Less than 100 mg/dL
High-density lipoprotein (HDL) cholesterol	More than 40 mg/dL
Triglycerides	Less than 150 mg/dL

The lipid profile should be measured in all adults **20 years and older**, and the measurement should be repeated **every 5 years**

Complications: atherosclerosis

Atherosclerosis Timeline



Treatment

- ▶ **Healthy diet:**

- low in saturated fats
- High in poly and monounsaturated fats
- High in fibers

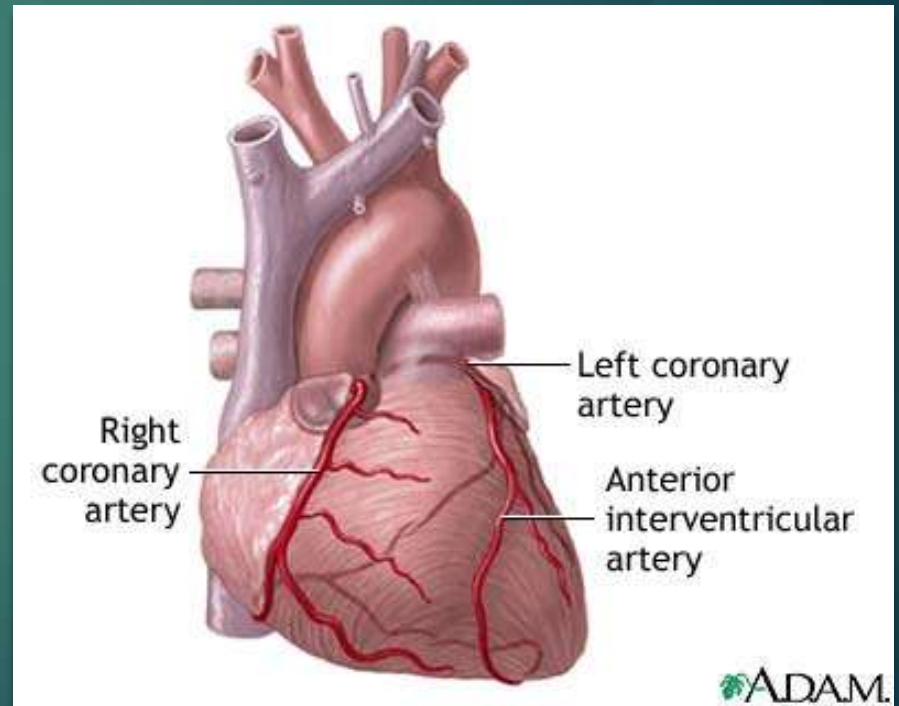
- ▶ **Physical exercise**

- ▶ **Lipid lowering drugs**

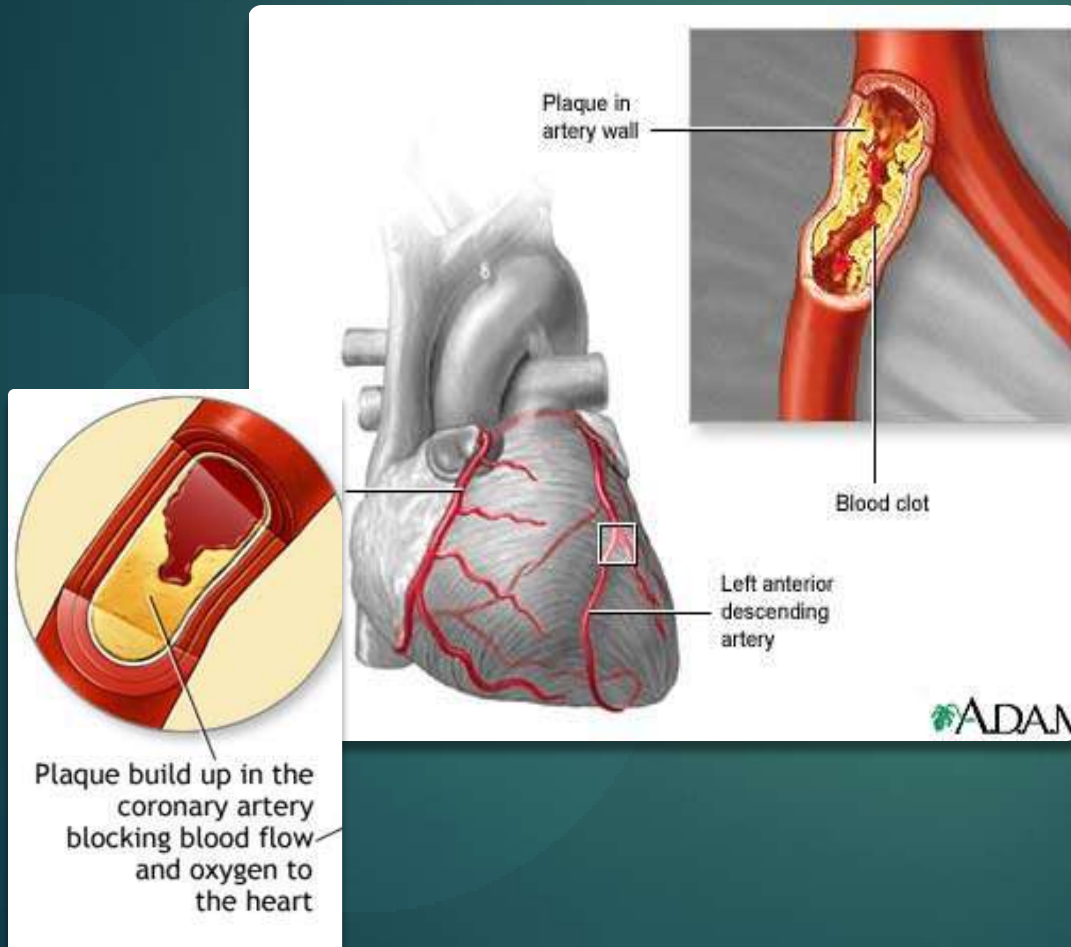
Coronary heart diseases (Heart Attack)

Heart anatomy

The coronary arteries supply blood to the heart muscle.



Coronary artery diseases



Atherosclerosis is a disease of the arteries in which fatty material is deposited in the vessel wall, resulting in narrowing and eventual impairment of blood flow.

