Medical Terminology

Lecture 6

First stage

24/1/ 2026

Prof.Dr. Uday Al-Rikaby

College of Pharmacy-University of Al-Ameed

The Cardiovascular System

Introduction

The **cardiovascular system** comprises the heart, blood, and the blood vessels.

❖The blood vessels include:

1. **Arteries** (carrying blood **away** from the heart).
2. **Veins** (carrying blood **toward** the heart).
3. **Capillaries** (vessels **between** the arteries and veins).

❖**Heart** and **blood vessels** together form a **transportation system for:**

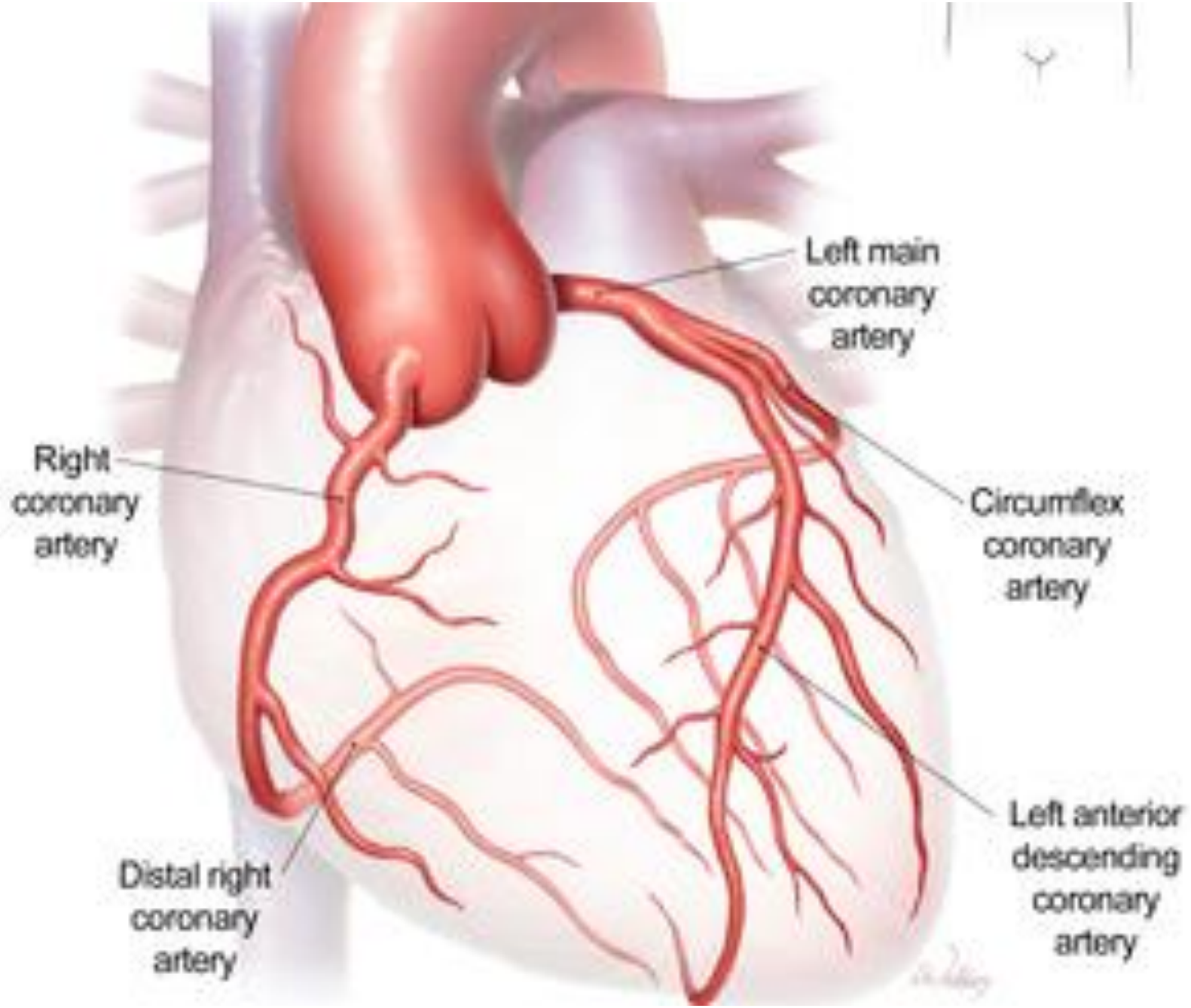
- Delivers **oxygen** and nutrients to the body's cells,
- **Transport carbon dioxide** and wastes from cell to be eliminated.
- **Regulate body temperature.**

Word parts related to the cardiovascular system

Word	Part Meaning
cardi/o	heart
atri/o	atrium
ventricul/o	ventricle
angi/o or vas/o	vessel
aort/o	aorta
phleb/o or ven/o	vein
coron/o	crown; like coronary blood vessels

-emia	blood
hem/o or hemat/o	blood
tachy-	fast
brady-	slow
-stenosis	narrowing
varic/o	dilated

ather/o	fatty
thromb/o	clot
electr/o	electricity
-gram	written record
Isch-	restricting
my/o	muscle


Left main coronary artery
Right coronary artery
Circumflex coronary artery
Left anterior descending coronary artery
Distal right coronary artery

