

UPDAAN



2025

LIFE PROCESSES

Biology

Lecture - 08

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Topics to be covered

- 1 Structure and working of heart
- 2 Double circulation
- 3 Lymph
- 4 MCQ practice and Homework





Question of the Day



notes

• Largest artery → Aorta

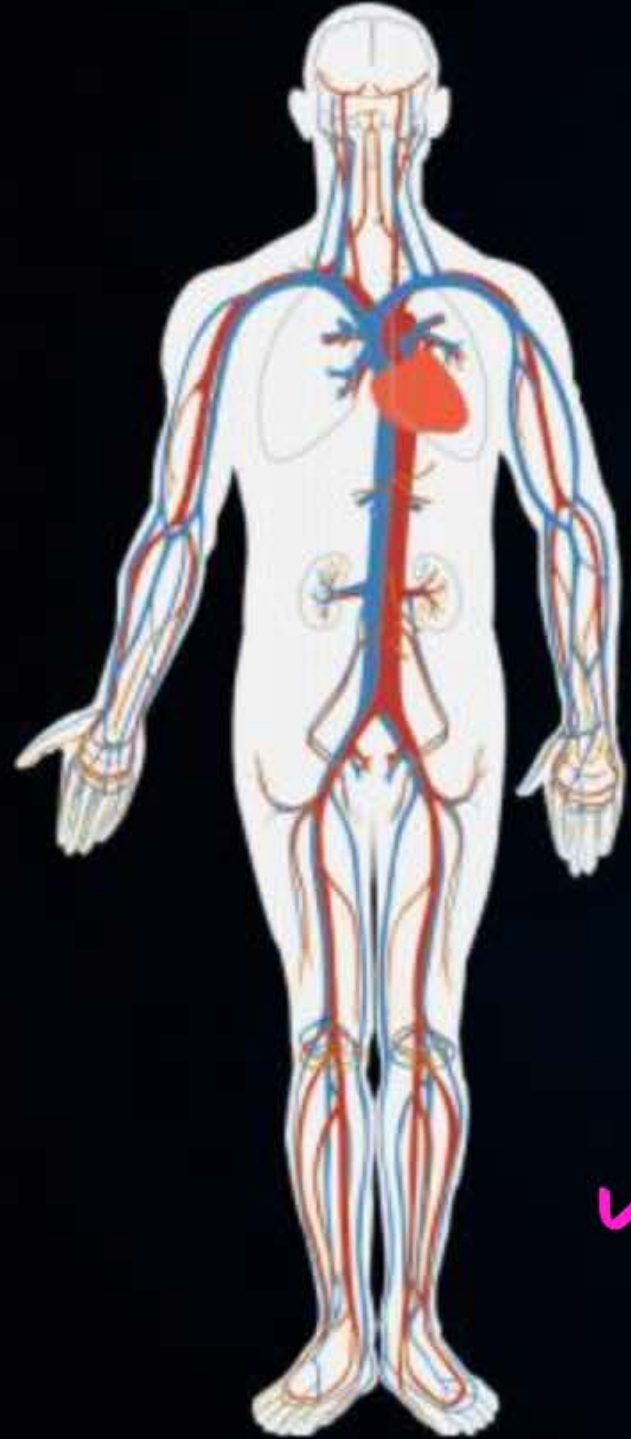
• Largest Vein → Vena Cava

• Only artery which carries deoxygenated blood ^{ox} → Pulmonary artery

• Only vein which carries oxygenated blood ^{Deox} → Pulmonary vein

Human circulatory system

Transportation



- **Blood**

Red fluid connective tissue which helps to transport substances

- **Blood vessels**

Tubes in which blood flows

- **Heart**

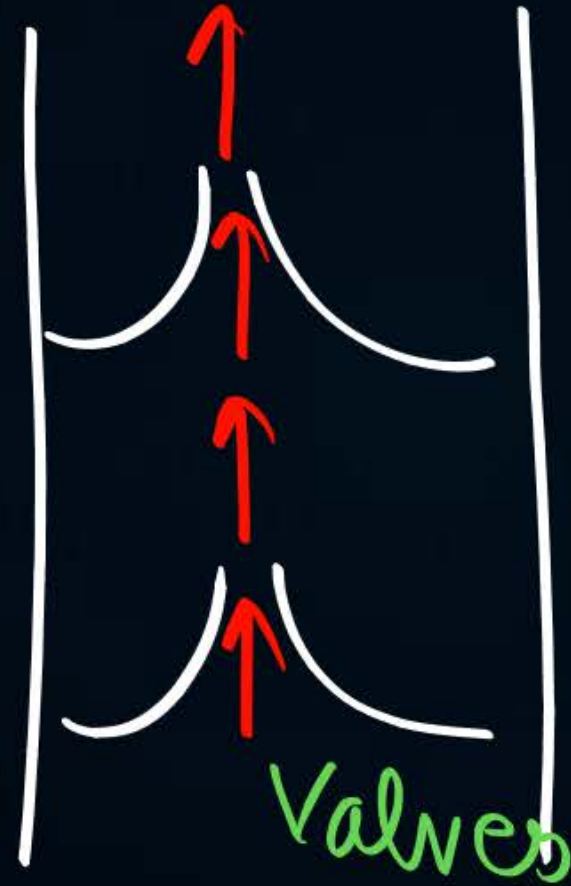
Pumping organ

Question

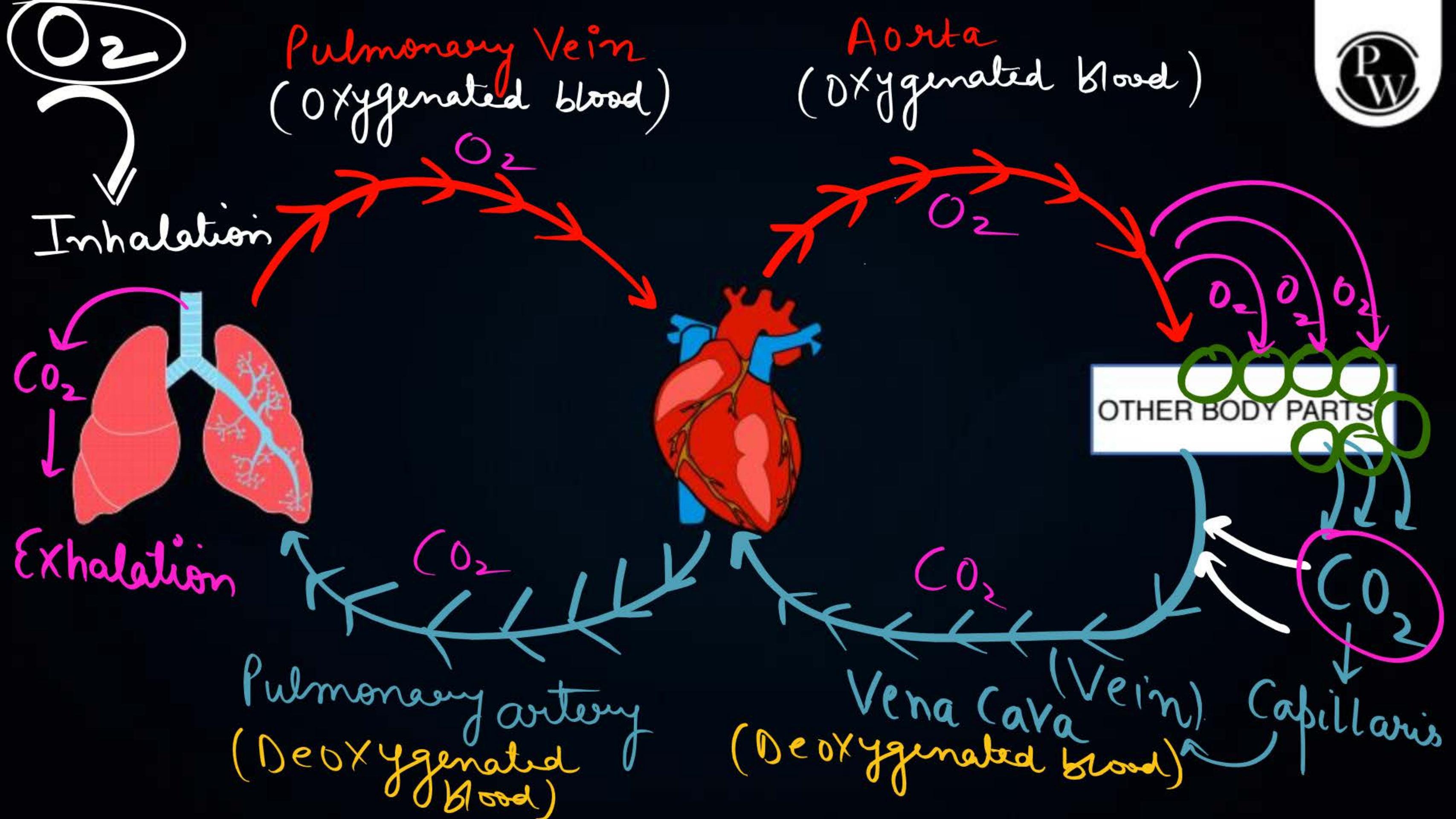


Which of the following will the presence of valves?

- A Aorta (artery)
- ☒ B Vena cava → vein
- C Pulmonary artery
- D Capillaries



→ Veins
Veins



#Ch



Question



Which vein carries deoxygenated blood back to heart?

