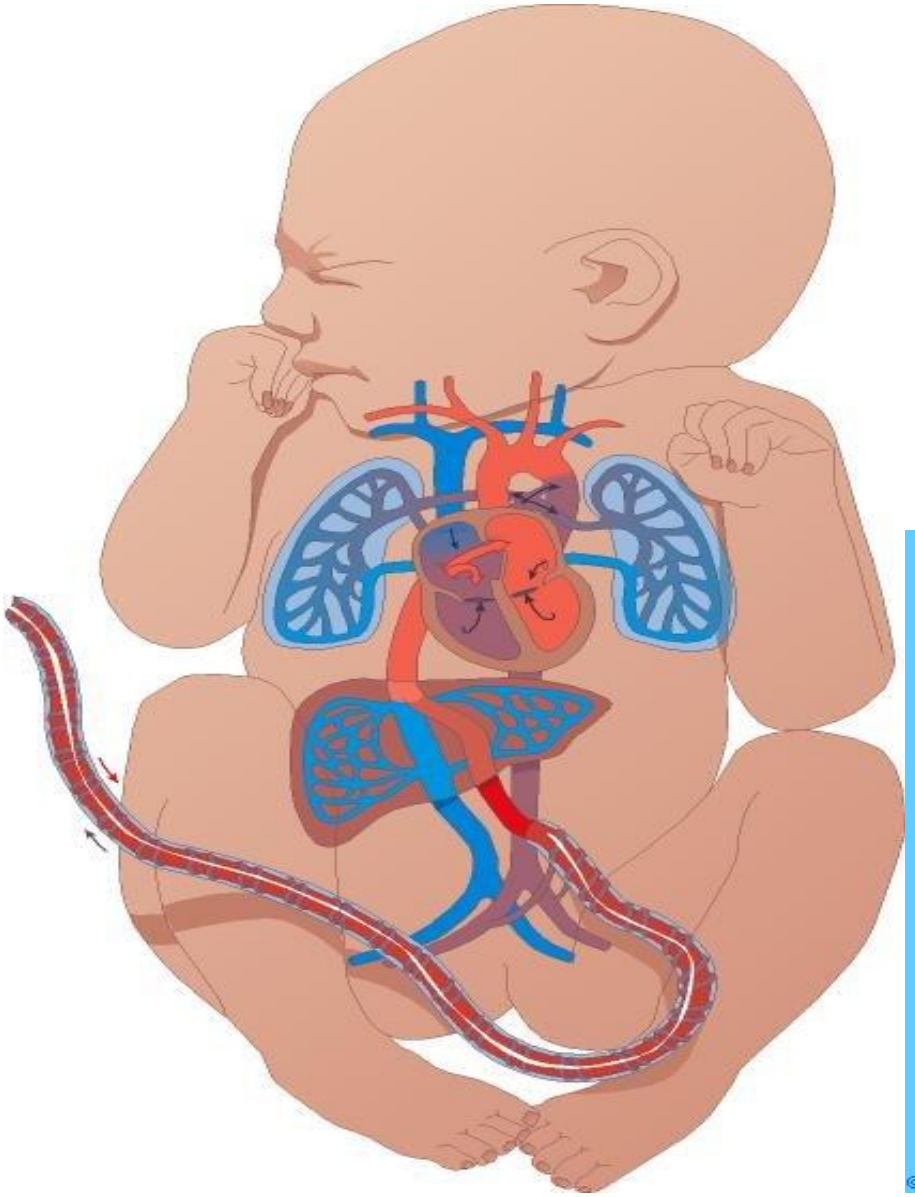