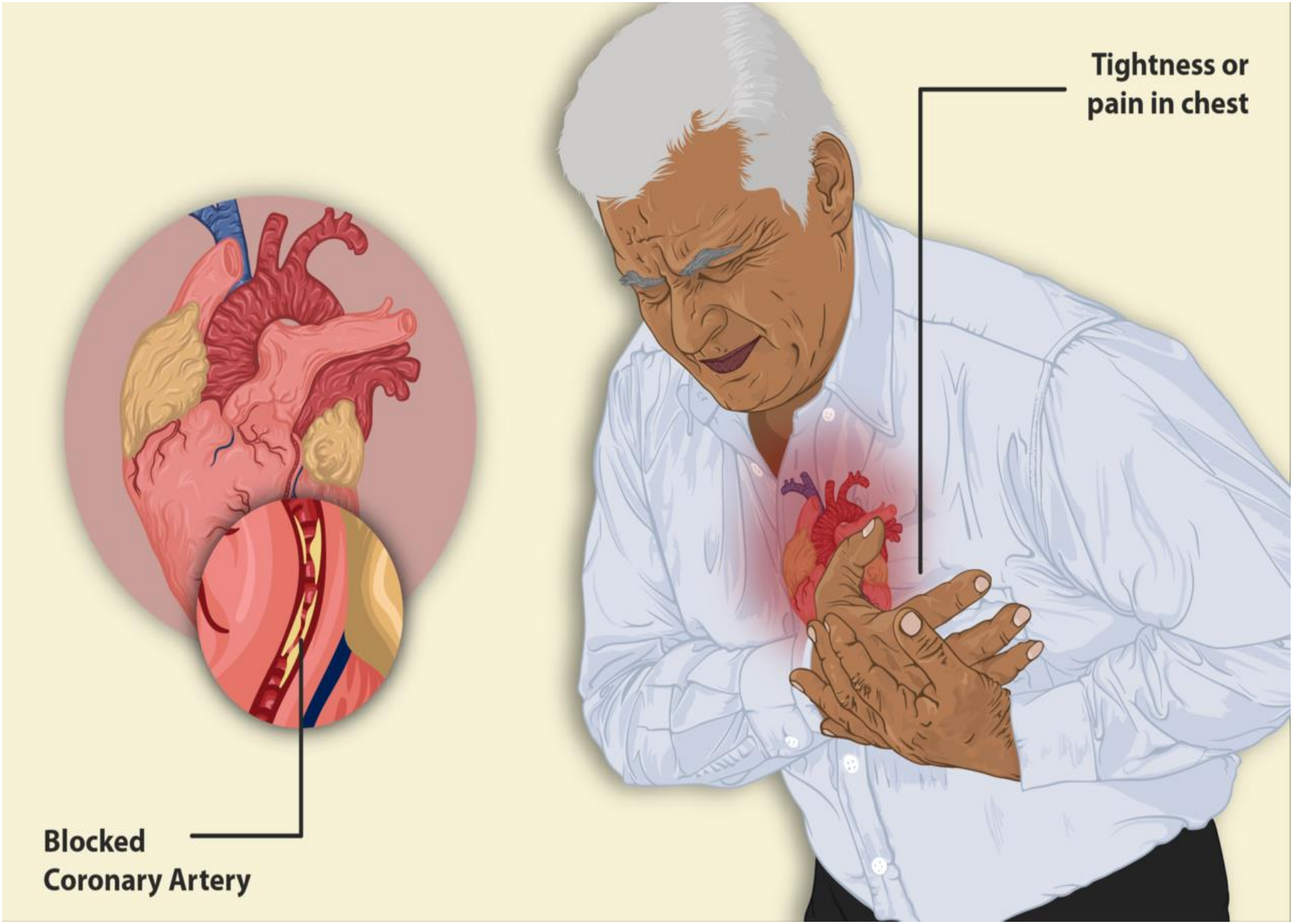
varicose veins



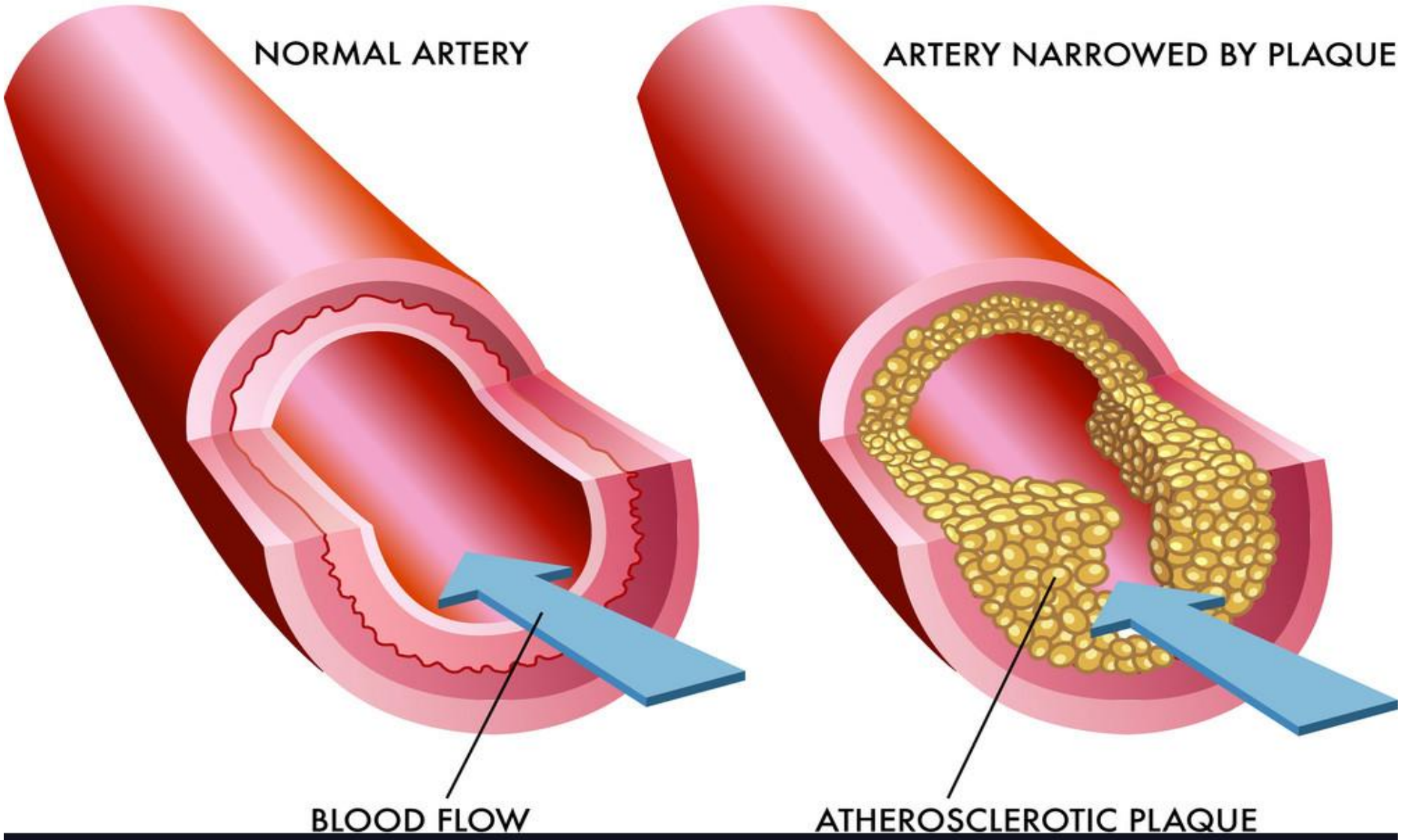
Disorders related to the cardiovascular system

- **Cardiologists** diagnose and treat heart disorders.
- **Hematologists** diagnose and treat blood disorders.

Term	Meaning
Angina pectoris	**Pain in the chest** caused by **insufficient blood supply to the heart.**
Arrhythmia	Any abnormality in the **rate** or **rhythm** of the heartbeat , Also called **dysrhythmia.**
Atherosclerosis	**Hardening** and **narrowing** of the arteries caused by buildup of **fatty** substances.
Bradycardia	A slow heart rate of **less than 60 beats** per minute.
Cerebrovascular accident (CVA)	**Sudden damage to the brain resulting from reduction of blood flow**. Commonly called **stroke.**