A Aorta (Artery)

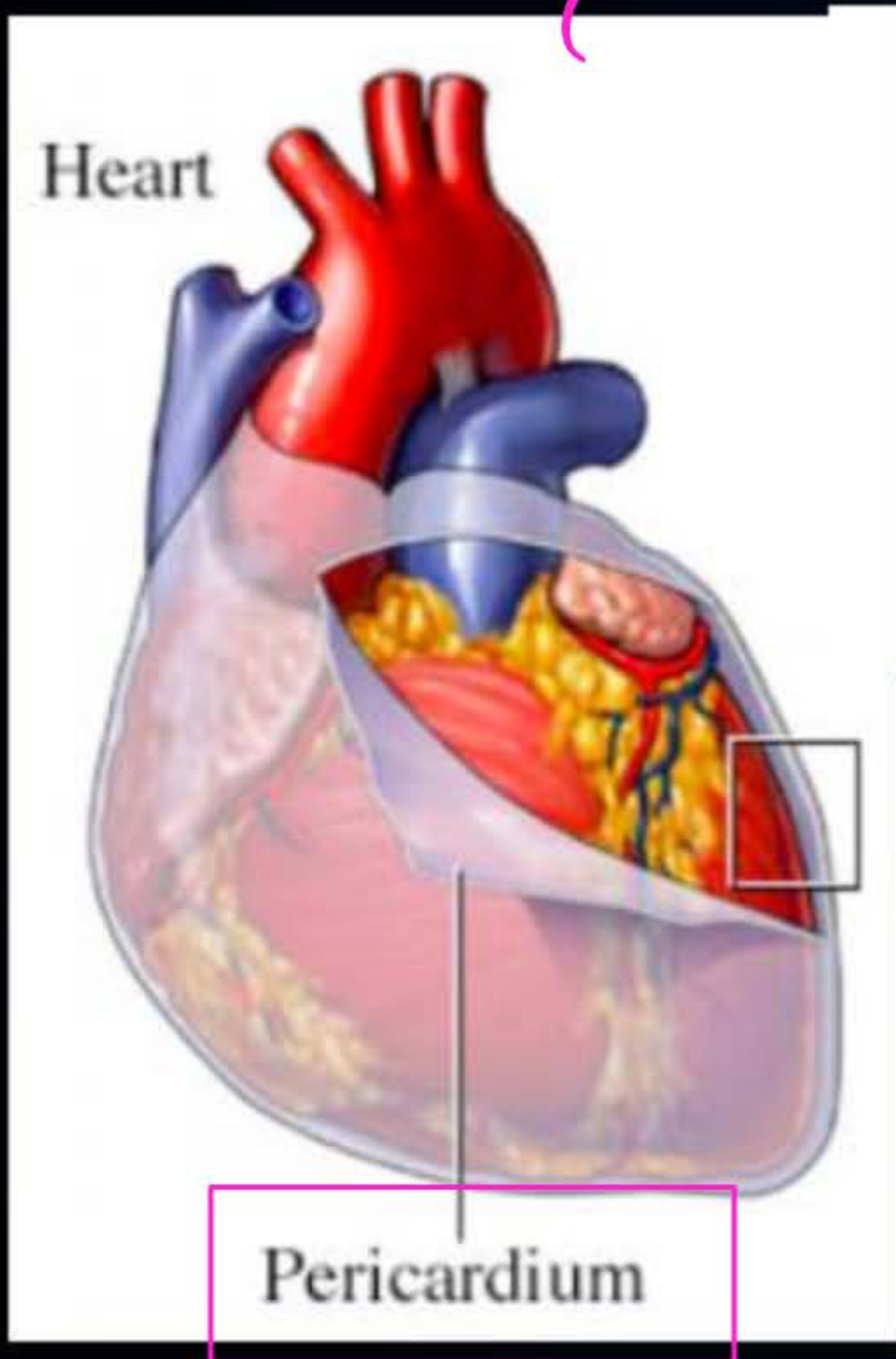
☒ B Vena cava → Veins ✓

C Pulmonary artery ✗

D Pulmonary vein ✓
↓ lungs → Towards the heart



Our pump - The Heart

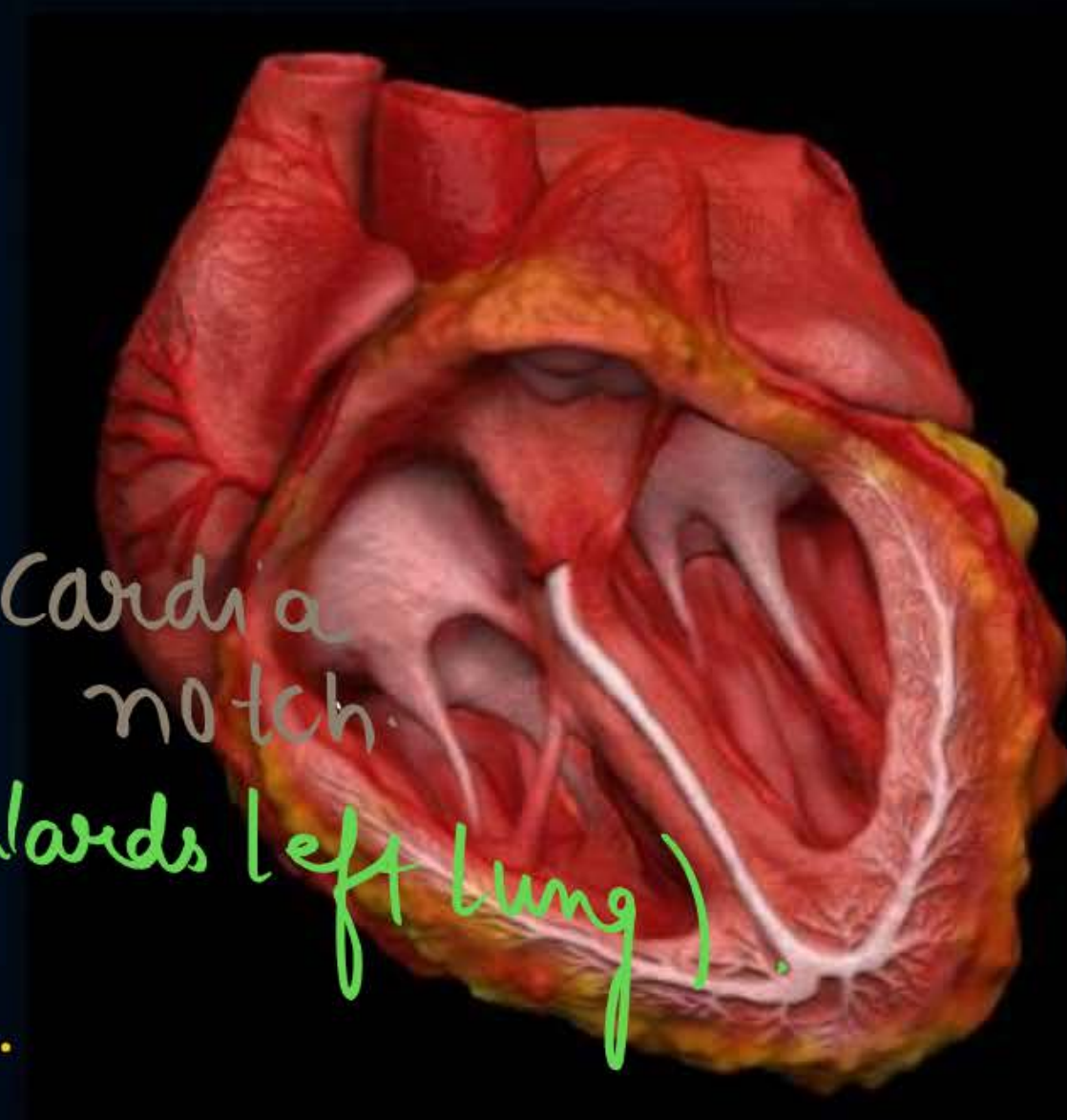


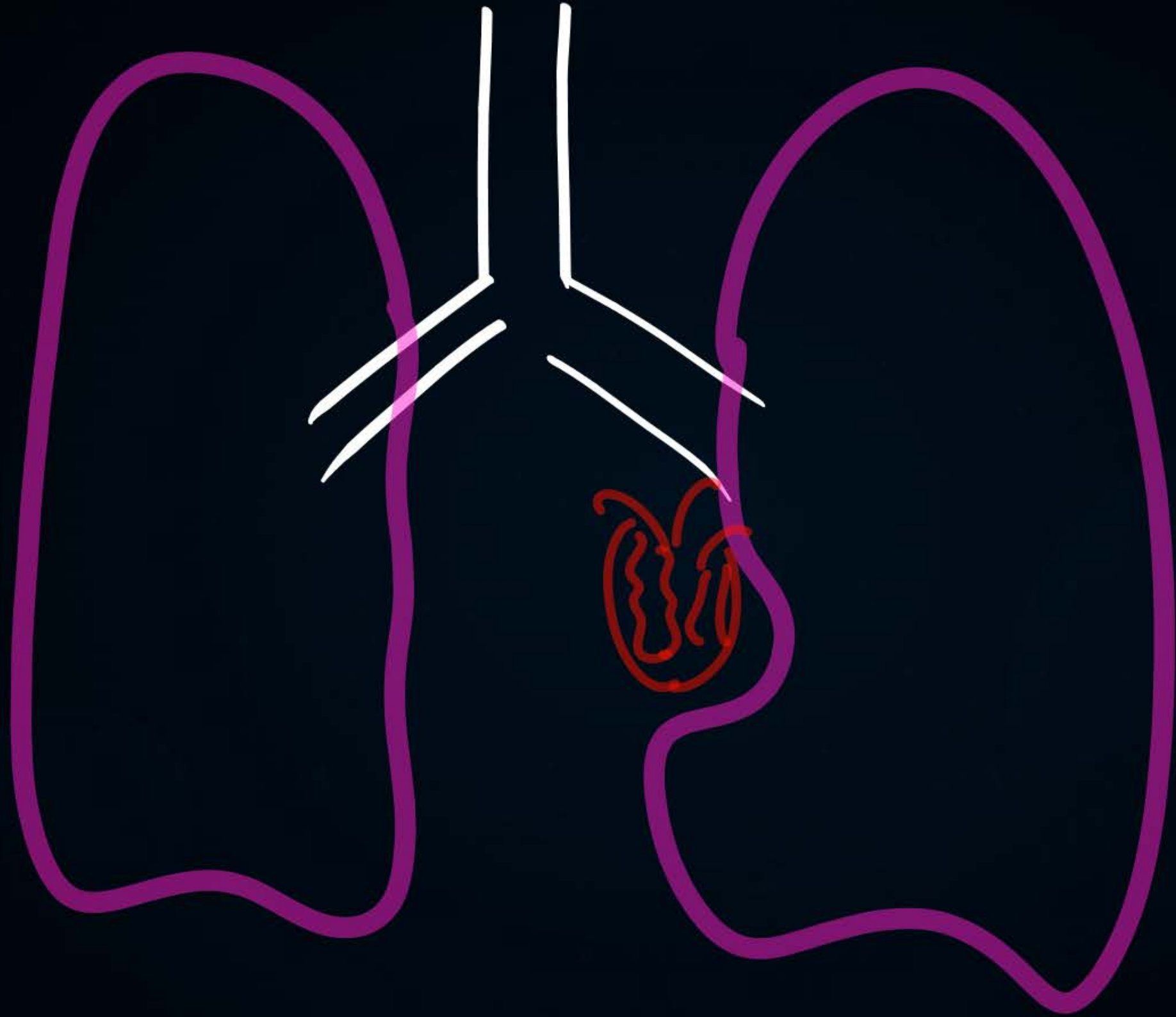
