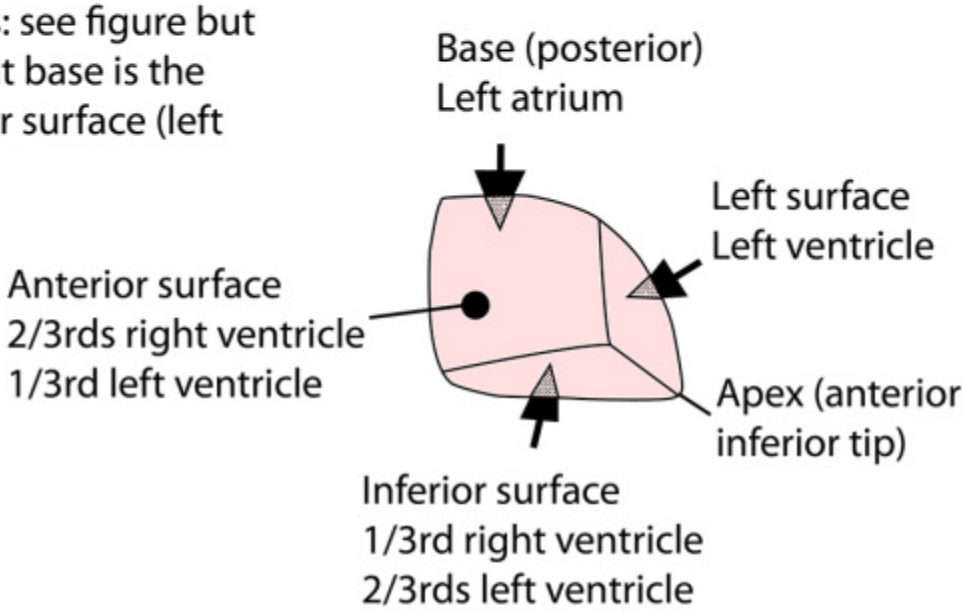
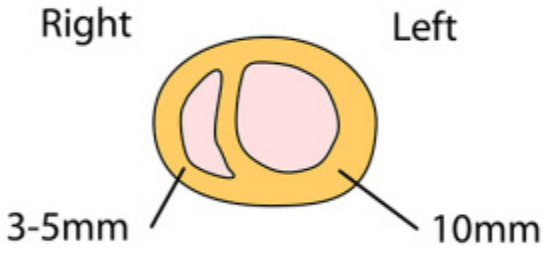
HEART - SURFACES & SEPTUM

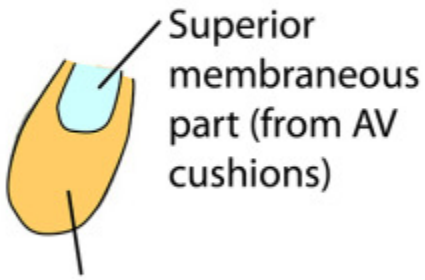
- Midline in middle mediastinum
- Valved muscular pump
- Size of a fist - 300g
- Cone shaped
- Surfaces: see figure but note that base is the posterior surface (left atrium)