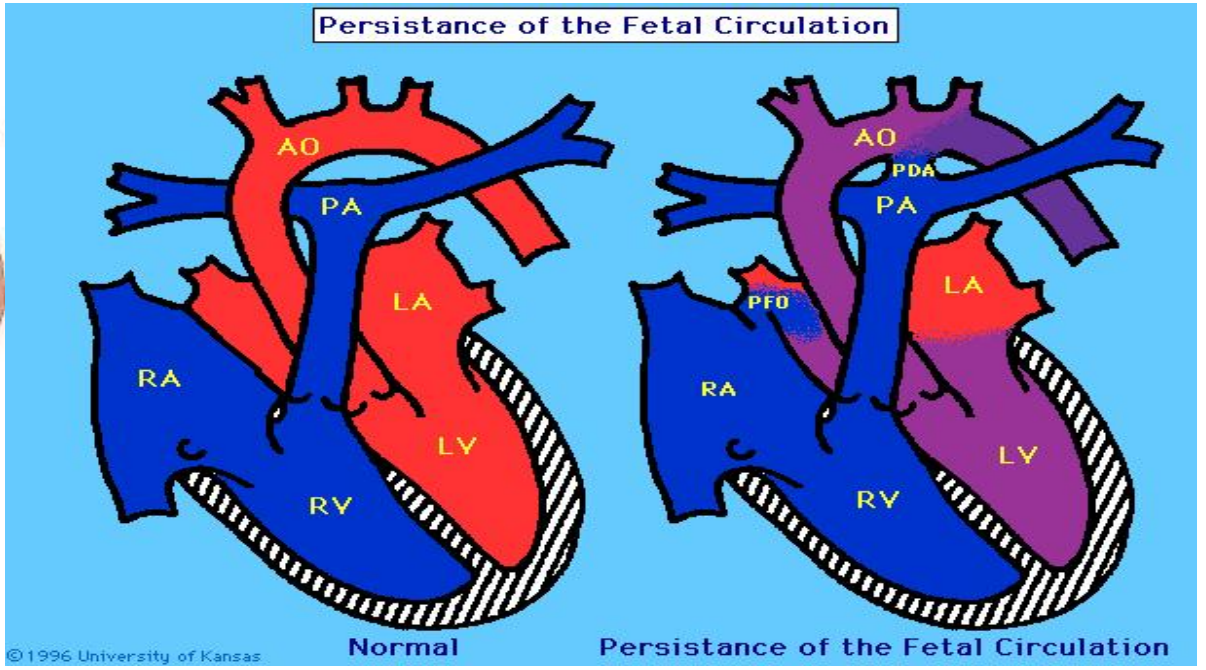