→ 230gm-600gm

→ InVoluntary Muscles
(Can't Control)

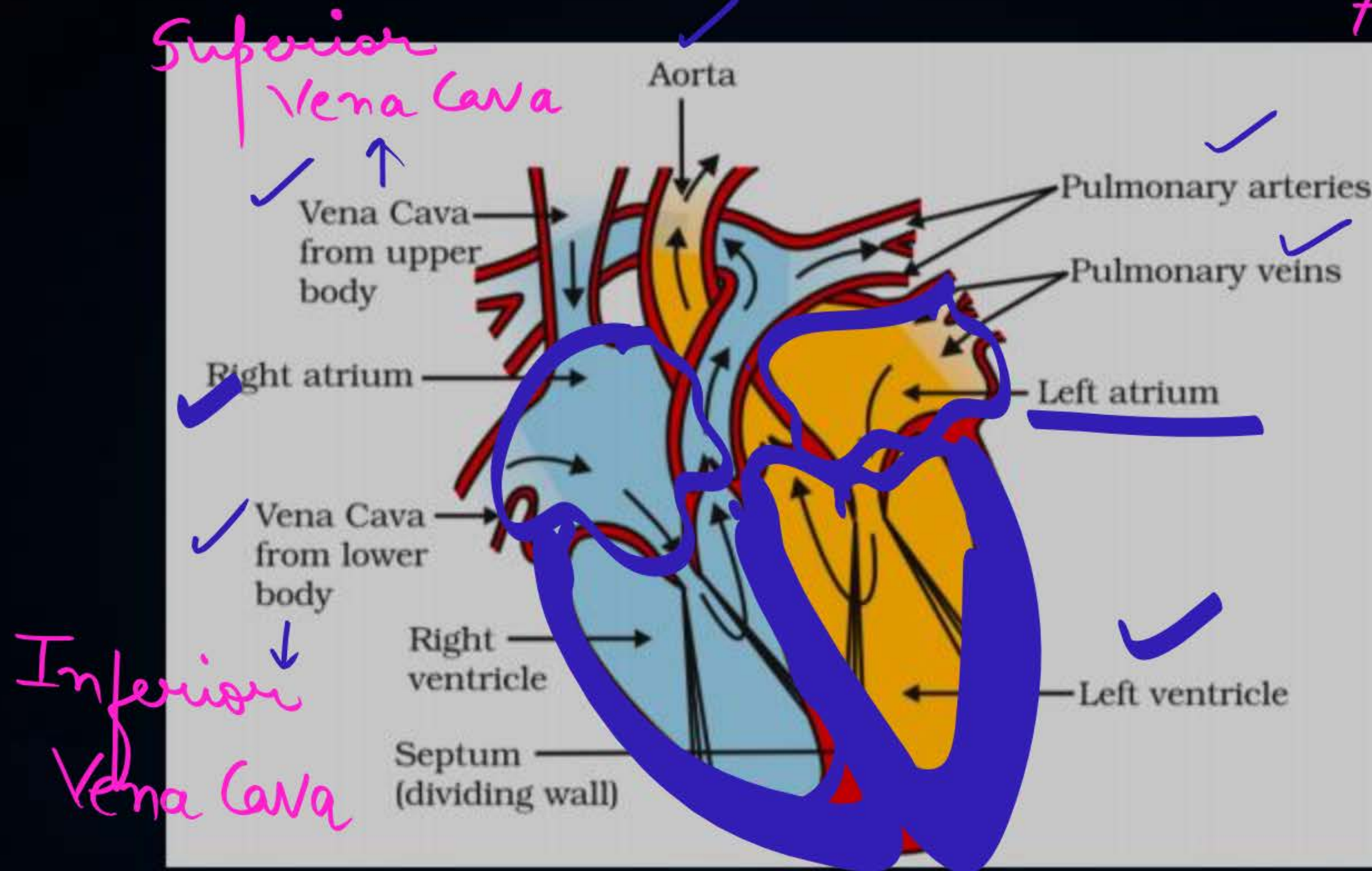
- Made up of cardiac muscles

- As big as fist and located in chest cavity (Tilted Towards left lung)
- Help in pumping of the blood ✓