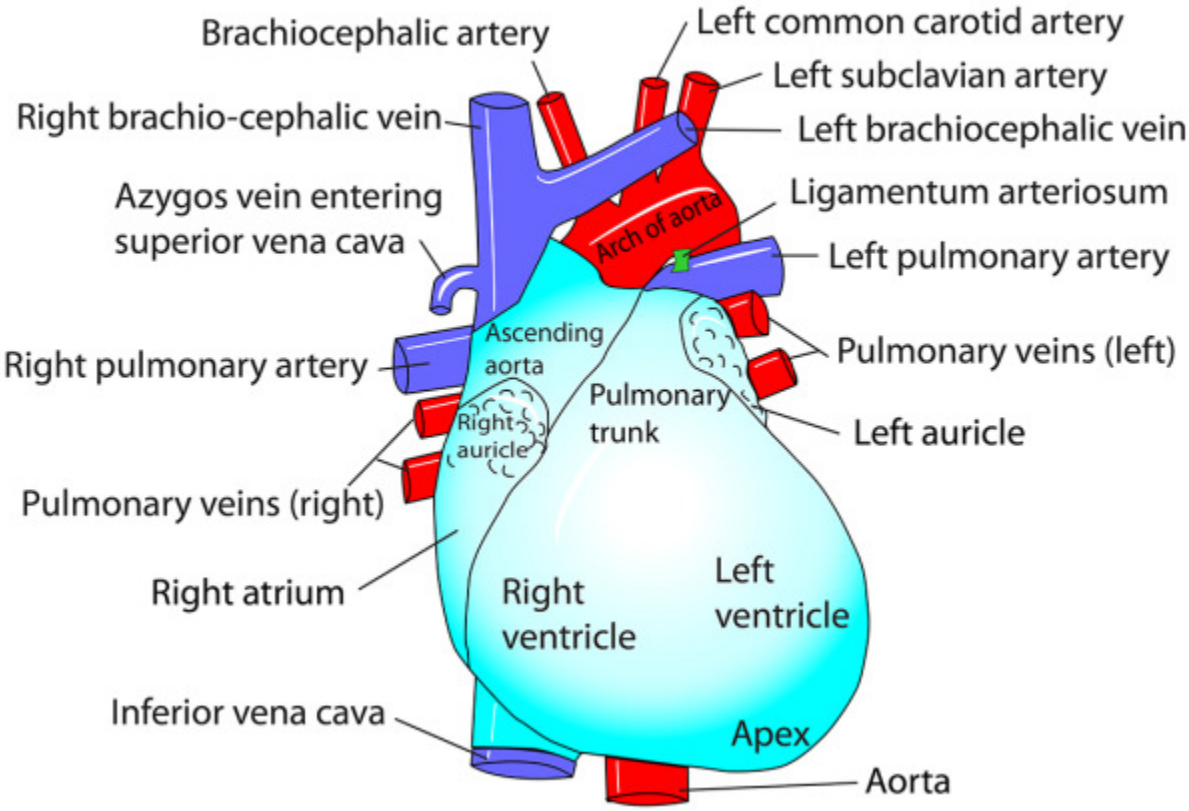
INTERVENTRICULAR SEPTUM



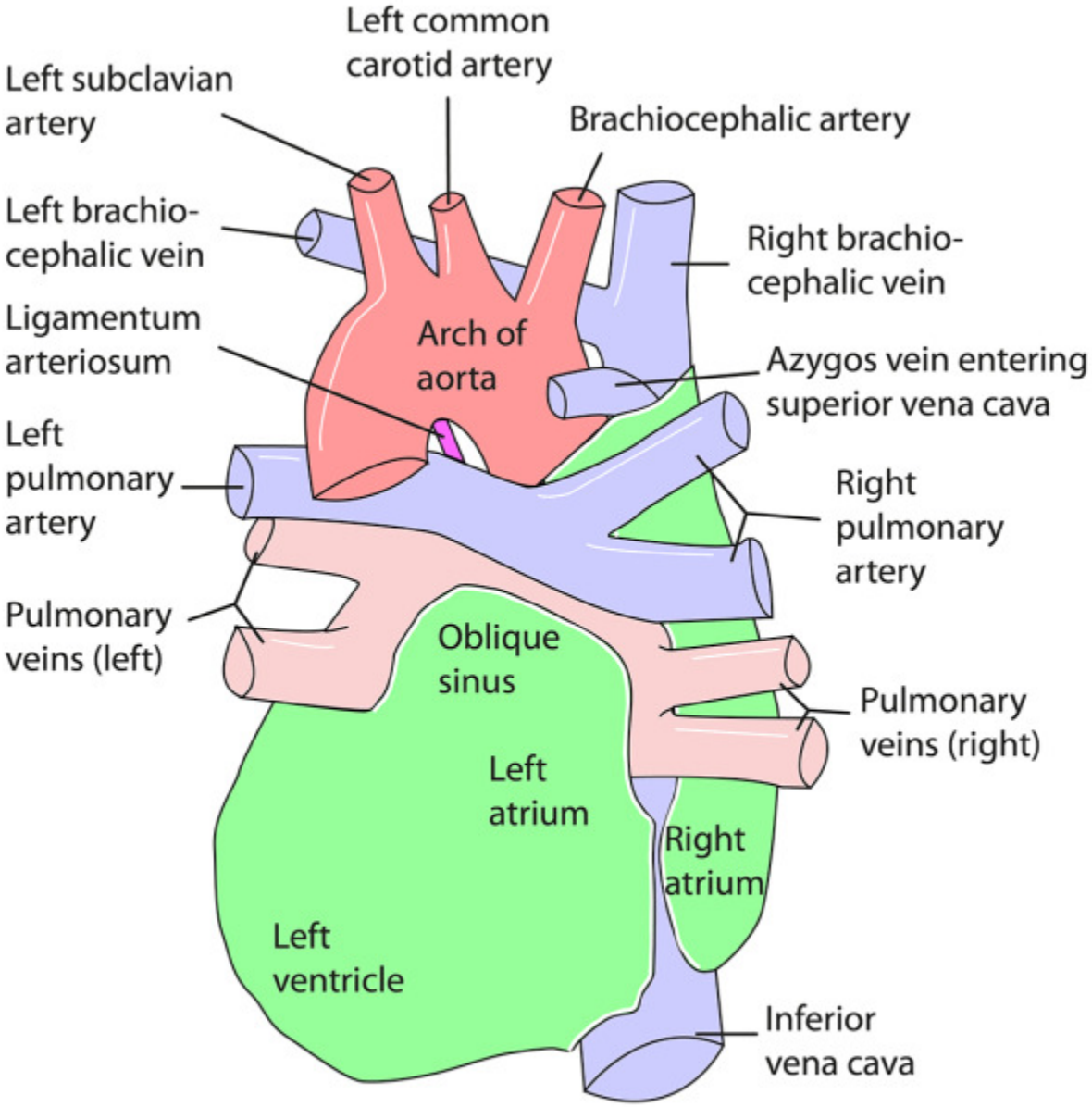
- Bulges to right
- Lies vertically
- In coronal plane
- Attaches to AV rings