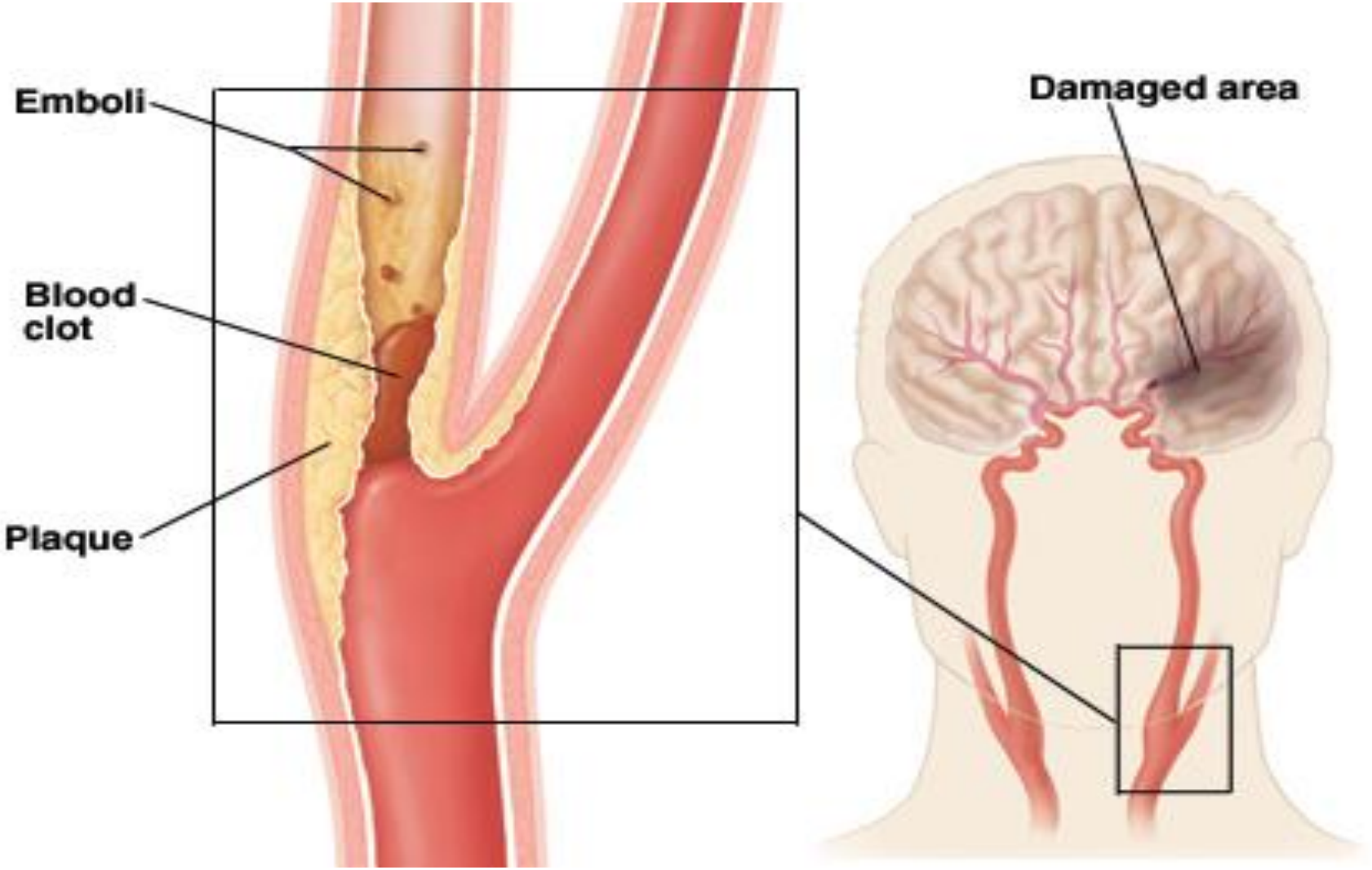

Tightness or
pain in chest
Blocked
Coronary Artery

ATHEROSCLEROSIS

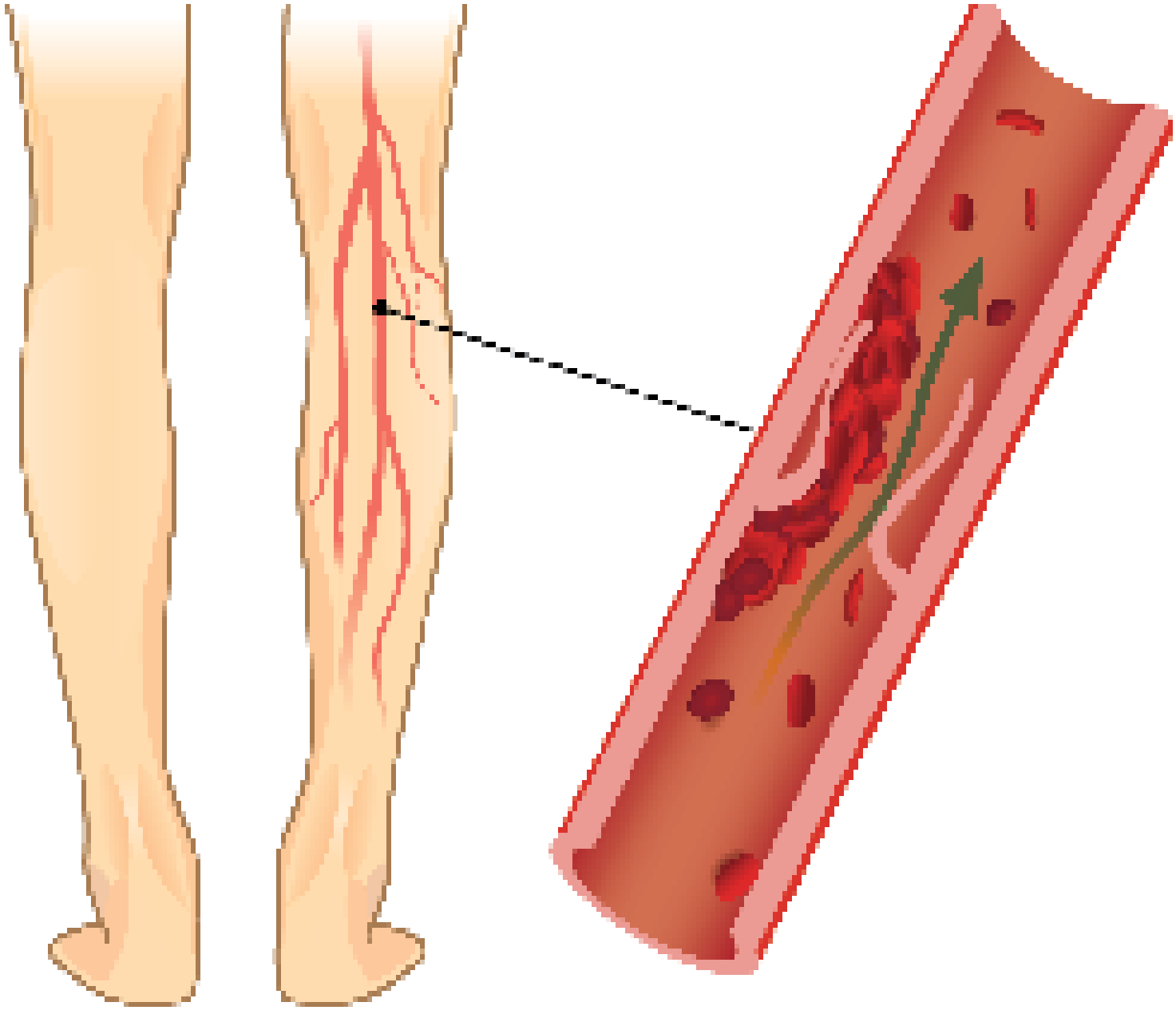


VectorStock®
VectorStock.com/5345869

Stroke



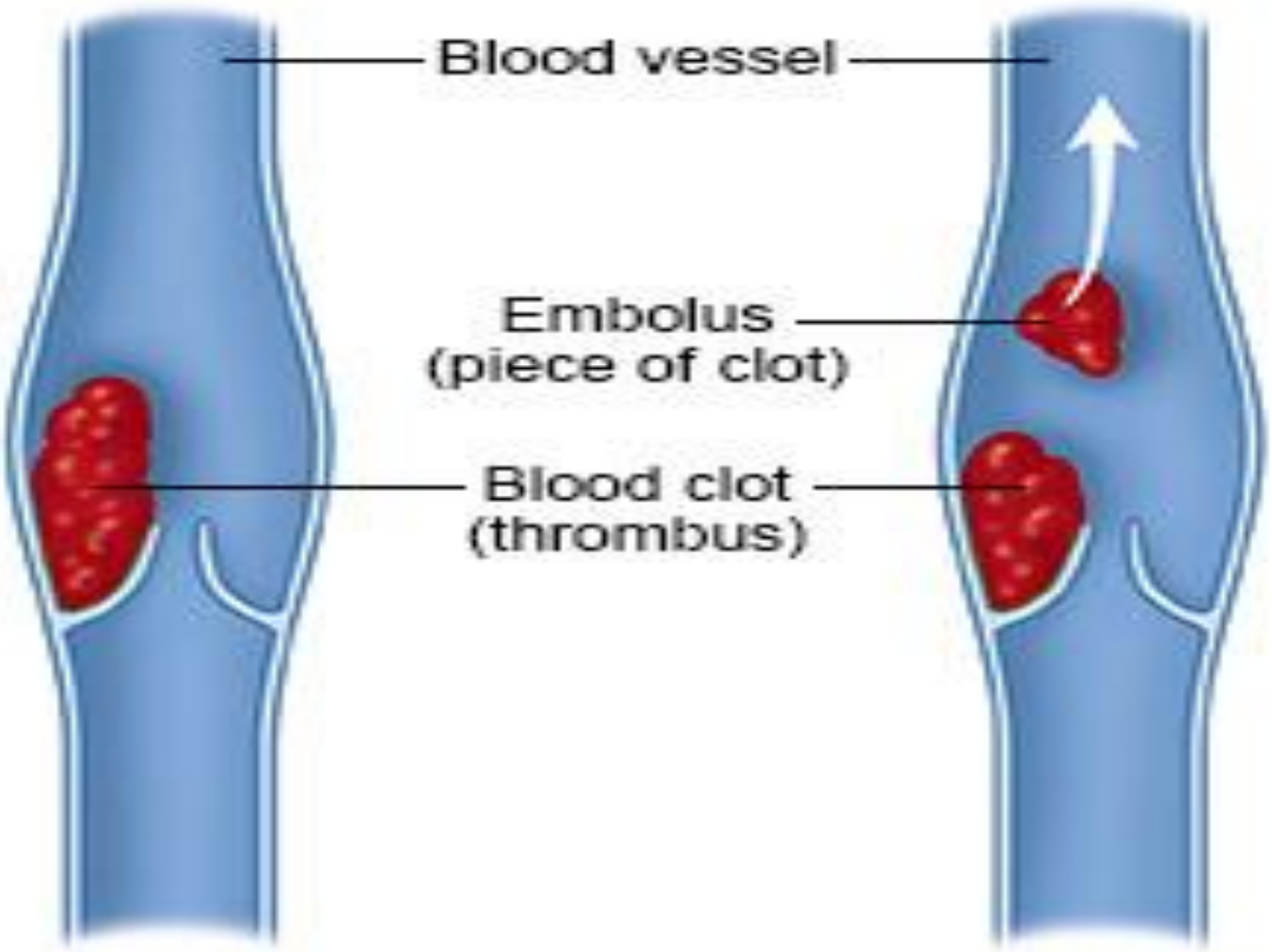
Coronary artery disease (CAD)	**Narrowing** of one or more coronary arteries, usually due to **atherosclerosis**
Deep vein thrombosis (DVT)	Is the condition of having a **thrombus in the deep vein**.
Dyslipidemia	**Disorder in lipid levels**, which is an important factor in development of atherosclerosis.
Dyspnea	**Difficult breathing** (-pnea).