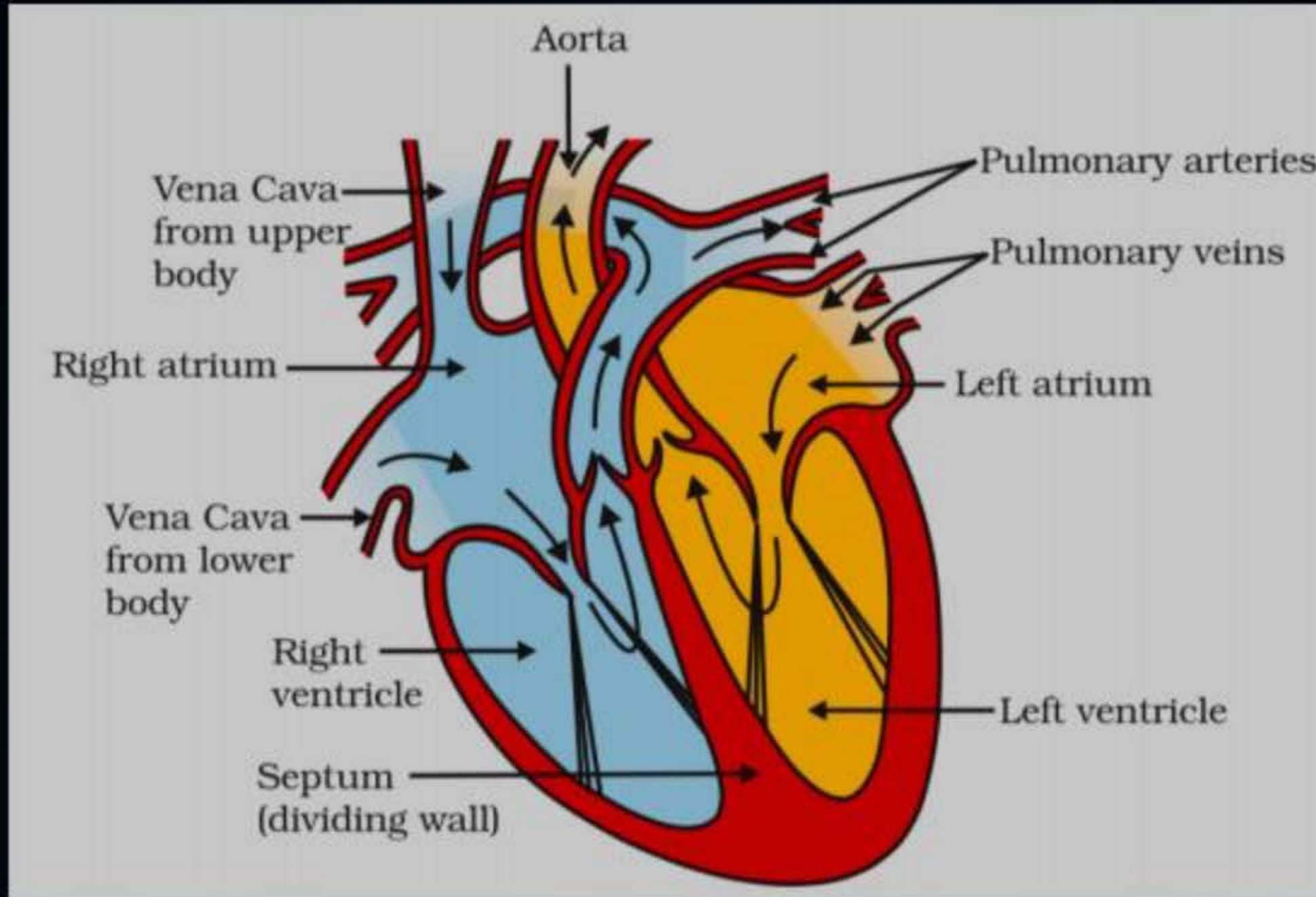




#imp



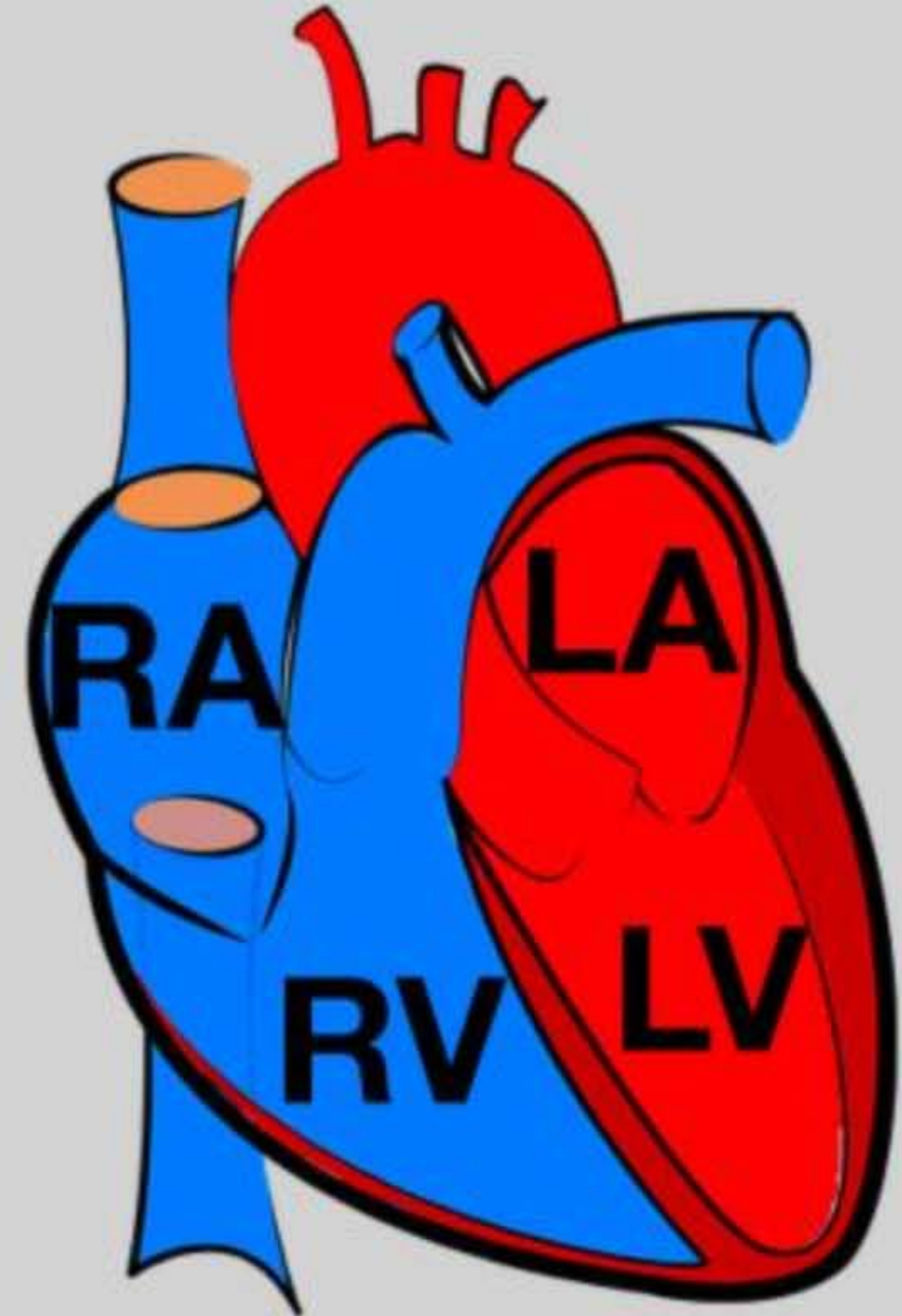
#imp

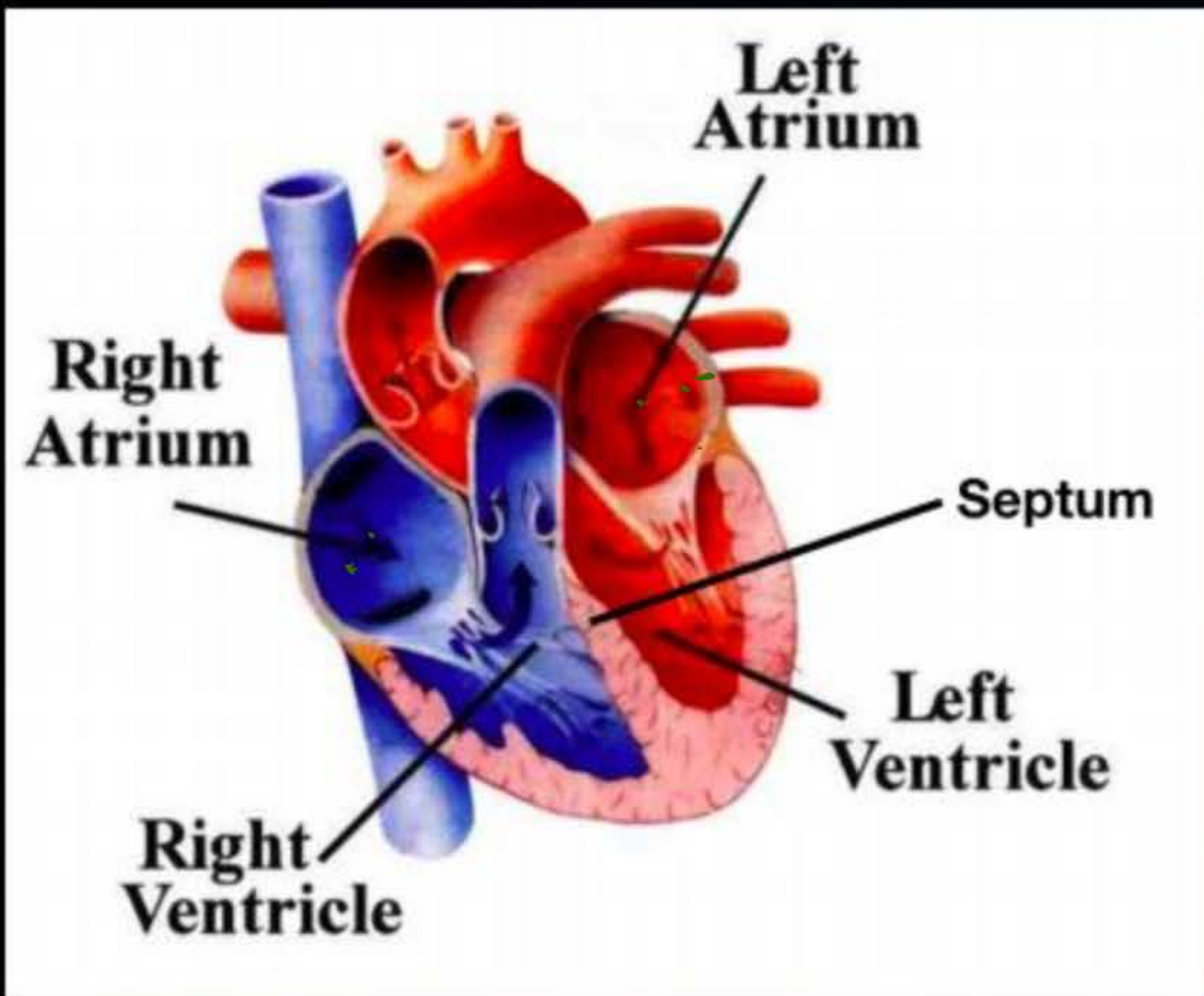


Four Chambers — (4)



	Right	Left
Atria	Right Atrium (RA)	Left Atrium (LA)
Ventricles	Right Ventricle (RV)	Left Ventricle (LV)