HEART - ANTERIOR VIEW



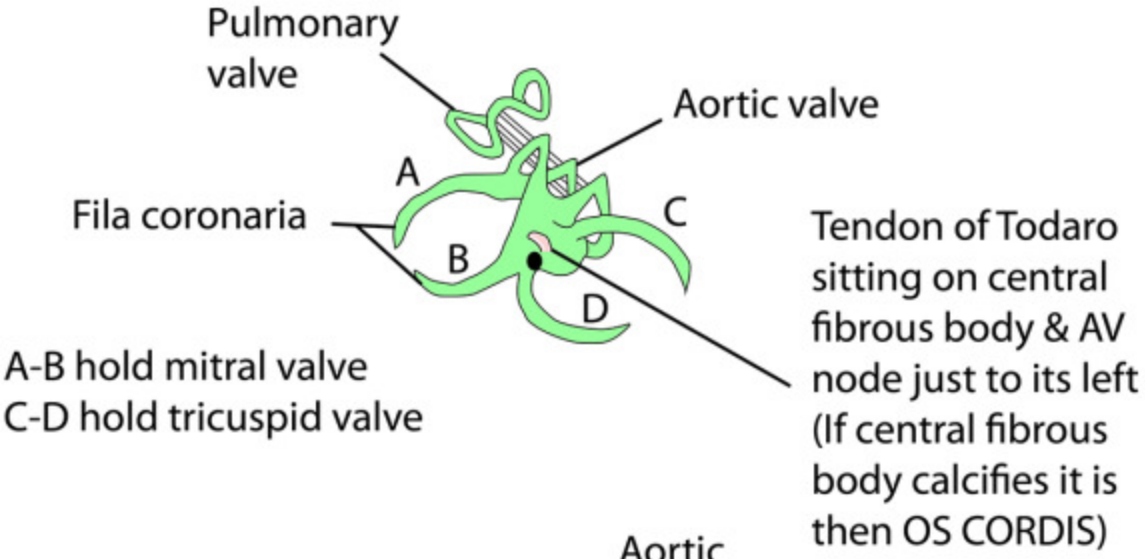
HEART - POSTERIOR VIEW

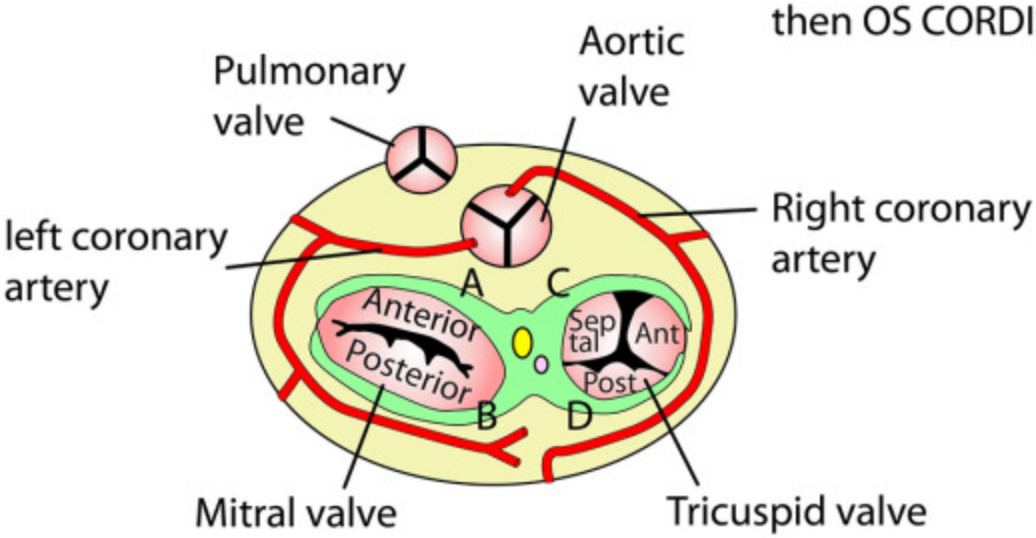


As the visceral pericardium reaches up posteriorly on the left atrium it reflects off the pulmonary veins to become the parietal pericardium. This is the oblique sinus

HEART - FIBROUS SKELETON

- Remnant of atrioventricular cushions
- Divides atria from ventricles
- Supports valves
- Electrically separates atria from ventricles
- Is origin of membranous interventricular septum





HEART - PERICARDIUM

PERICARDIUM

- Outer layer - Fibrous
  Blends with adventitia of aorta, pulmonary trunk, superior vena cava (not inferior vena cava), central tendon of diaphragm
- Inner layer - Serous
  - Visceral
  - Parietal
- Blood: pericardiacophrenic & internal thoracic
- Nerve: Phrenic to fibrous and parietal serous layers
  Sympathetic for pain & muscles & vessels of heart
  Nil to visceral layer