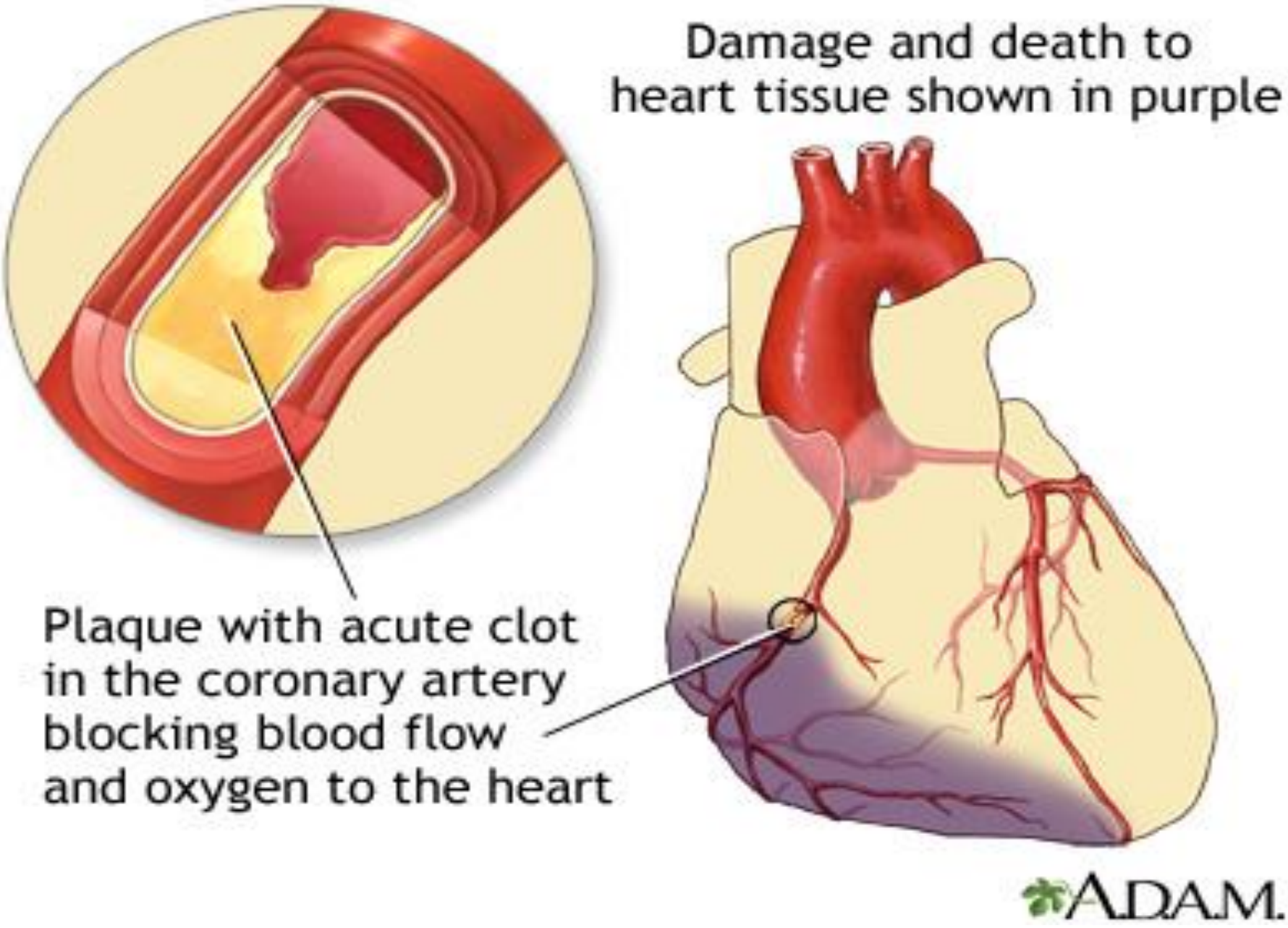
Edema	**Swelling of body tissues** caused by the presence of excess **fluid.** Causes include cardiovascular disturbances, kidney failure.
Embolism	**Obstruction of a blood vessel** by a blood clot or other matter carried in the circulation.
Embolus	Is a foreign object, **such as a blood clot**, or a quantity of air or gas that **moves throughout the bloodstream.**
Heart failure	A condition caused by the **inability of the heart** to maintain adequate circulation of blood.

Thrombus and Embolus





Hypertension	A condition of **higher**-than-normal **blood pressure**.
Infarct	An area of **necrosis (death)** of tissue resulting from a blockage or a narrowing of the artery that supplies the area.
Ischemia	**Deficiency in blood supply** and oxygen to the tissues.
Myocardial infarction (MI)	**Necrosis (death) of cardiac muscle tissue** resulting from blockage or narrowing of the coronary artery that supplies that area.
Myocarditis	Inflammation of the heart muscle.

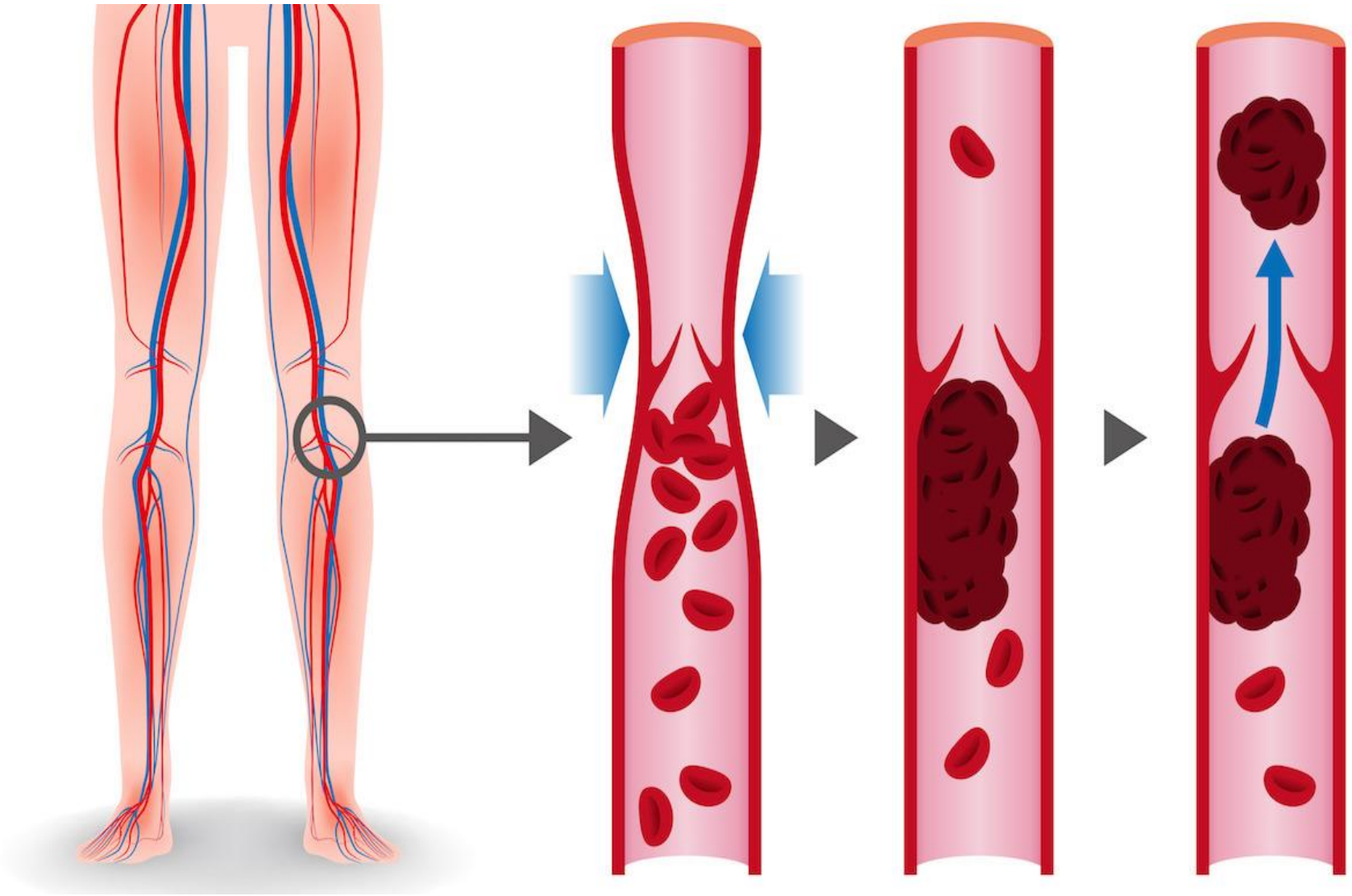

Damage and death to heart tissue shown in purple
Plaque with acute clot in the coronary artery blocking blood flow and oxygen to the heart
A.D.A.M.

Palpitation	A **sensation** of **abnormally rapid or irregular heartbeat.**
Phlebitis	Inflammation of a **vein.**
Stenosis	**Narrowing.**
Syncope	A temporary **loss of consciousness** caused by inadequate blood flow to the brain; fainting.