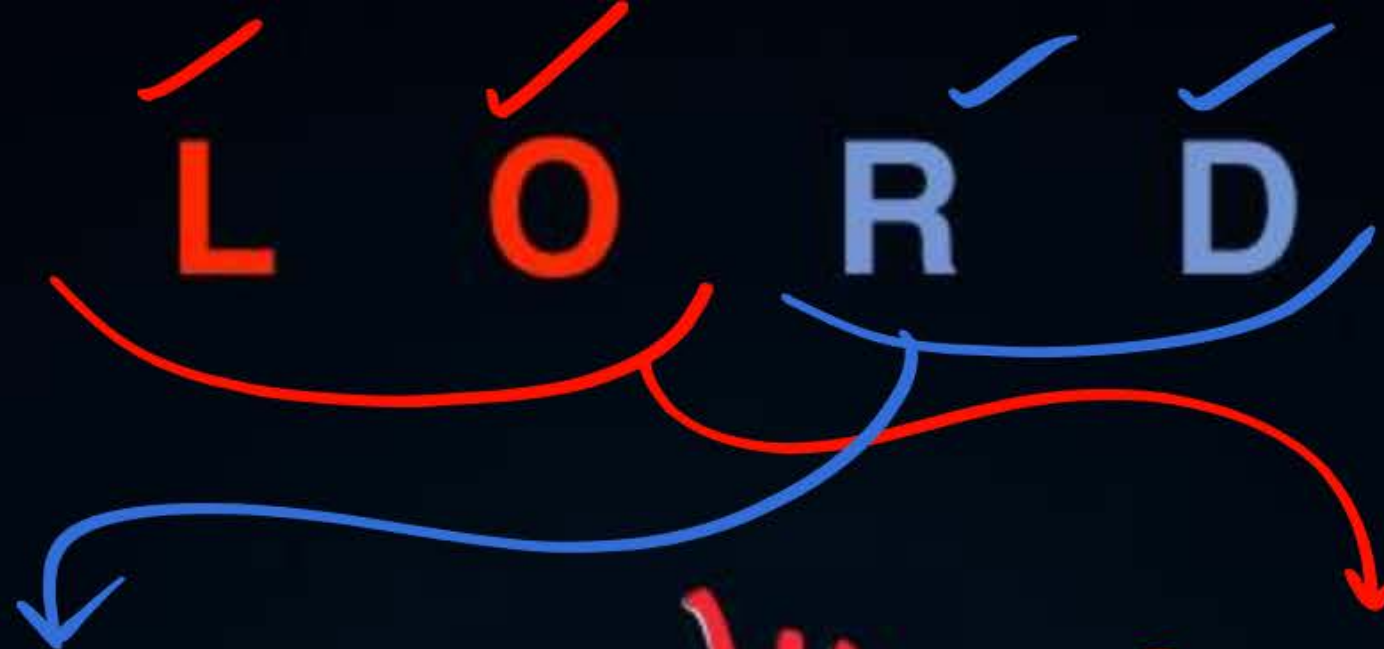
ATRIUM/ATRIA(pl)/ AURICLE

✓ Upper chambers
Thin walled ✓
✓ Receives blood

VENTRICLES

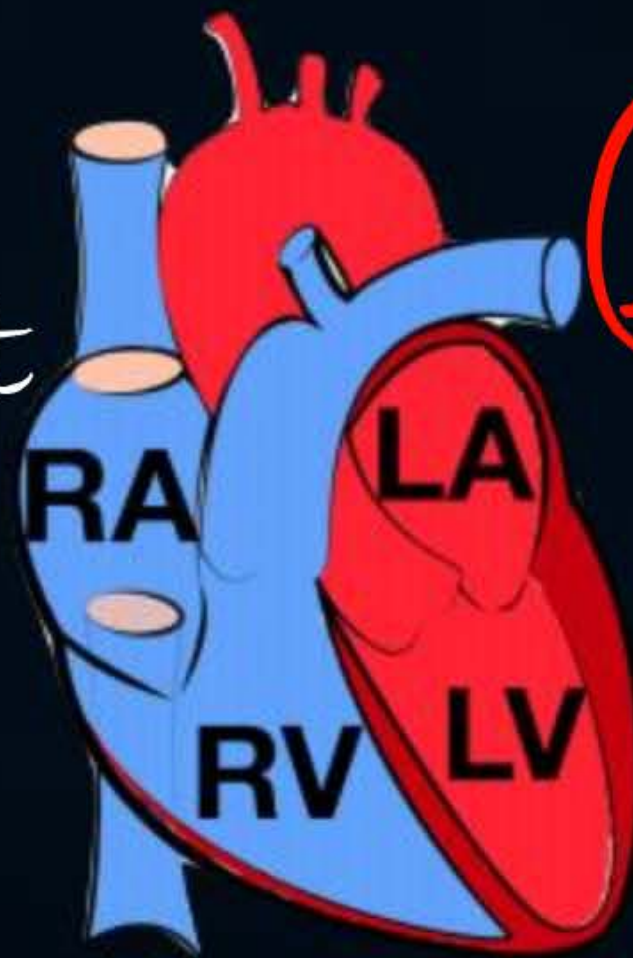
✓ Lower chamber
Thick walled ✓
✓ Pumping of blood

↓
Pressure
↓
Thick Wall



#Ch

Right Side of the heart
deals with the
Deoxygenated blood

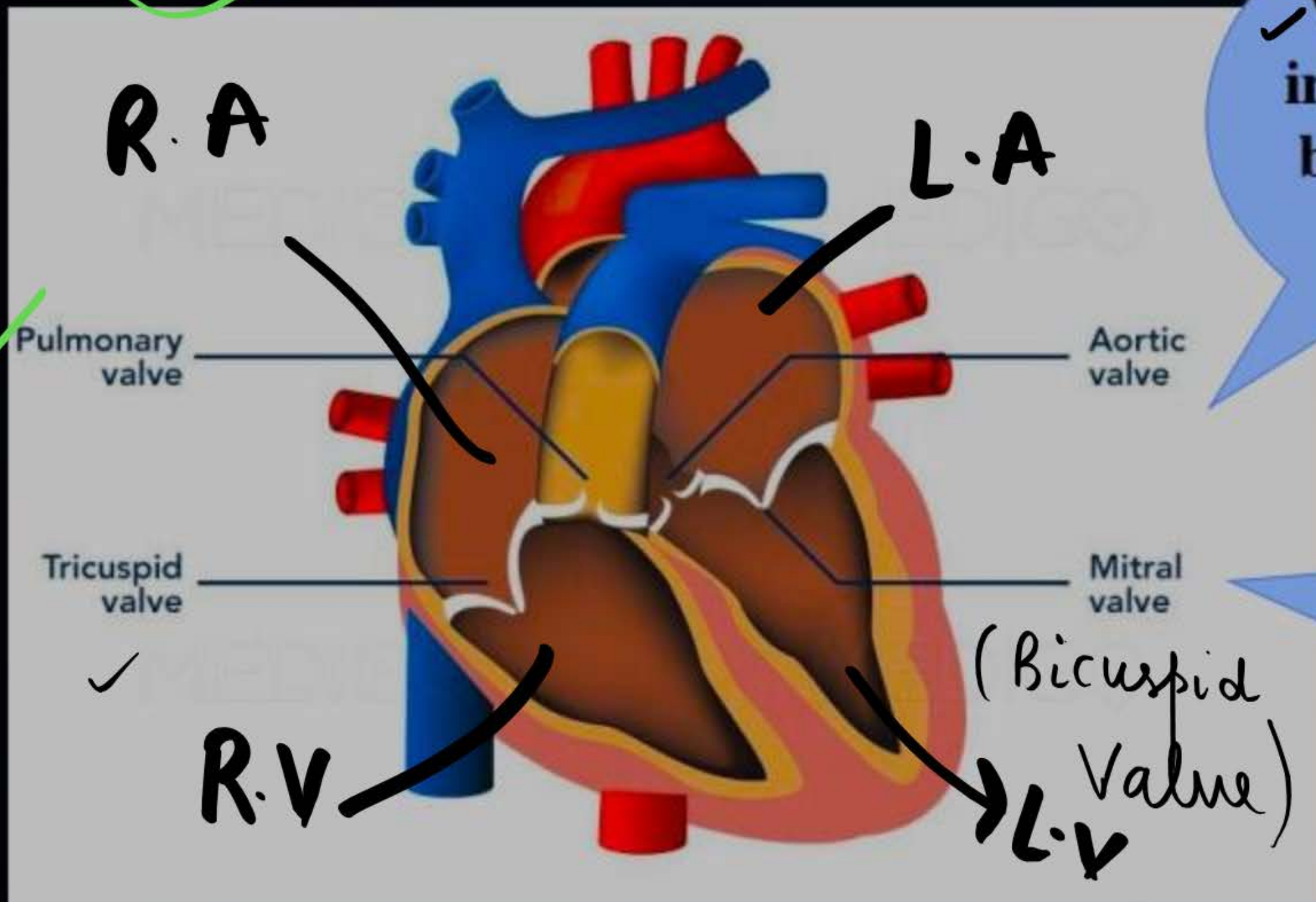


Left Side of the heart
deals with Oxygenated
blood.

Human Heart

Tri → right

Heart ✓



✓ Valves present in heart prevents back flow of the blood

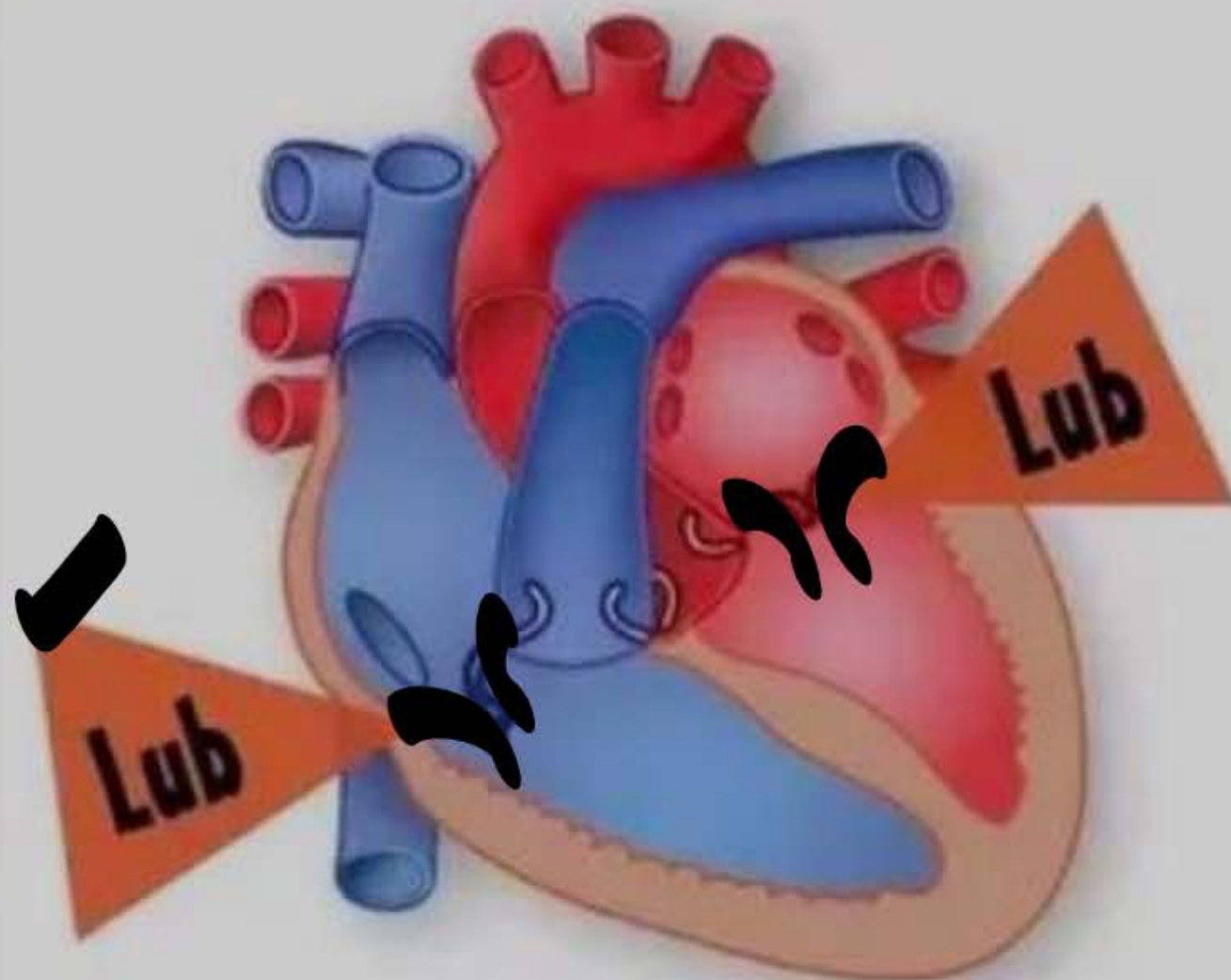
Opening and closing of valves causes sound ✓