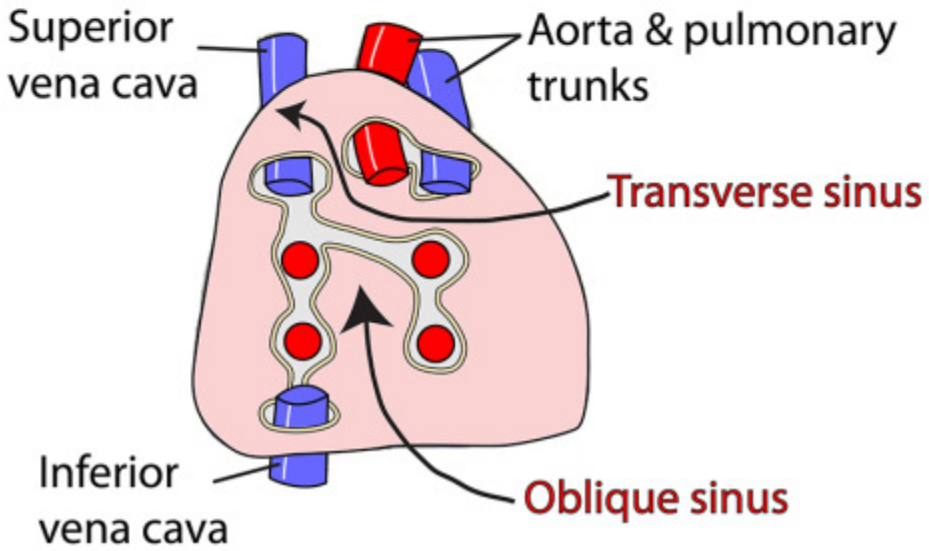
SINUSES OF PERICARDIUM

Transverse

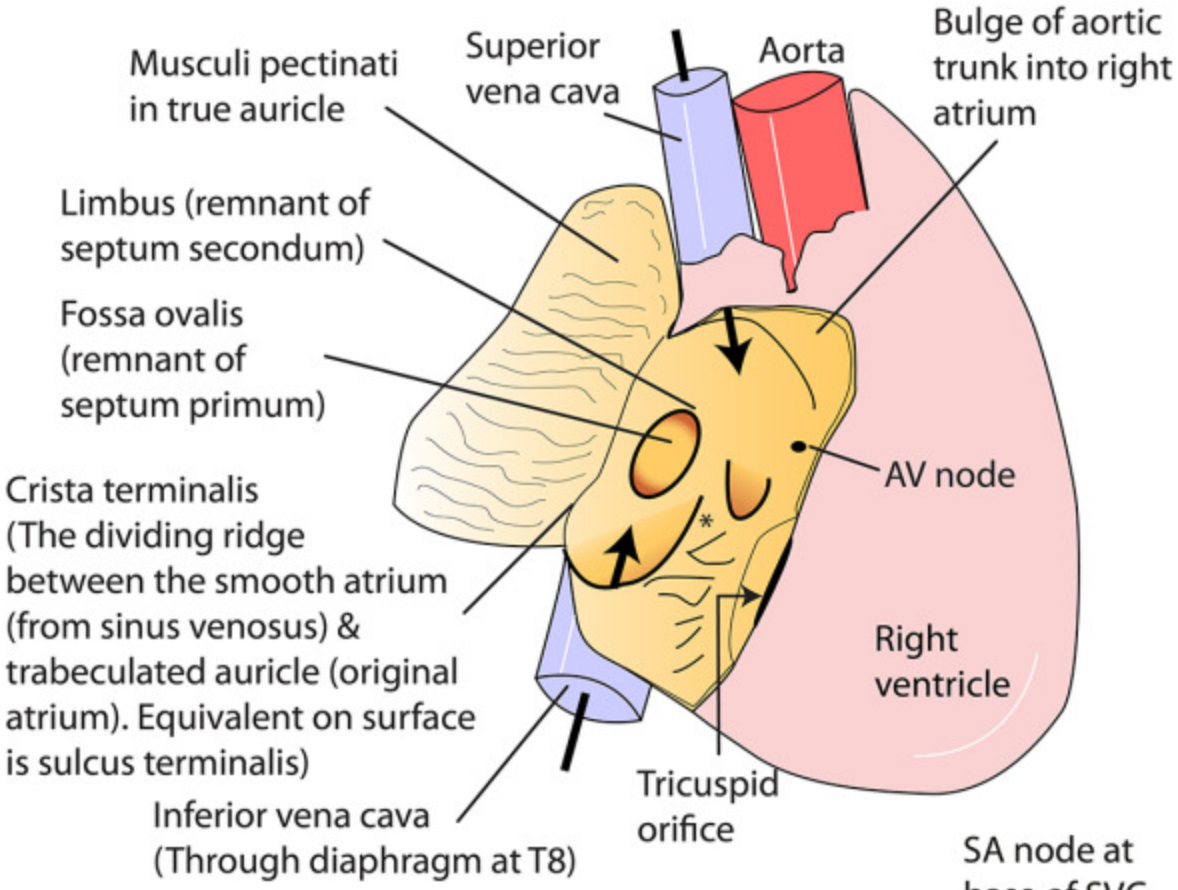
Lies between the pulmonary artery and aorta anteriorly and pulmonary veins and superior vena cava posteriorly

Oblique

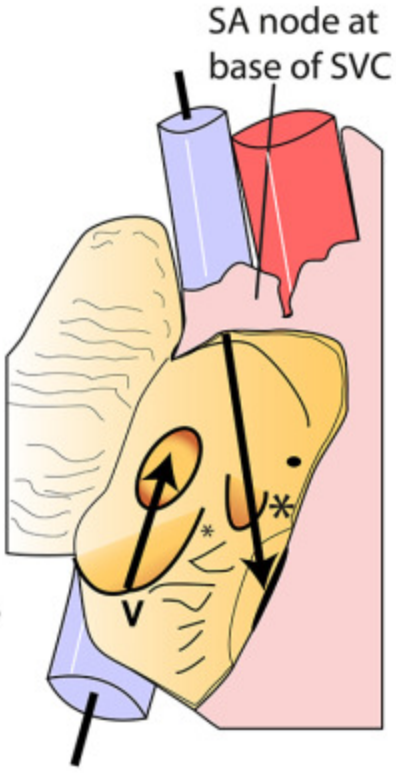
This is a pouch of pericardium between the pulmonary veins at the base of the heart where the visceral pericardium is reflected off the vessels to become the parietal pericardium