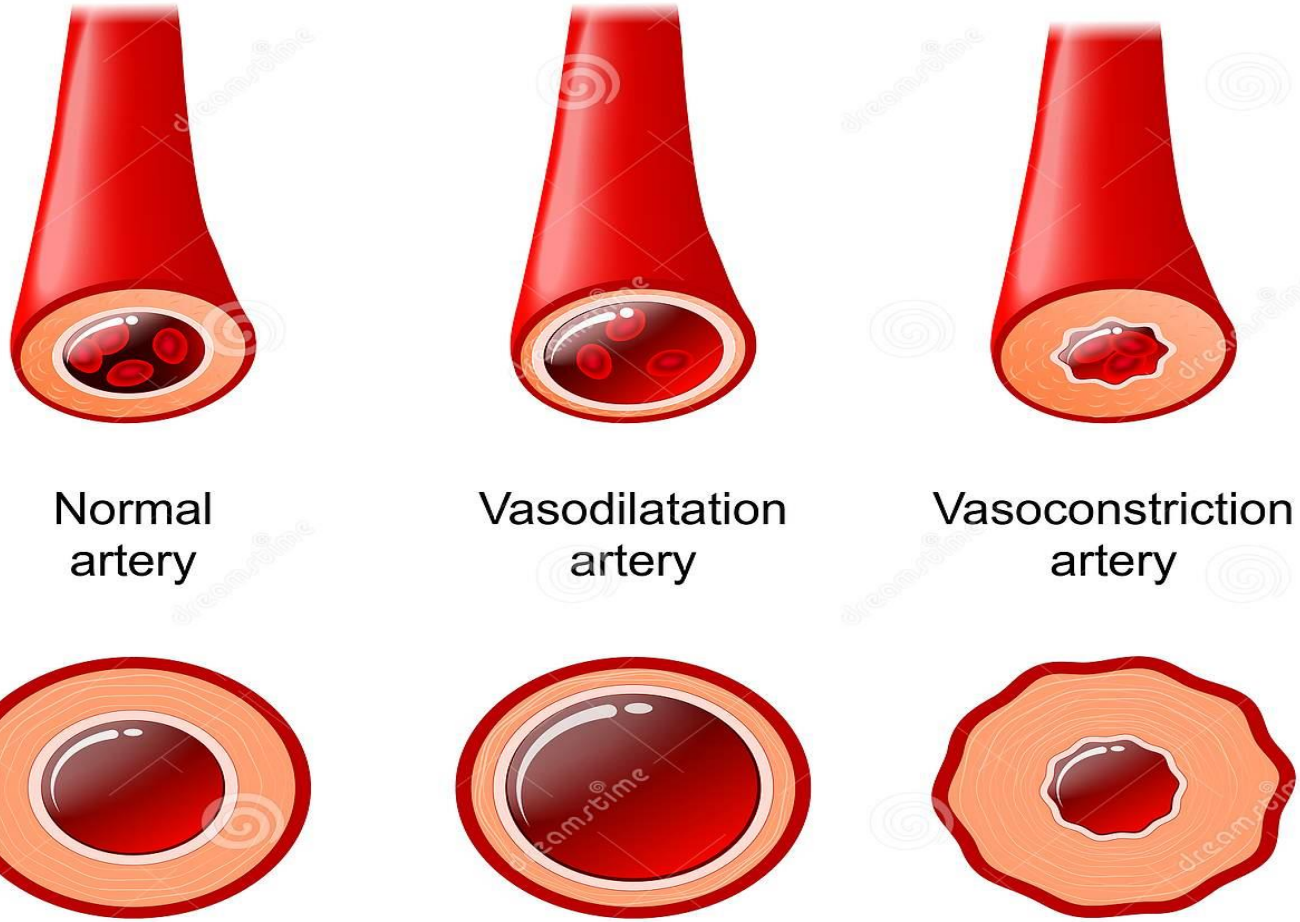
Phlebitis



Tachycardia	An abnormally rapid heart rate, u**sually over 100 beats per minute.**
Thrombosis	**Development of a blood clot** within a vessel.
Thrombus	A **blood clot** that forms within a blood vessel.
Vasodilation	**Widening** of blood vessels.
Vasoconstriction	**Narrowing** of blood vessels.