@newt_sch



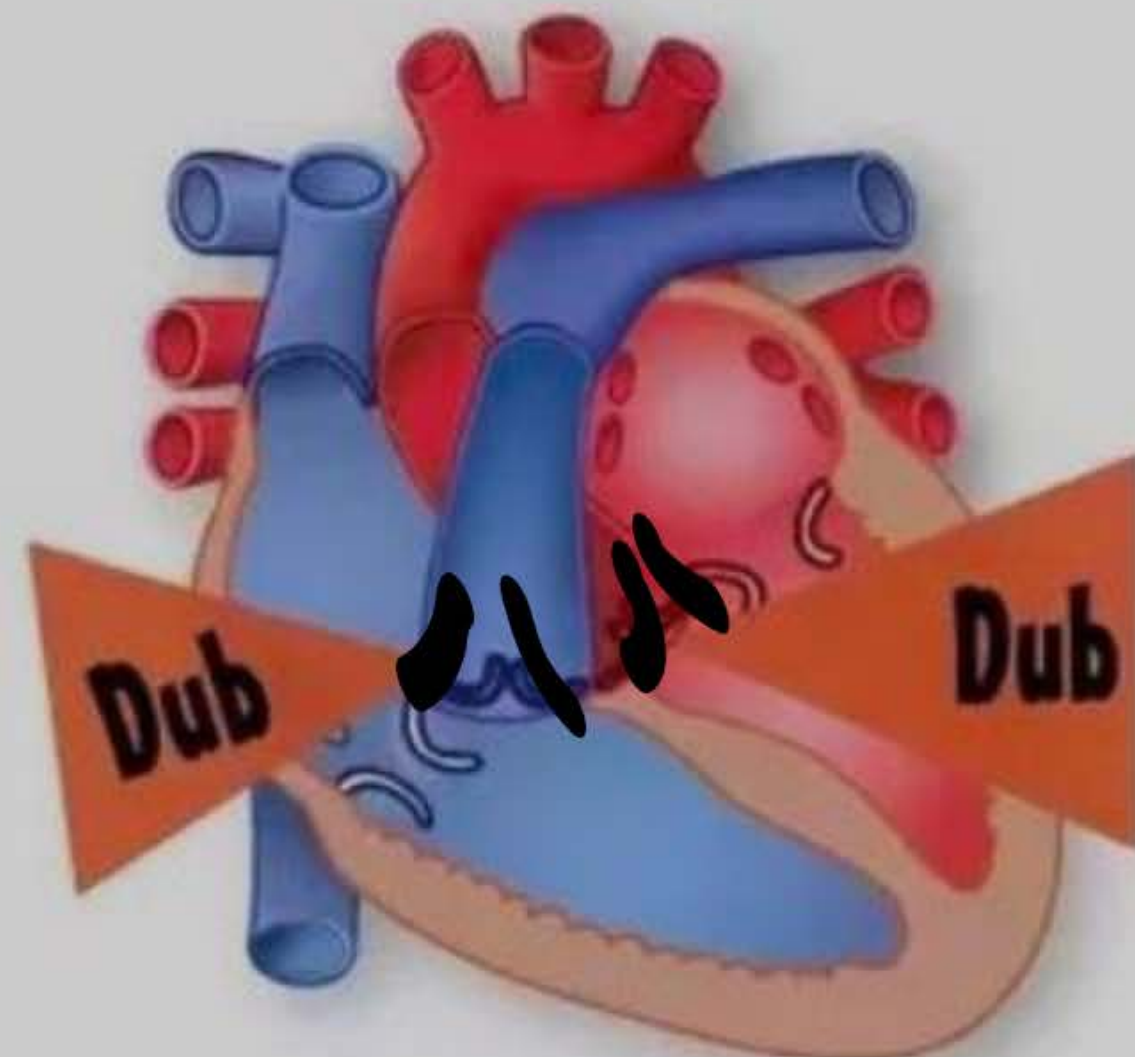
Mere ko toh aisa dhak dhak ho rela hai re

Normal Heart "Lub"