HEART - RIGHT ATRIUM



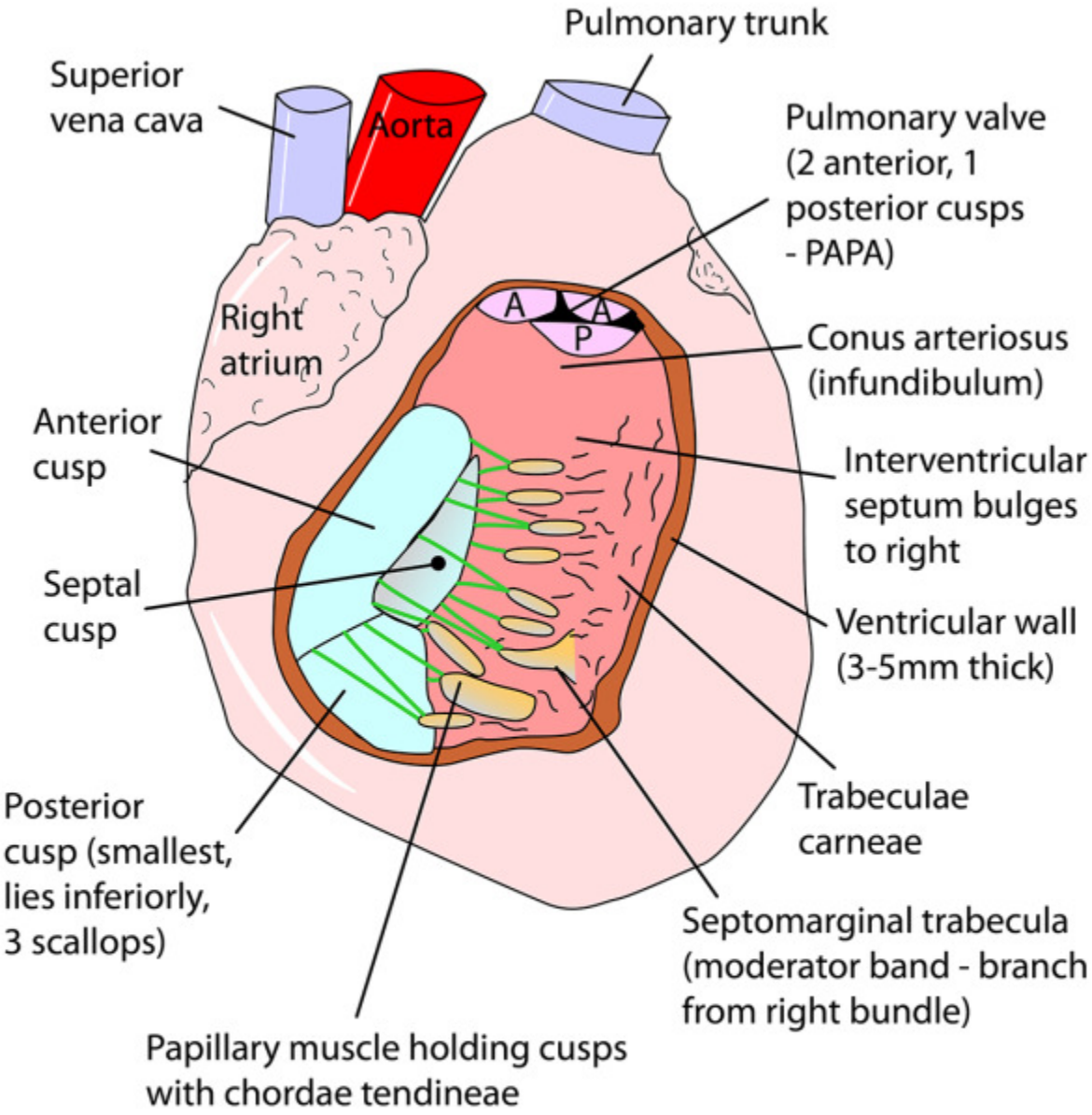
Opening of the coronary sinus (*)
Between the opening of the inferior vena cava & the atrioventricular orifice.
Protected by a small valve which prevents regurgitation during atrial contraction.
Between this orifice and the septal cusp of the tricuspid valve lies the atrioventricular node (A-V node).