Atherosclerosis shows no symptoms until a complication occurs.

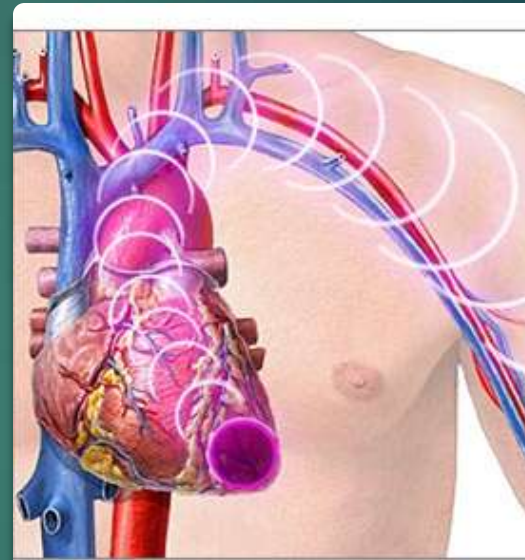
Coronary artery diseases (Atherosclerosis)

Risk factors for coronary artery disease include:

- ▶ Increasing age (over age 65)
- ▶ Male gender
- ▶ Diabetes
- ▶ Family history of coronary artery disease (genetic or hereditary factors)
- ▶ High blood pressure
- ▶ Smoking
- ▶ Too much fat in diet
- ▶ Unhealthy cholesterol levels, especially high LDL ("bad") cholesterol and low HDL ("good") cholesterol

Heart attack

- Chest discomfort - pressure, squeezing, or pain
 - Shortness of breath
- Nausea, vomiting, dizziness, lightheadedness, sweating



Pain radiating down left (or, less often, right) arm might signal a heart attack

Heart attack

Anything that requires the heart muscle to need more oxygen can cause an angina attack, including:

- ▶ Cold weather
- ▶ Exercise
- ▶ Emotional stress
- ▶ Large meals

Tests

It is a medical **EMERGENCY**

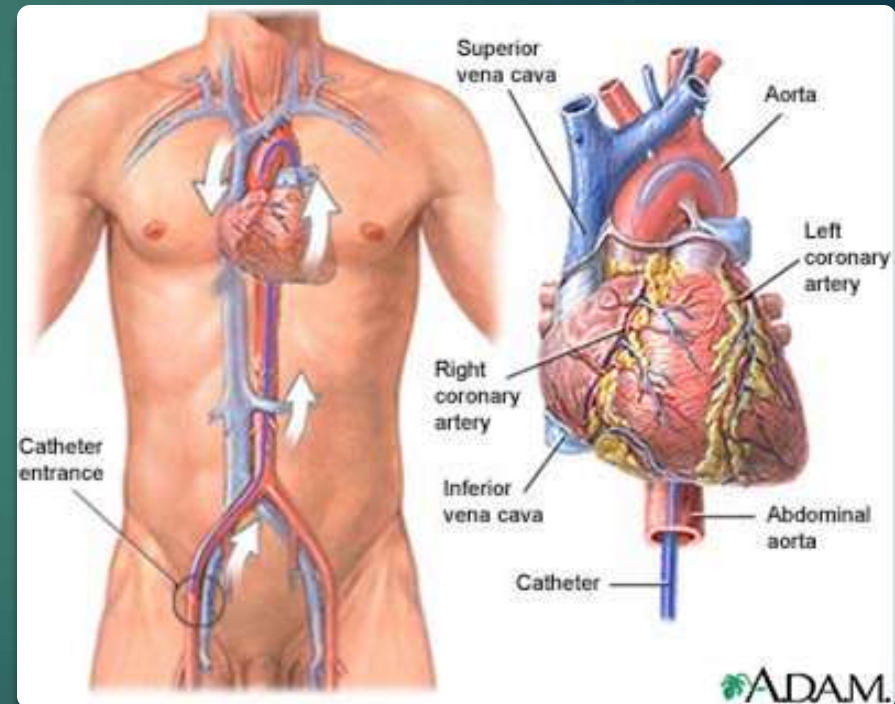
Tests required include:

- ▶ **Cardiac catheterization**
- ▶ CT scan
- ▶ Echocardiography
- ▶ Electrocardiogram (ECG)
- ▶ Blood tests: Troponin and CPK

Cardiac catheterization

Cardiac catheterization involves passing a thin flexible tube (catheter) into the right or left side of the heart, usually from the **groin or the arm**.

Examine the arteries of the heart with an x-ray technique called **fluoroscopy** (which gives immediate, "real-time" pictures of the x-ray images on a screen)



Cardiac catheterization

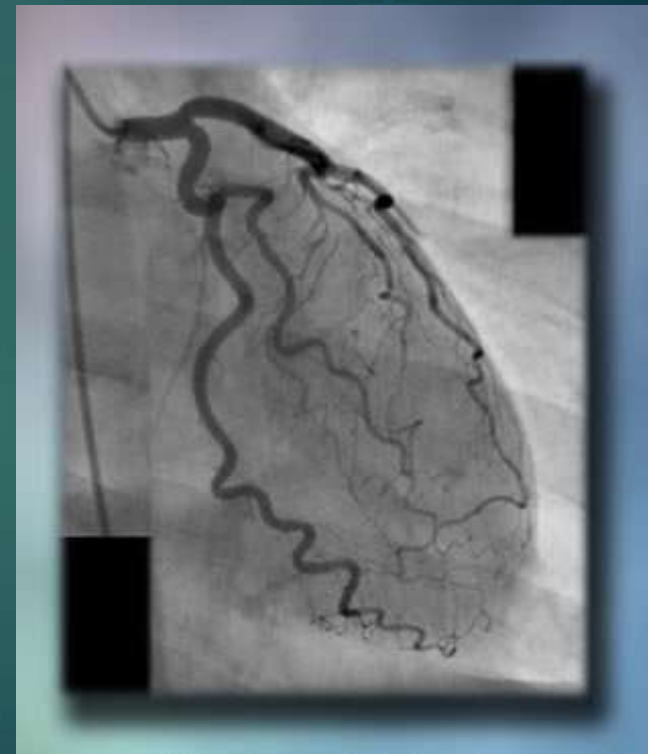
Dye is injected into the coronary arteries



Coronary artery
blockage site

X-ray image

ADAM.