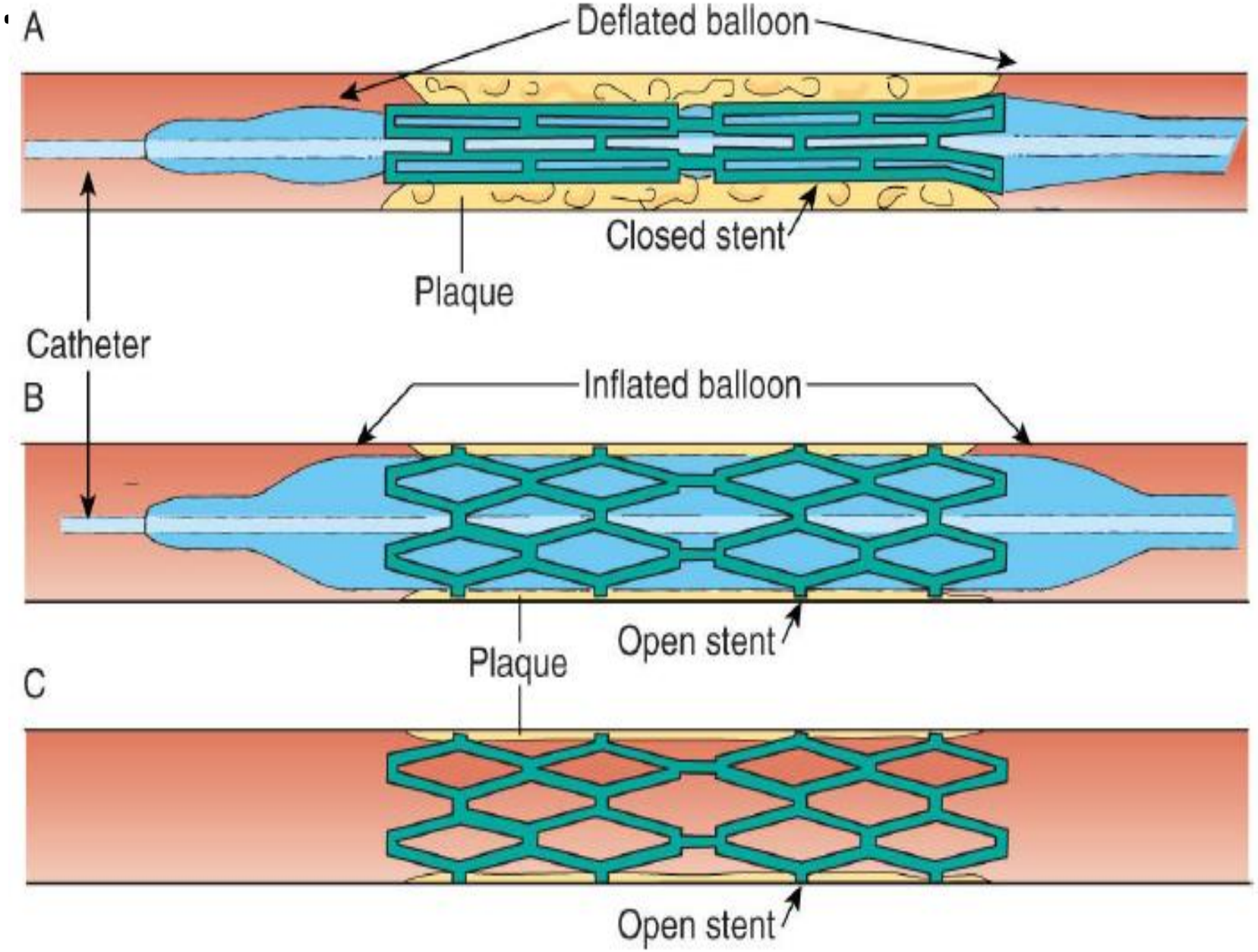
VASODILATATION and VASOCONSTRICTION



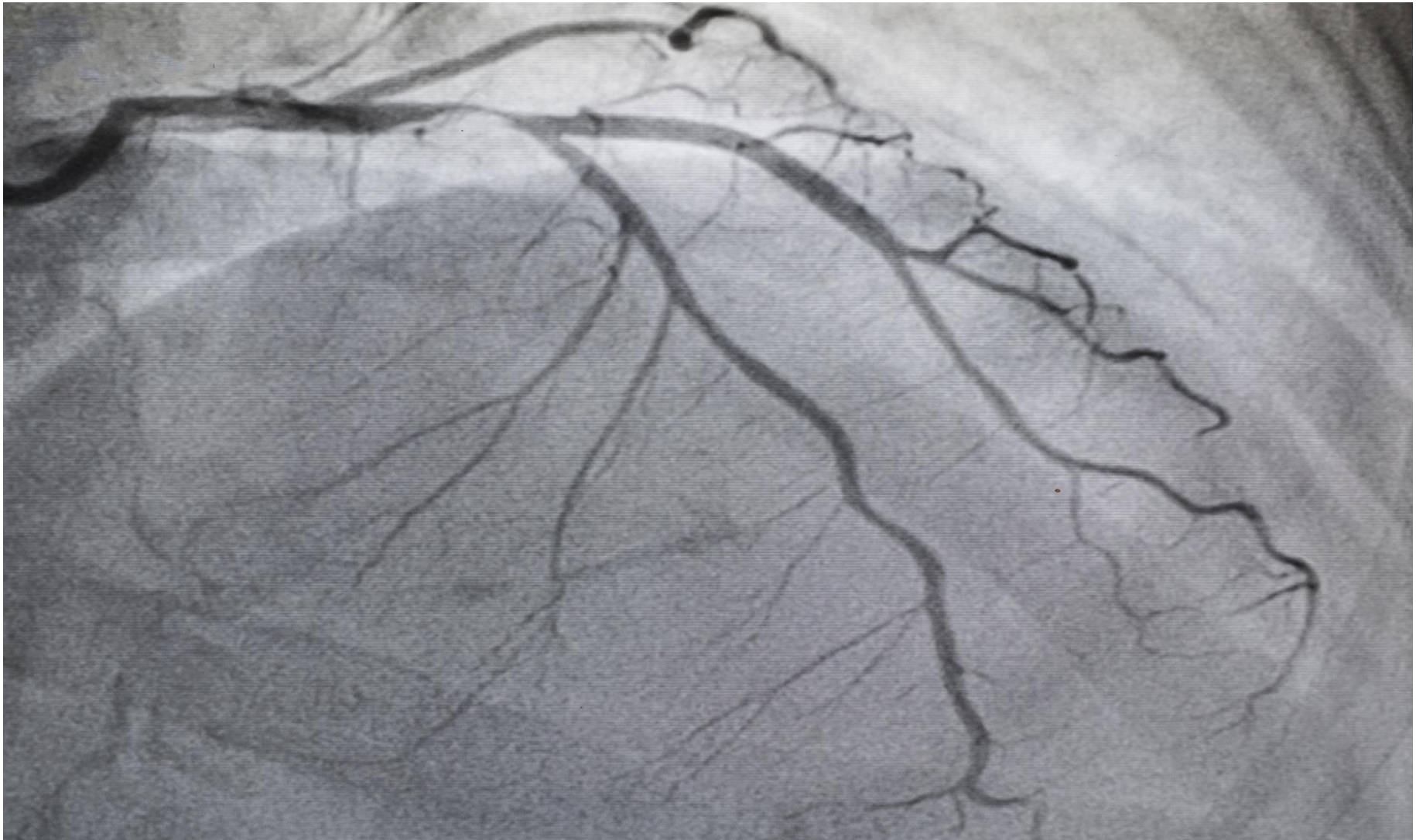
dreamstime.com
ID 154050222 © Designua

Diagnostic Tests, Treatments, and Surgical Procedures

Cardiac catheterization	Procedure where a **catheter is inserted into an artery** and guided into the **heart**; may be used for ***diagnosis*** of blockages or for ***treatment***
Angioplasty	A procedure that **reopens a narrowed vessel** and restores blood flow.
Angiography	**Radiography of a blood vessel** after injection of a contrast dye
Cardioversion	Use of **electrical shock** to restore the heart's normal rhythm.


A
Deflated balloon
Closed stent
Plaque
Catheter
B
Inflated balloon
Open stent
Plaque
C
Open stent