FETAL SHUNTING

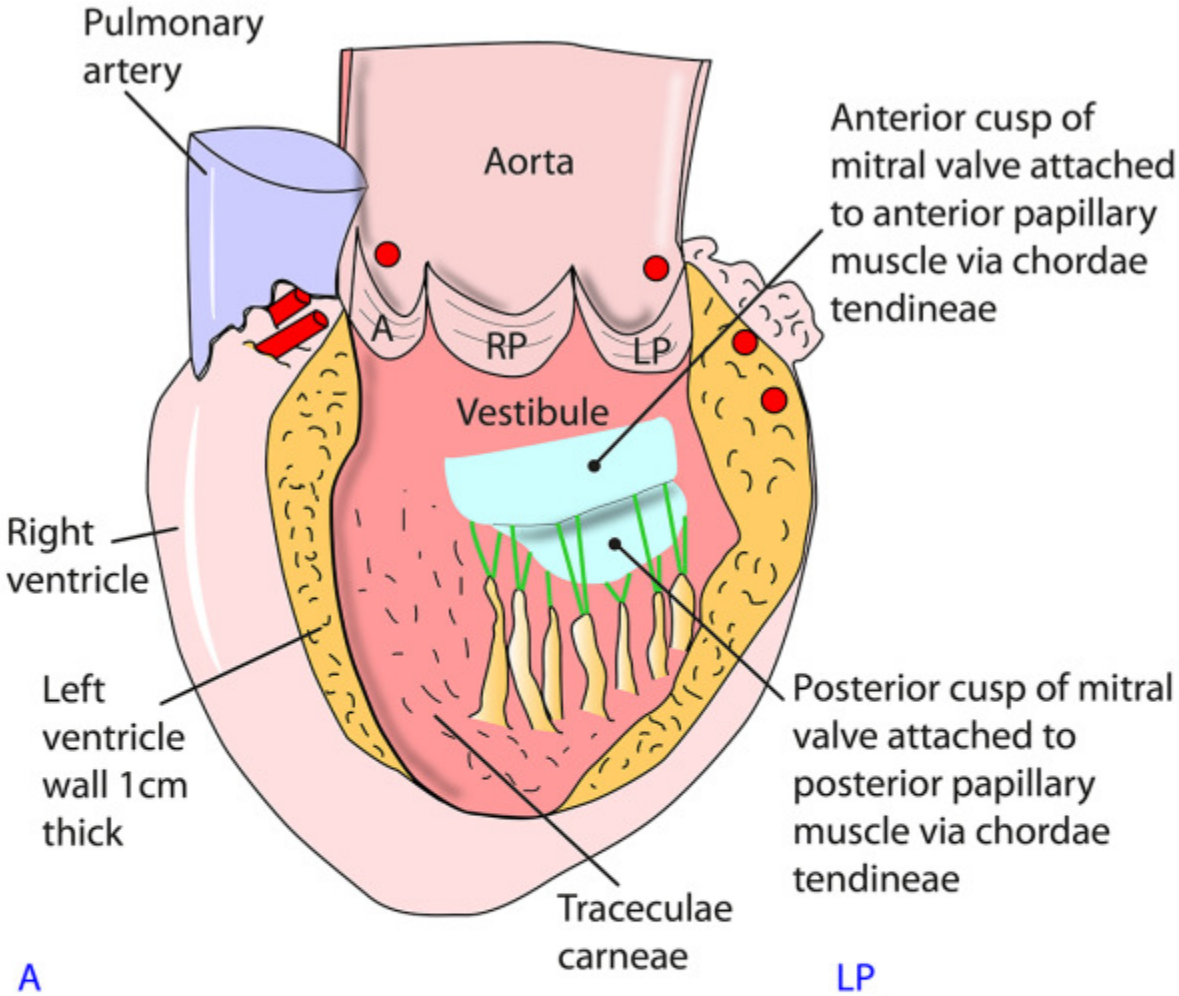
In the fetus oxygenated blood passing up the IVC is diverted by the **"valve of the IVC" (V)** into the foramen ovale & hence to the left atrium.
Blood returning via the SVC passes down into the right ventricle

HEART - RIGHT VENTRICLE



TRICUSPID VALVE
Anterior, septal & posterior
Attached to fibrous AV ring
Admits tips of 3 fingers

HEART - LEFT VENTRICLE



A
Anterior cusp & sinus (opening of right coronary artery)