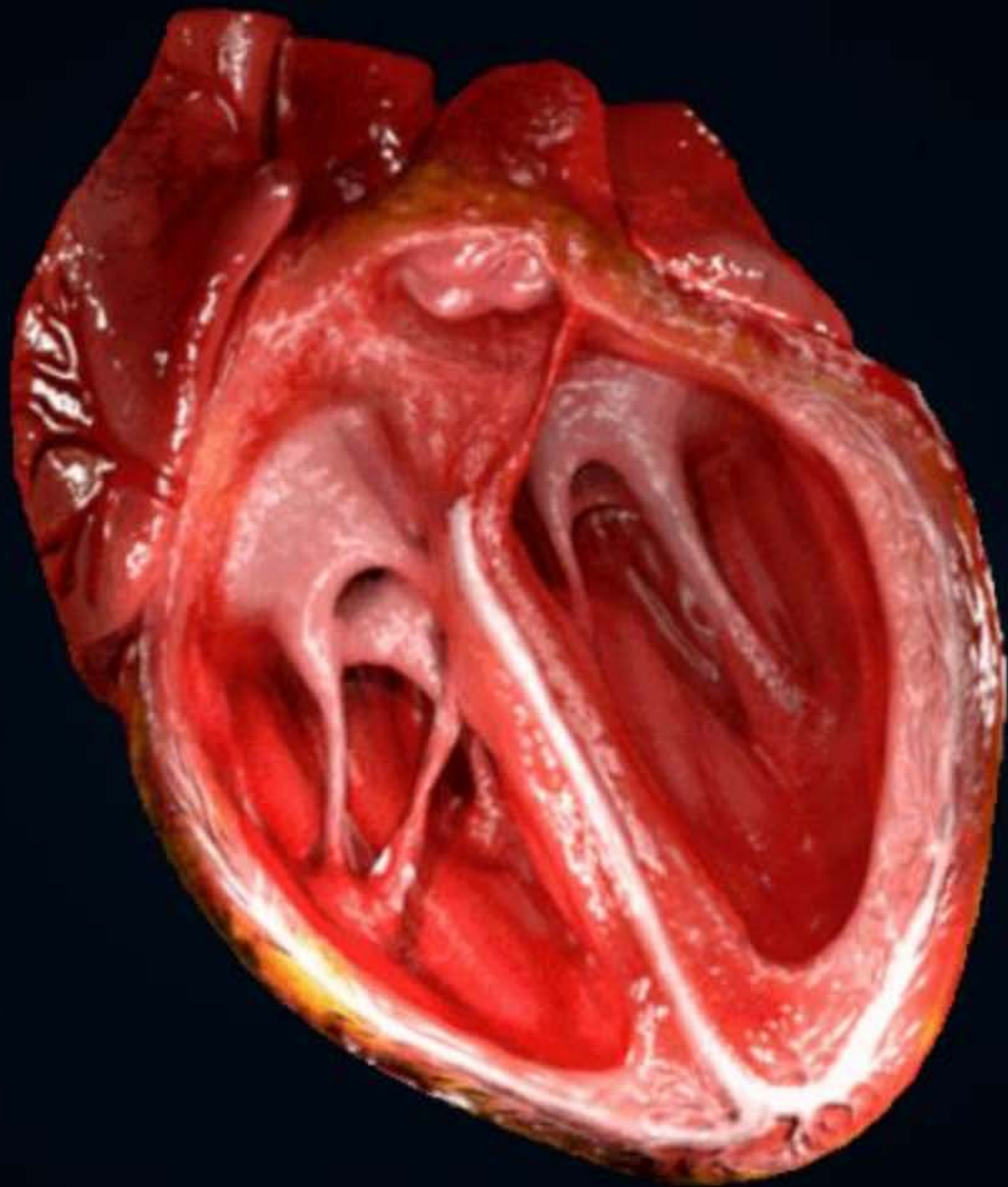


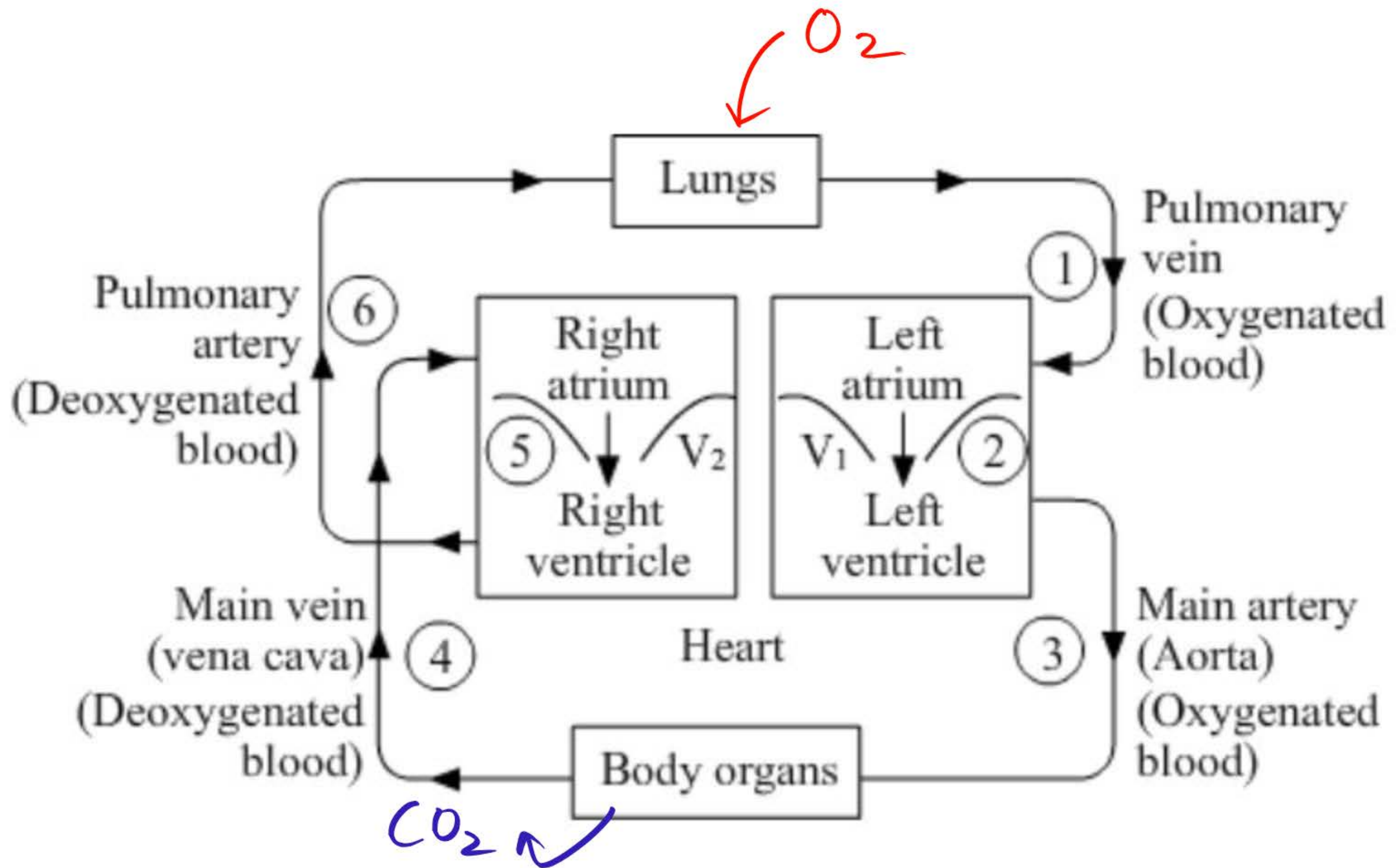
Closing of tricuspid and bicuspid valve
"LUB"

Normal Heart "Dub"



Closing of pulmonary and aortic valve
"DUB"





Systole → Contraction

Diastole → Relaxation

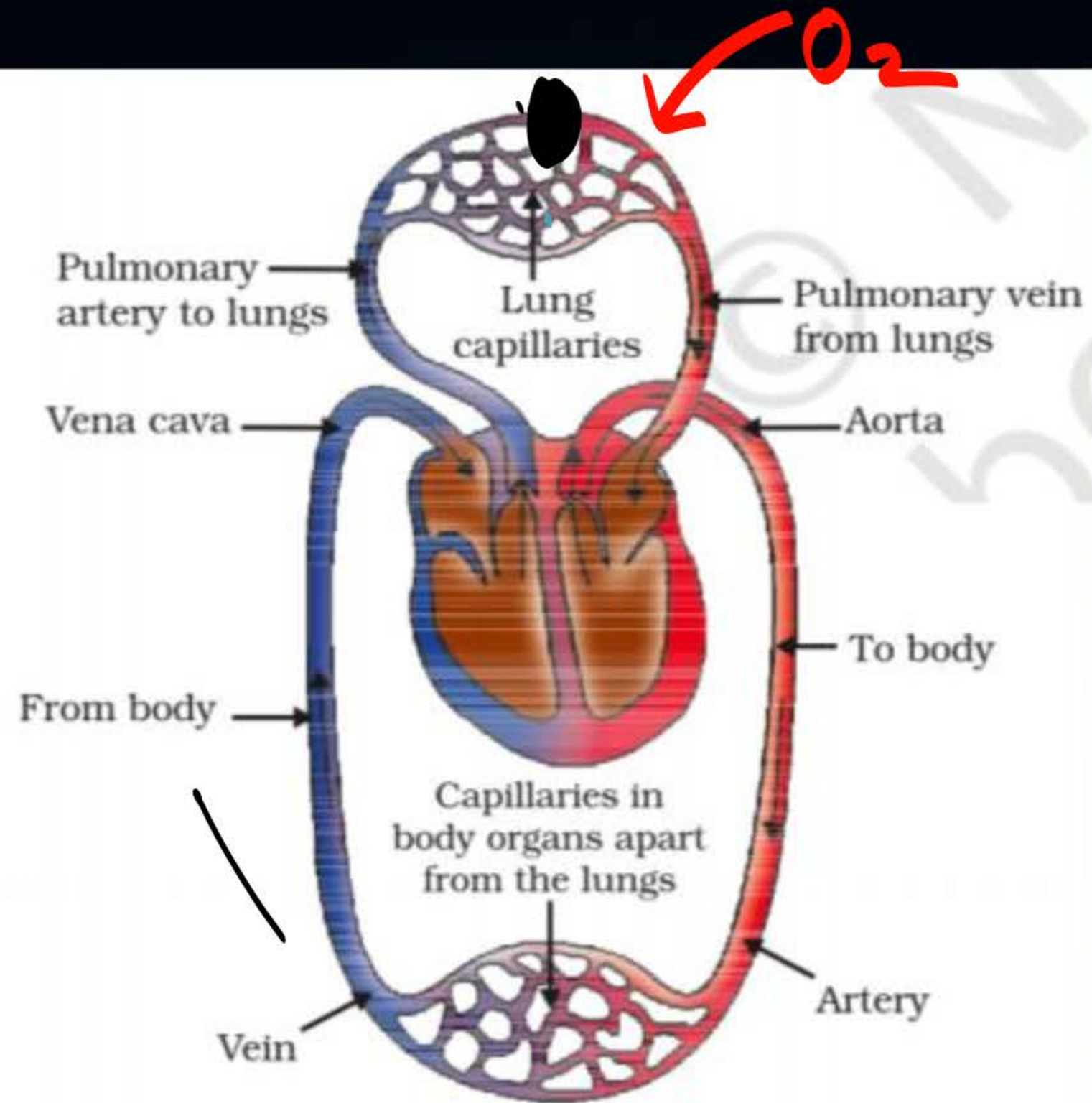


Figure 6.11

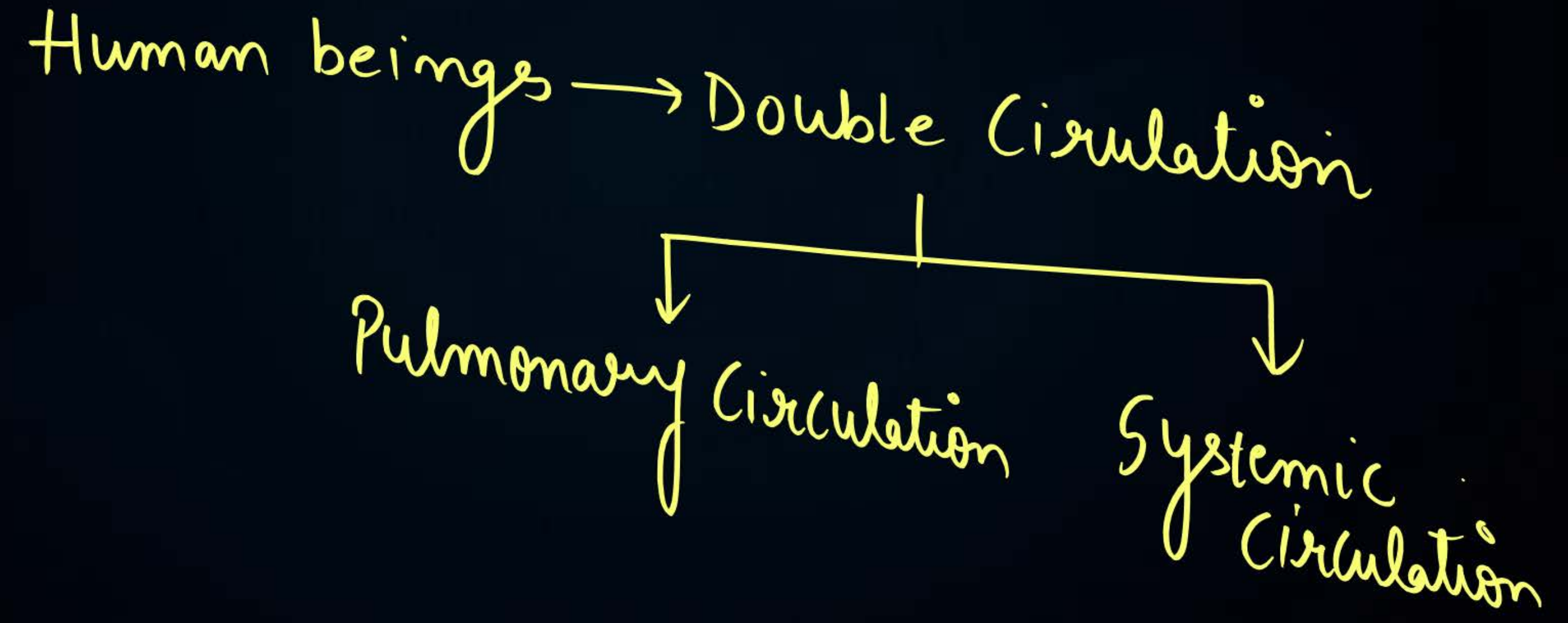
Schematic representation of transport and exchange of oxygen and carbon dioxide