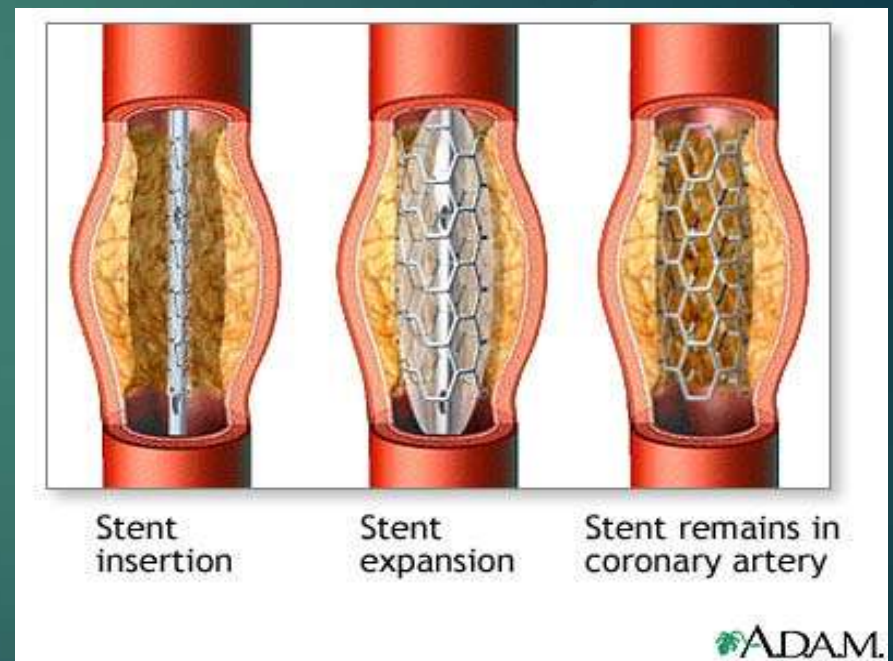
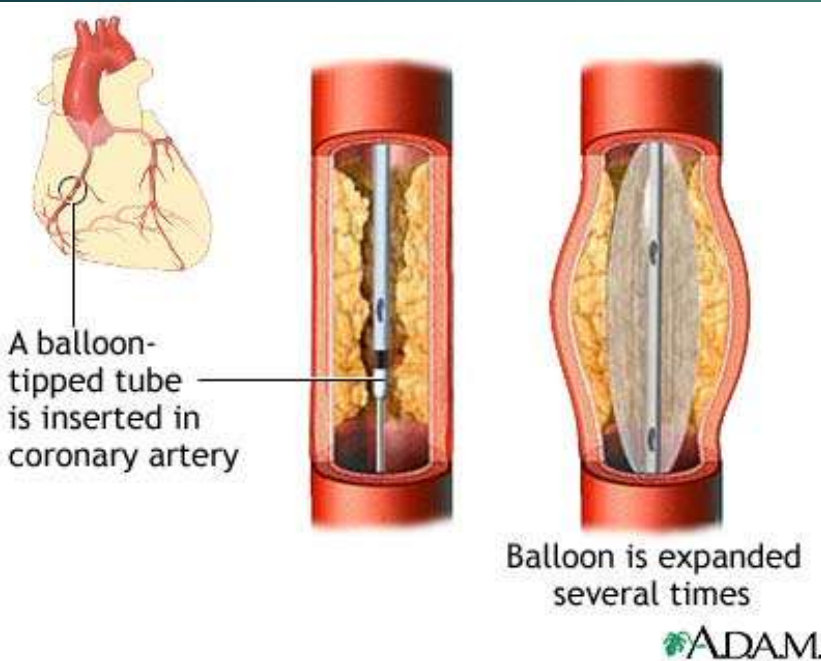
Treatment of coronary artery diseases

- Lifestyle changes
- Medications
- Invasive procedures: coronary angioplasty or stent placement and coronary artery bypass surgery