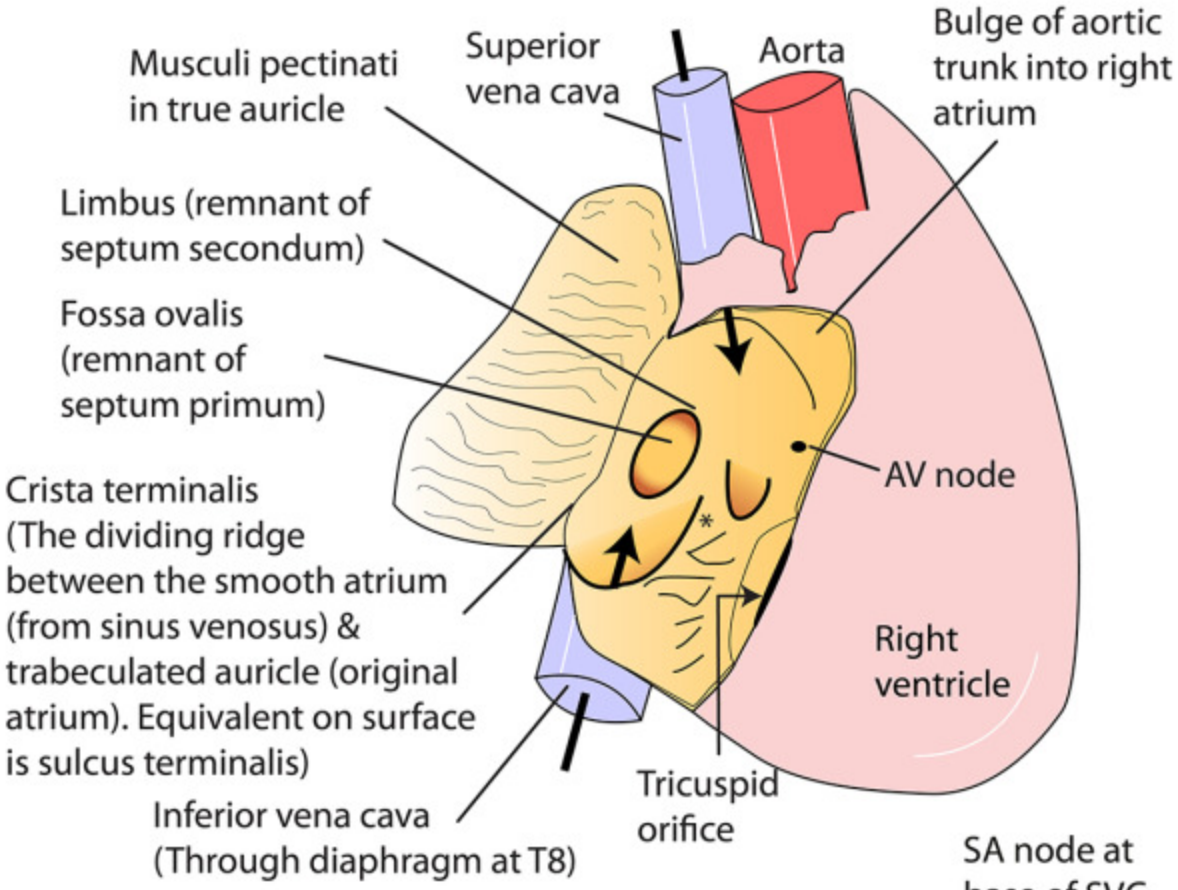
RP
Right posterior cusp & sinus

LP
Left posterior cusp & sinus (orifice of left coronary artery)

MITRAL VALVE

- Anterior cusp is larger, septal & thicker
- Posterior is smaller & has three scallops
- Admits the tips of 2 fingers
- Attached to fibrous AV ring

HEART - RIGHT ATRIUM



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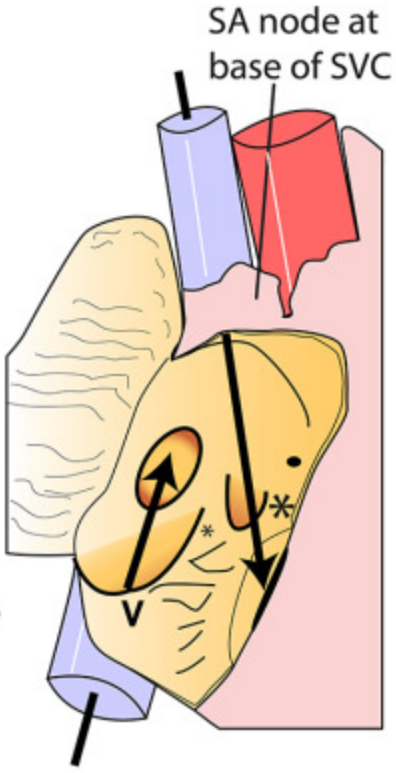

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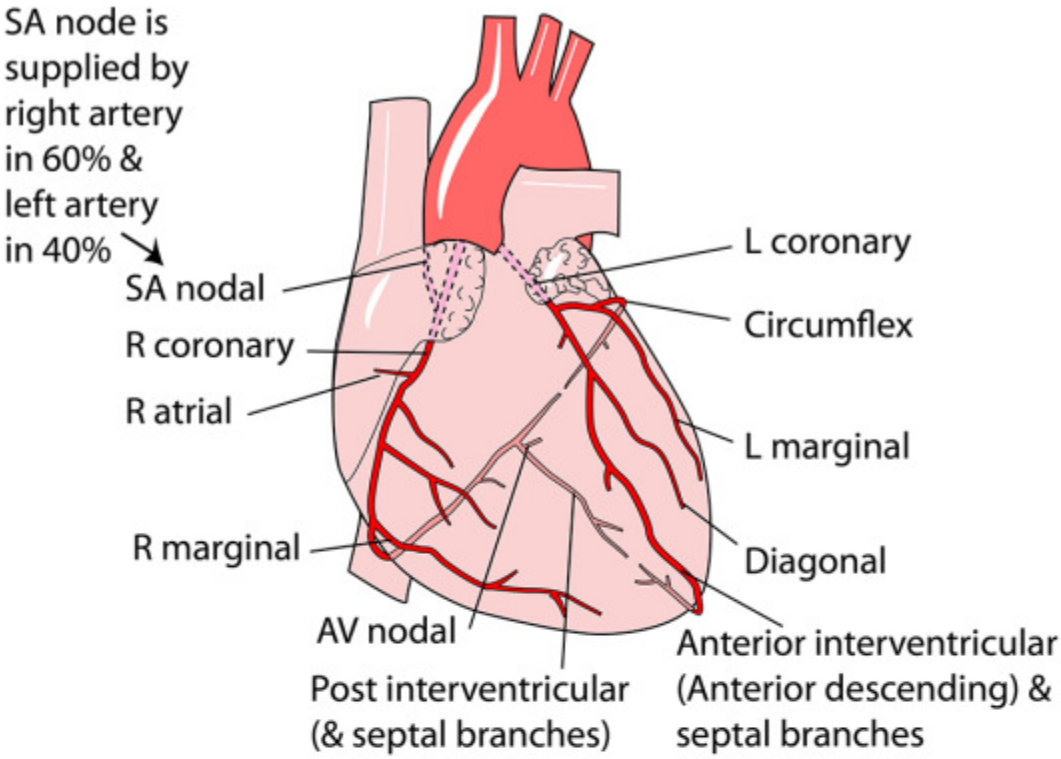
CORONARY ARTERIES