Double Circulation

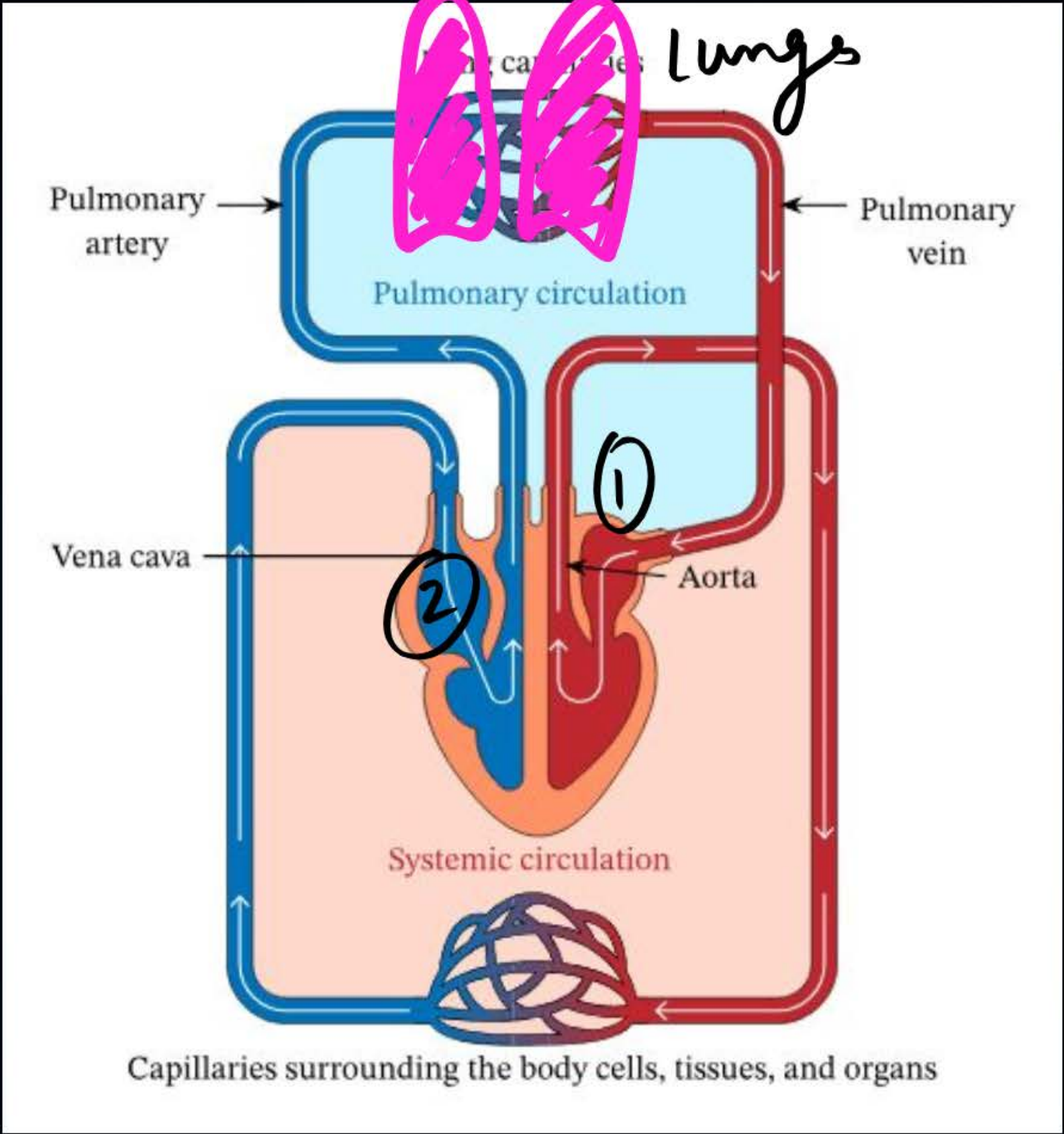


Blood flows through the heart twice to complete the full circuit



Systemic Circulation

Heart
↓
Body organs



Pulmonary Circulation

Heart
↓
Lungs

notes ✓



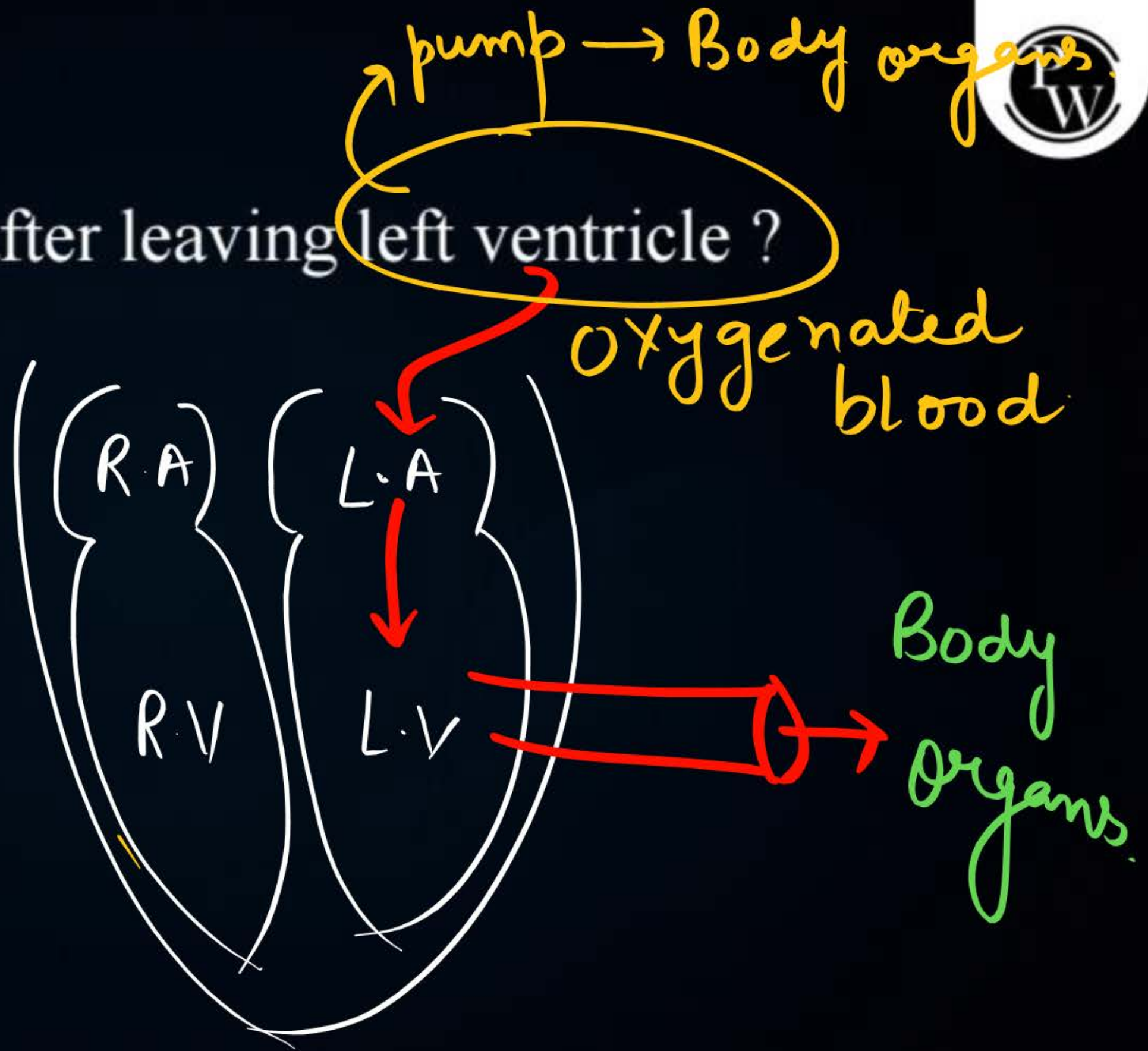
Class	Chambers in heart	Type of circulation	Temperature maintenance
Pisces (Fishes)	2	Single circulation	No (Cold blooded)
Amphibians	3	Incomplete Double circulation	No (Cold blooded)
Reptiles	3	Incomplete Double circulation	No (Cold blooded)
Aves (Birds)	4	Double circulation	Yes (Warm blooded)
Mammals	4	Double circulation	Yes (Warm blooded)

Question



Where does blood enter after leaving left ventricle?

- A Right ventricle
- B Aorta
- C Right atrium
- D Pulmonary artery





Question of the day ✓

Normal blood pressure

Device used for measuring ✓ blood pressure

Diagrams → NCERT



Me after knowing the true shape of human heart





THANK
YOU