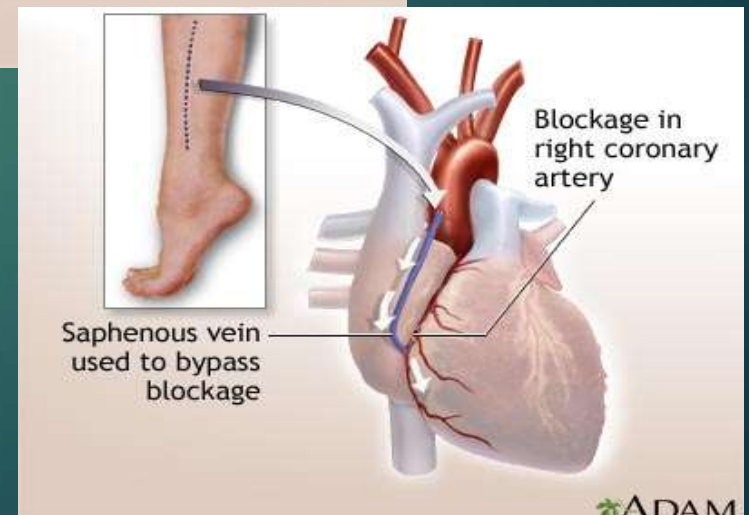
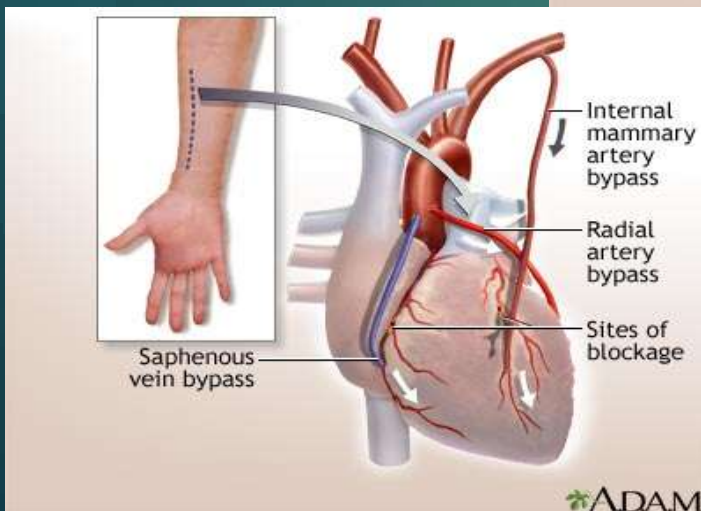
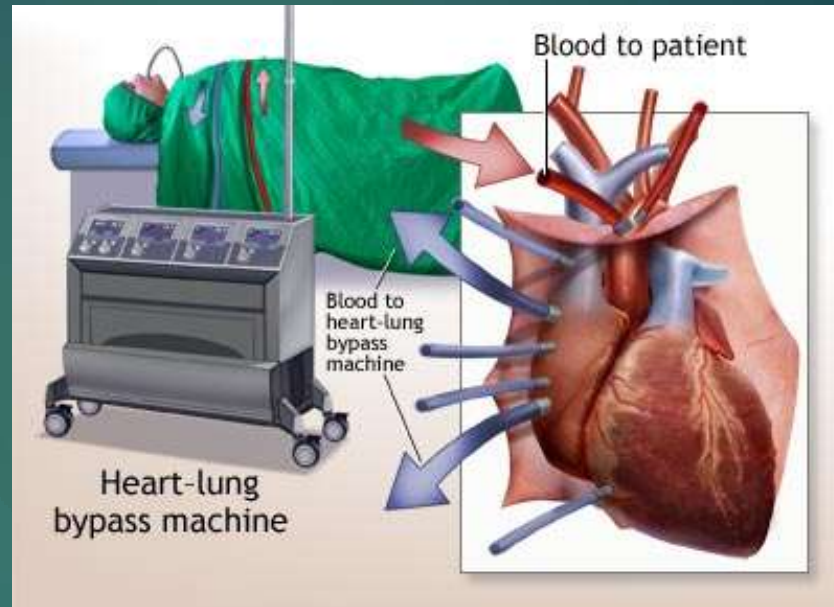
Coronary angioplasty

BALLOON

STENT



Coronary artery Bypass surgery



Prevention of CAD

To prevent a heart attack:

- ▶ Keep blood pressure, blood sugar, and cholesterol under control.
- ▶ Don't smoke.
- ▶ Eat a low-fat diet rich in fruits and vegetables and low in animal fat.
- ▶ Eat fish twice a week. Baked or grilled fish is better than fried fish. Frying can destroy some of the health benefits.
- ▶ Exercise daily or several times a week. Walking is a good form of exercise.
- ▶ Healthy weight