Angiography

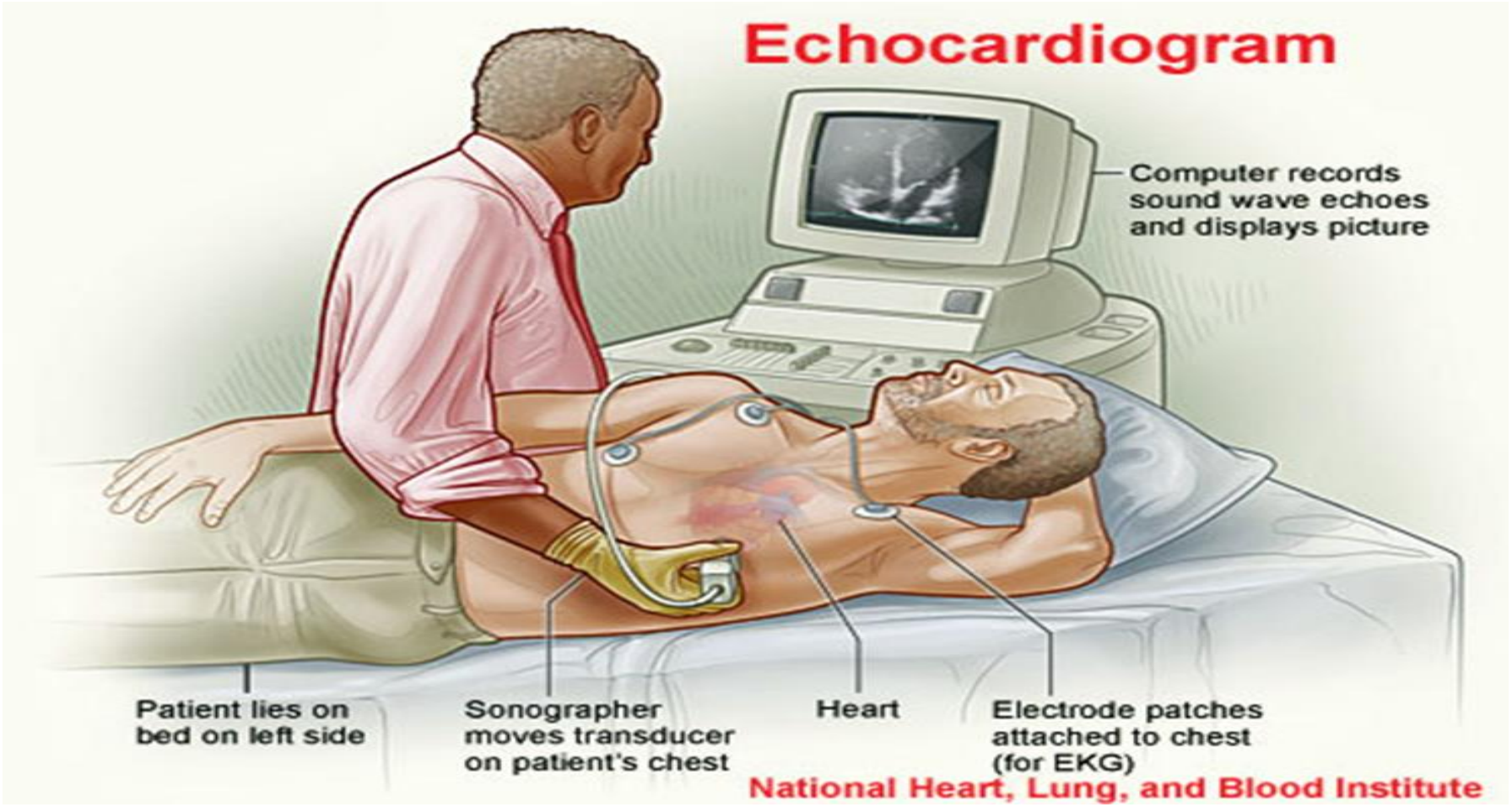


Cardioversion

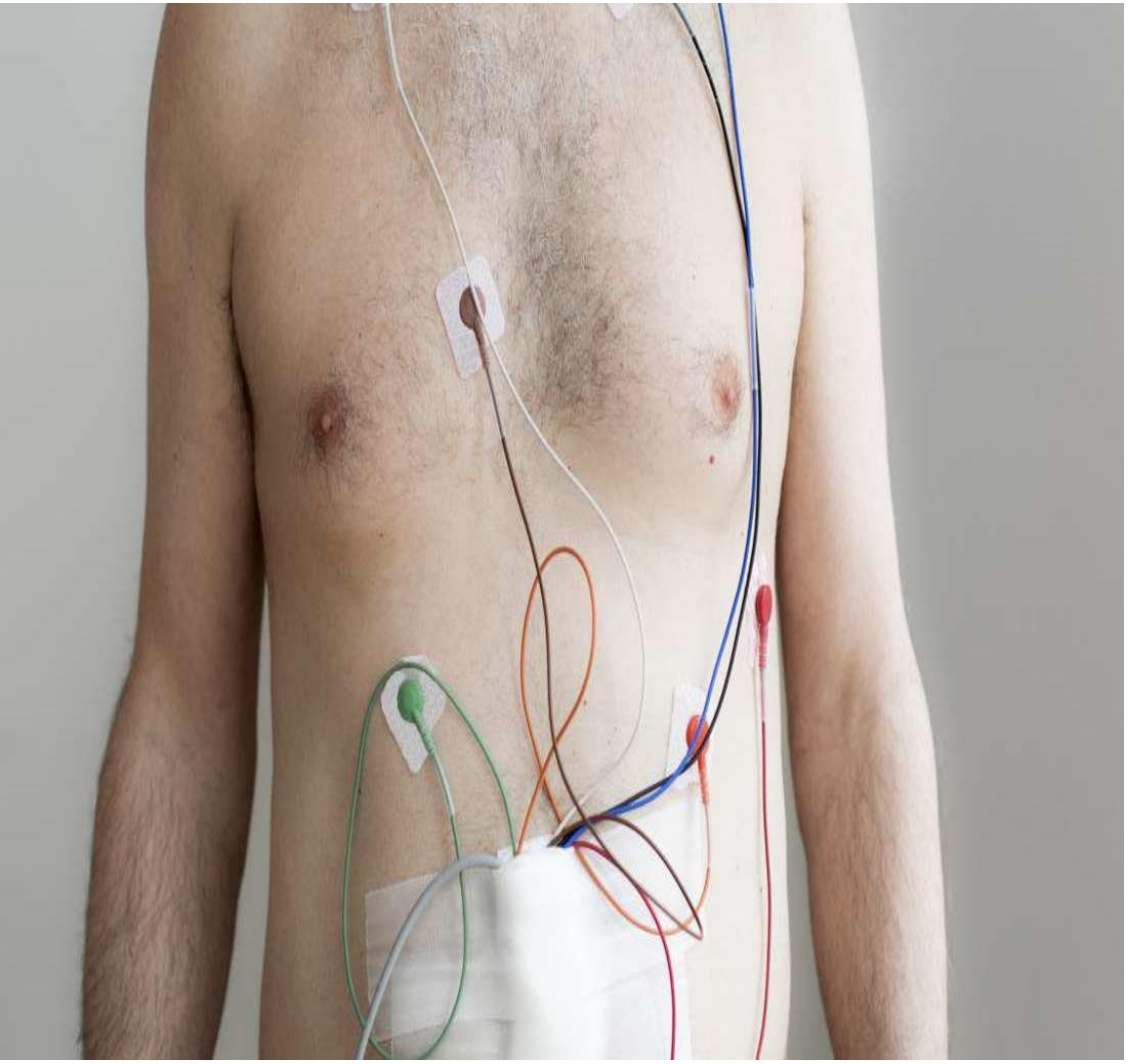


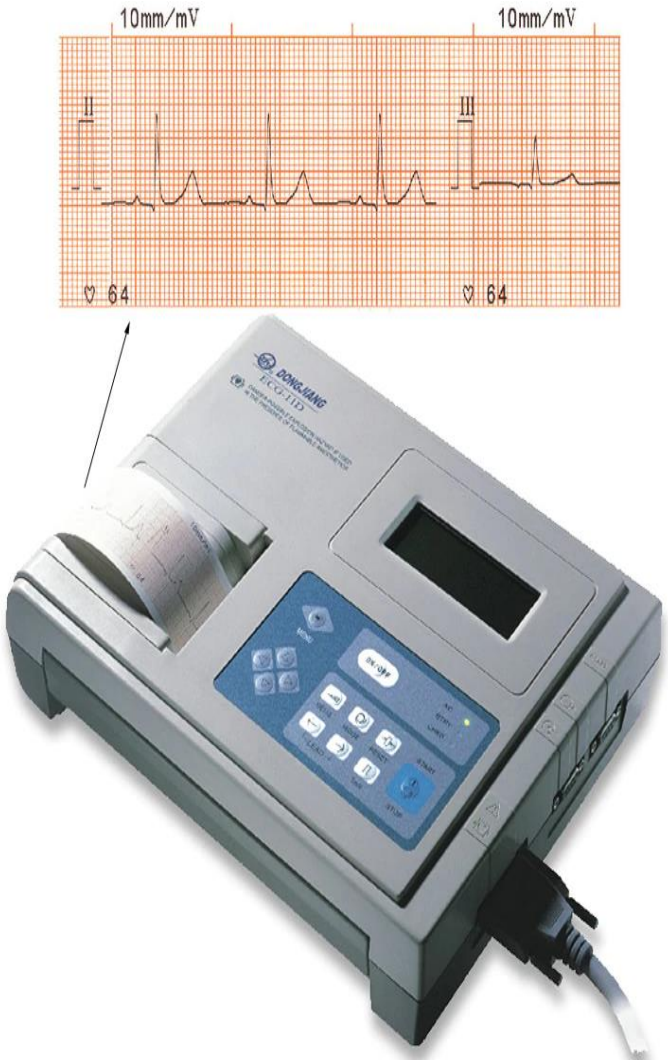
Doppler echocardiography	A method used to study the **rate** and **pattern of blood flow**
Electrocardiography (electrocardiogram) (ECG)	Study of the **electrical activity of the heart.**

Echocardiography



Electrocardiogram (ECG)

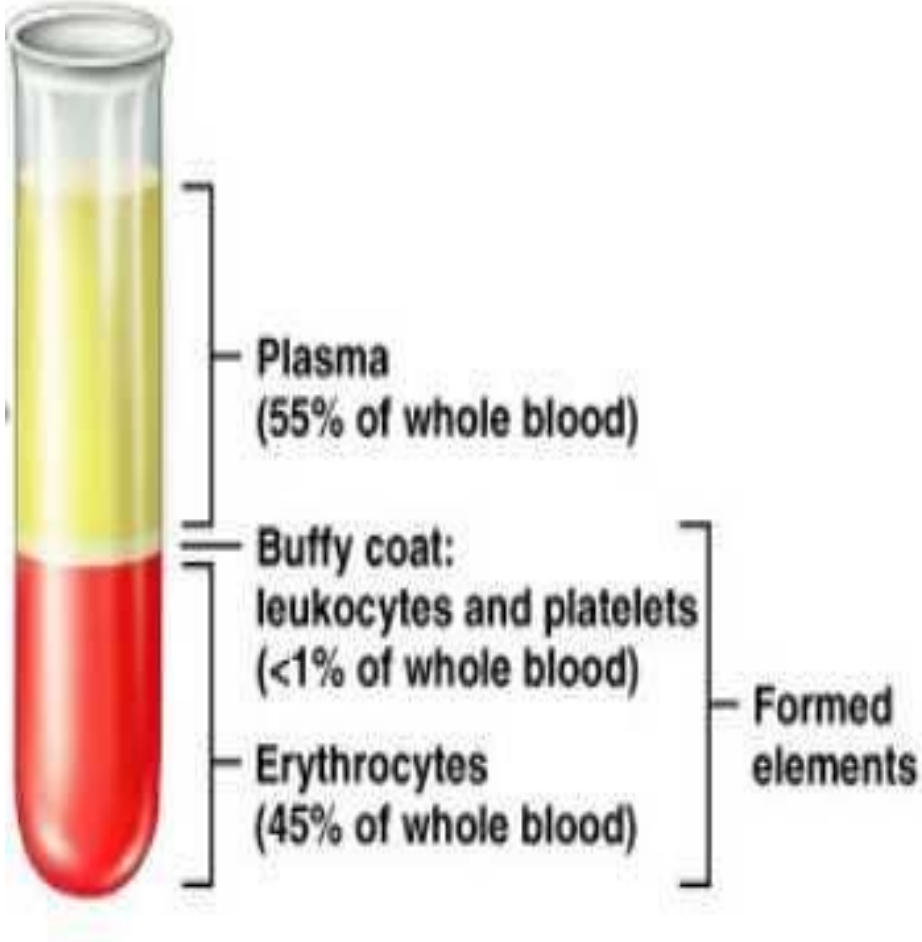




Blood

1-Blood is a fluid connective tissue made up of **plasma** (**55%**) and **formed elements** (**45%**).

Plasma is a clear, straw-colored fluid that is composed mostly of **water** (91%), along with proteins and other nutrients in solution.

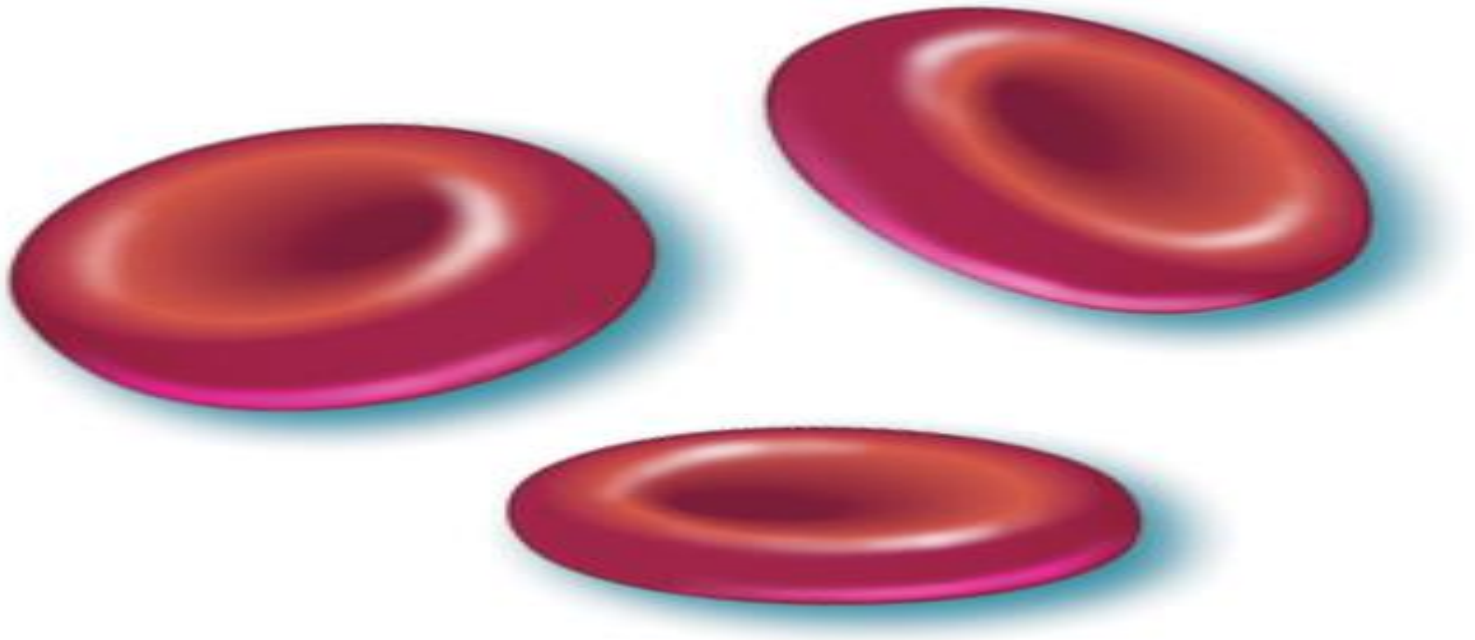


2-The **formed elements in** blood consist of:

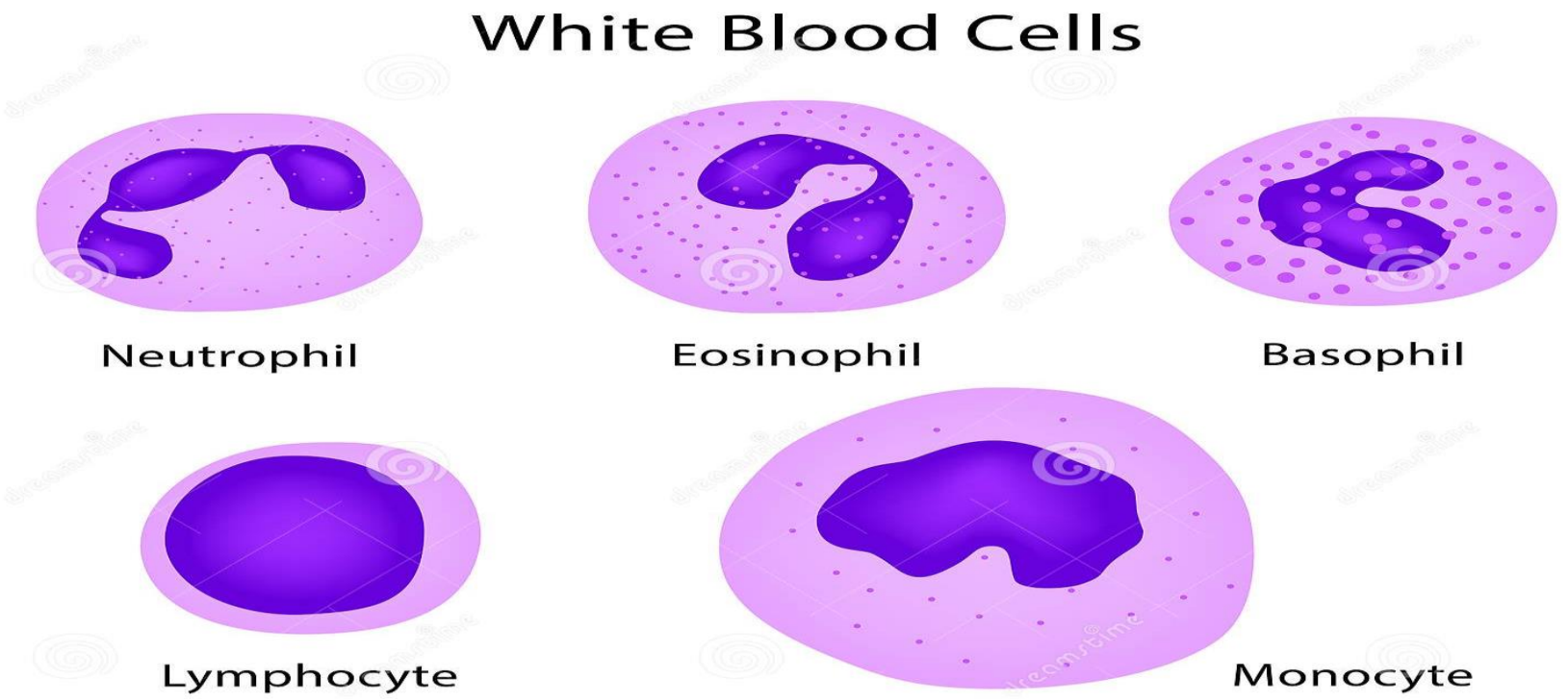
- **Red blood cells** (**RBCs**), also called **erythrocytes**.
- **White blood cells** (**WBCs**), also called **leukocytes**.
- **Platelets**, also called **thrombocytes**.

3-The following list identifies the structure and function of each element:

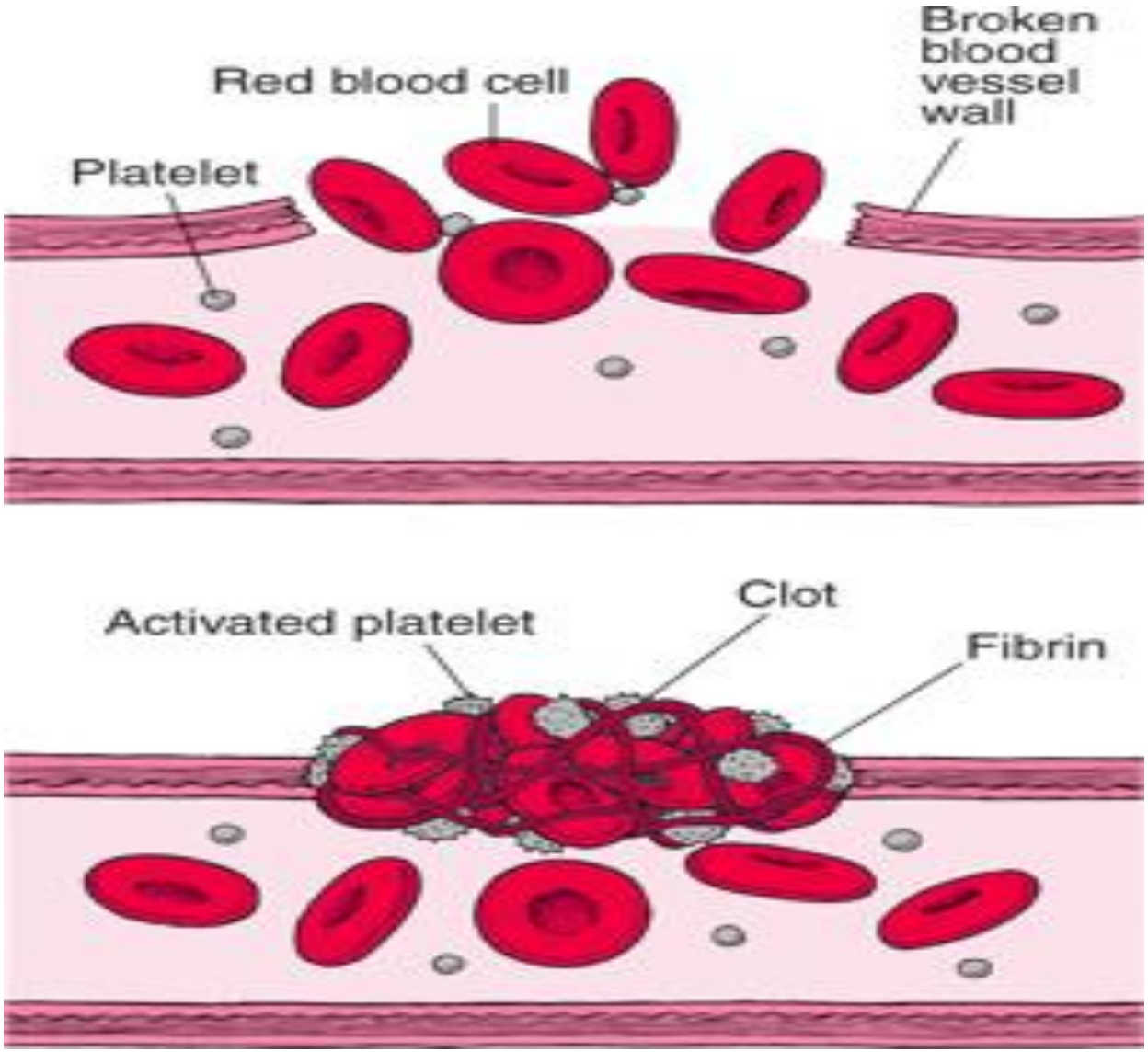
A-RBCs: The main function of RBCs is to transport oxygen.



B-WBCs: WBCs are the body's main **defense** against harmful organisms; there are **five types** of leukocytes: **neutrophils**, **eosinophils**, **basophils**, **lymphocytes**, and **monocytes**.



C-Platelets: These cell play an important role in the **blood clotting process**.



Blood Groups

1-The four major blood groups (types) are **A**, **B**, **AB**, and **O**.

- Blood type **compatibility** is an important consideration when blood is **transfused** from one person to another.

Blood Type	Can Donate to	Can Receive from
A	A or AB only	A or O only
B	B or AB only	B or O only
AB (universal recipient)	AB only	A, B, AB, O
O (universal donor)	A, B, AB, O	O only

Blood Disorders

There are three major types blood disorders:

1-Anemia is a condition marked by a **deficiency of RBCs** or a **low level of Hb**.

2-Leukemia is characterized by an **increased number of WBCs.**

3-Clotting disorders include **hemophilia** (hereditary bleeding disorder) and **thrombocytopenia** (an insufficient number of thrombocytes).

Drugs used to treat cardiovascular disorders

Drugs	Use (action)
Anticoagulant	Any substance that **prevents blood clotting.**
Antihypertensive drug	A drug that **reduces high blood pressure** like diuretics.
Thrombolytic	Drug **dissolve a blood clot.**
Antiarrhythmic	Drugs that **corrects cardiac arrhythmias.**
Antiplatelet drugs (like aspirin)	Antiplatelet drugs **decrease platelet aggregation** and inhibit thrombus formation.
Antihyperlipidemic agents	Drugs used to **lower the abnormally high blood levels of fatty** substances (lipids).


ASPIRIN

Thank You