

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

This lecture has included some practical slides. The practical slides have another sheet.

الدكتور ركز كثيراً على أول سلايدين بالهنداوت الأخير ف ادرسوهم منيح.

Fetal circulation:

The fetal circulation receives highly oxygenated blood (80%) through the Umbilical vein. The umbilical vein opens into the Left branch of the portal vein. The portal vein also receives deoxygenated blood from the gut, thus the blood will become less saturated. The blood bypasses the liver circulation through a shunt called: **Ductus venosus**. The blood reaches the IVC (it contains deoxygenated blood from the lower limbs) and become less oxygenated (67%).

The right atrium receives blood from 2 different places and with two different saturations: deoxygenated blood from the SVC and oxygenated blood from IVC. The two blood types will not be mixed. (Little of any)

The blood leaves the right atrium to the left atrium through Foramen Ovale. Some of the blood coming from the SVC will pass through the RA to the RV and then through the Pulmonary trunk → left pulmonary artery → **Ductus Atretiosus** (Poorly oxygenated blood) opens just after the end of the Arch of aorta → descending aorta.

The blood from descending aorta will circulate and eventually reaches the Internal Iliac Artery → Umbilical arteries → placenta.

After birth:

Just after birth the pulmonary circulation starts working and the pressure in the left atrium will increase closing the foramen ovale. The ductus atreiosus closes after 24 hours; because of the high oxygen tension coming from the aorta.

The umbilical arteries will obliterate and become median umbilical ligaments.

The ductus venosus becomes ligamentum venosum.

The ductus atreiosus becomes ligamentum atreiosum

The umbilical vein becomes ligamentum teres.

The most common cause of the right sided heart failure is left sided heart failure.

Good Luck 😊

Mutasim Al-Sayyed