Fetal Circulation

- No circulation to lungs
  - Foramen ovale
  - Ductus arteriosum
- Circulation must go to placenta
  - Umbilical aa., vv.

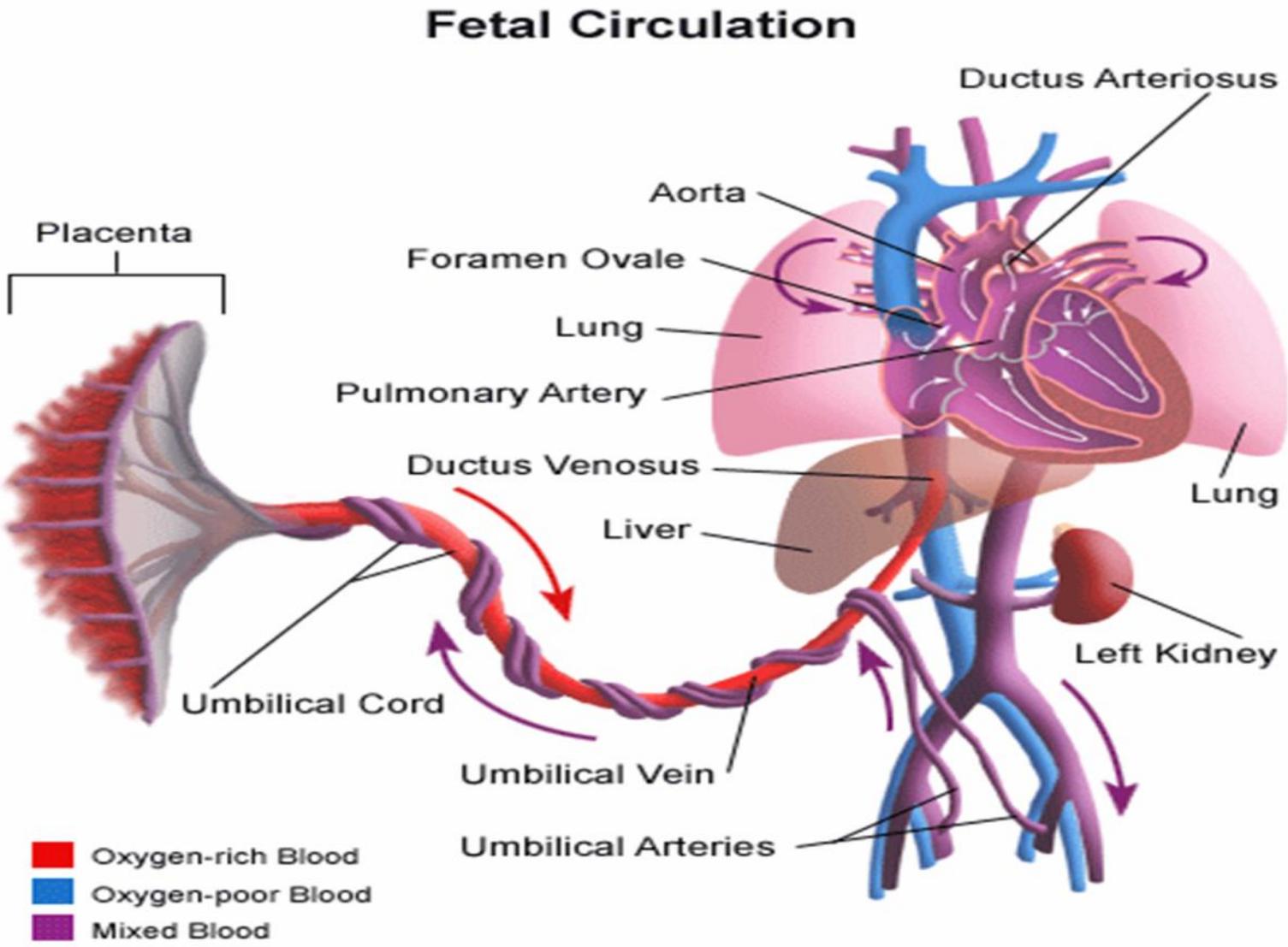


In the developing fetus, the **ductus arteriosus** (**DA**), also called the **ductus Botalli**, is a shunt connecting the pulmonary artery to the aortic arch.

- It allows most of the blood from the right ventricle to bypass the fetus' fluid-filled lungs, protecting the lungs from being overworked and allowing the right ventricle to strengthen.
- There are two other fetal shunts, the ductus venosus and the foramen ovale.

In the fetus, the **ductus venosus** shunts a significant majority (80%) of the blood flow of the umbilical vein directly to the inferior vena cava.

- Thus, it allows oxygenated blood from the placenta to bypass the liver.
- In conjunction with the other fetal shunts, the foramen ovale and ductus arteriosus, it plays a critical role in preferentially shunting oxygenated blood to the fetal brain


Fetal Circulation
Ductus Arteriosus
Aorta
Placenta
Foramen Ovale
Lung
Pulmonary Artery
Ductus Venosus
Lung
Liver
Left Kidney
Umbilical Cord
Umbilical Vein
Umbilical Arteries
Oxygen-rich Blood
Oxygen-poor Blood
Mixed Blood

Adult remnants of fetal circulation

Adult	Fetus
Fossa ovale	Foramen ovale
Ligamentum arteriosum	Ductus arteriosus
Medial umbilical ligaments	Umbilical aa.(within fetus)
Round ligament (ligamentum teres) of liver	Umbilical v.(within fetus)
Ligamentum venosum	Ductus venosus
Medial umbilical ligament	Umbilical cord (leaving fetus)