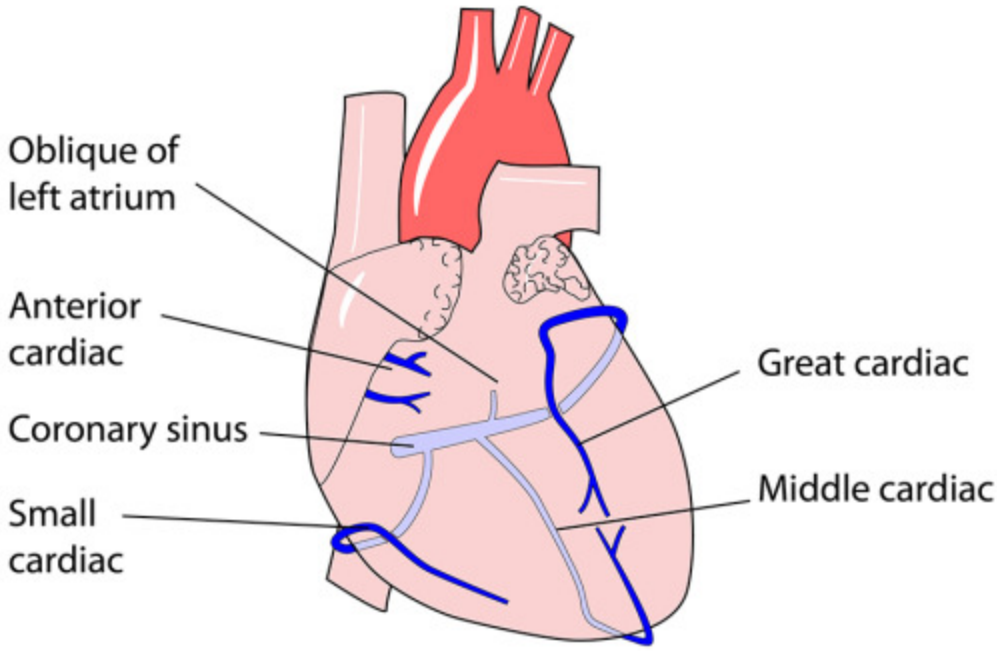
The ostia of these arteries are above the attachment of the base of the relevant cusp.The right from the anterior sinus & the left from the left posterior sinus.

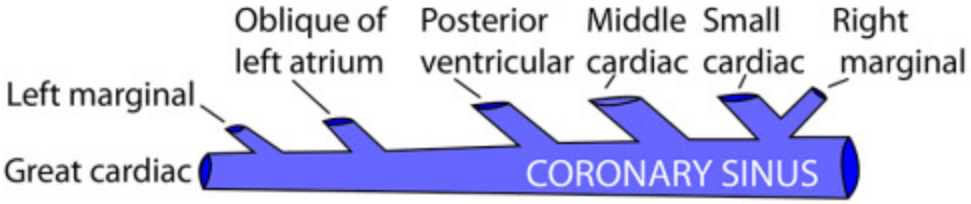
The right artery passes anteriorly between the right atrial appendage & the pulmonary trunk into the right anterior atrioventricular (AV) groove & then the right posterior AV groove where it anastomoses with the circumflex branch of the left coronary artery. In 90% of people it gives the posterior interventricular artery which anastomoses with the termination of the anterior interventricular artery (left coronary) in this groove. The AV node is supplied by the right coronary artery in 90% of people

The left coronary artery passes anteriorly between the left atrial appendage & the pulmonary trunk into the left anterior AV groove. It divides into anterior interventricular & circumflex arteries.

The latter artery continues first in the anterior & then in the posterior AV grooves. It anastomoses with the terminal branches of the right coronary artery. In 10% of people it gives the posterior interventricular artery (left dominence) & also supplies the AV node.The anterior interventricular (anterior descending) passes down & around the apex of the heart to anastomose with the terminal branches of the posterior interventricular artery.

VENOUS DRAINAGE OF HEART





The veins of the heart are more variable than the arteries. Drainage of the left & right ventricles commences with the great cardiac vein in the anterior interventricular groove. It runs left in the anterior atrioventricular (AV) groove where it collects the left marginal vein and then, in the posterior AV groove, it is joined by the oblique vein of the left atrium, the posterior ventricular vein and finally the middle cardiac vein which lies in the posterior interventricular groove & drains the left & right ventricles posteriorly. The confluence of these veins is the 3cm long coronary sinus, lying in the posterior AV groove. Just before the coronary sinus enters the right atrium to the left of the entry of the inferior vena cava, it is usually joined by the small cardiac vein which drains the right atrium & right ventricle. Sometimes the small cardiac vein drains directly into the right atrium. Two anterior cardiac veins drain the anterior aspect of the right ventricle & right atrium before crossing the right coronary artery to enter the right atrium. Some 20-30% of all drainage is in the venae cordis minimae (Thebesian veins) which drain directly into the chambers of the heart, mostly on the right side.