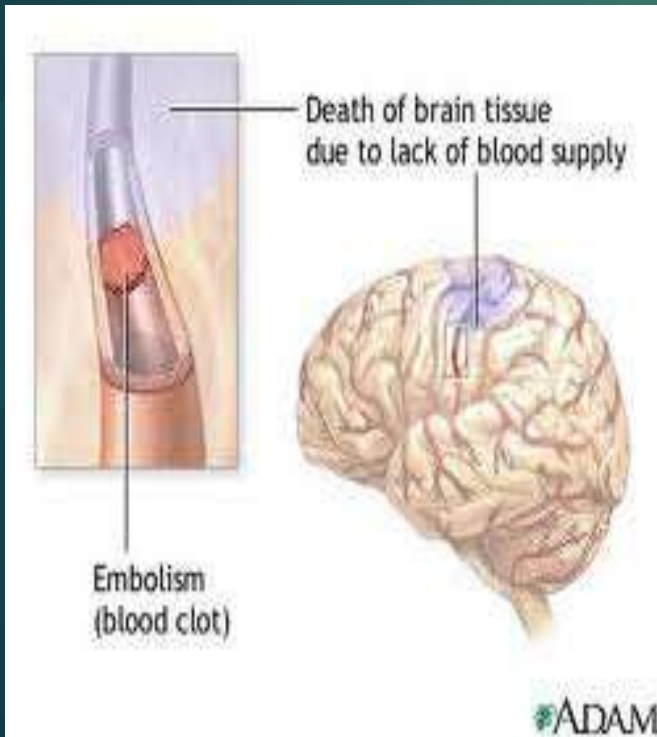
Stroke

Stroke

A stroke is an interruption of the blood supply to any part of the brain.

A stroke is sometimes called a "brain attack."

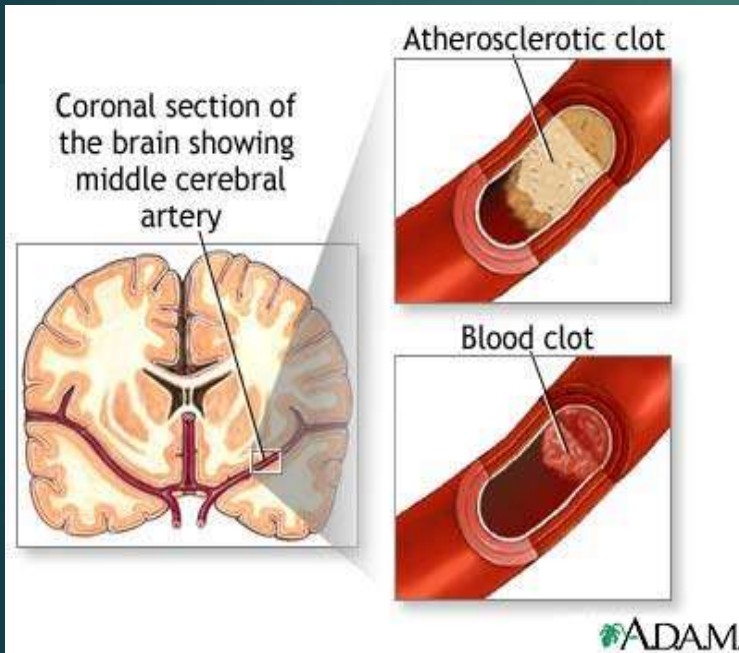
A stroke happens when blood flow to a part of the brain is interrupted because a blood vessel in the brain is blocked or bursts open.



Causes

1. ischemic:

Decreased blood flow



2. Hemorrhagic

Bleed



Some people have defects in the blood vessels of the brain that make this more likely.

Risk factors

- ▶ **High blood pressure** is the number one risk factor for strokes.
- ▶ Diabetes
- ▶ atherosclerosis
- ▶ Family history of stroke
- ▶ Heart disease
- ▶ High cholesterol
- ▶ Increasing age
- ▶ Smoking
- ▶ Using cocaine or amphetamines

Symptoms

- ▶ The symptoms of stroke **depend on what part of the brain is damaged**: movement / thinking/ vision/ speech problems
- ▶ Symptoms usually develop **suddenly** and without warning

Treatment

- ▶ It is a medical **EMERGENCY**
- ▶ In the hospital:
 - If cause is artery blockage, clot busting drugs (Thrombolytics) within few hours
 - If cause is bleeding, surgery is required
- ▶ Long term treatment for recovery

Prognosis

- ▶ Recovery after a stroke depends on many factors, such as the location and amount of damage, the person's age, and the presence of other disorders.
- ▶ **Recovery may occur completely**, or there may be some permanent loss of function.

***THANK
YOU***

