

Normal fetal circulation is a unique system that allows the developing fetus to receive oxygen and nutrients from the mother's bloodstream. Ductus arteriosus: The ductus arteriosus connects the pulmonary artery to the descending aorta, allowing most of the blood to bypass the lungs and flow directly into the systemic circulation. The ductus venosus allows a portion of the oxygenated blood to directly enter the inferior vena cava, which carries blood from the lower body to the right atrium of the heart. The oxygenated blood is distributed to the fetal body through the systemic circulation, providing oxygen and nutrients to the developing organs and tissues. Right atrium and foramen ovale: In the right atrium, the oxygenated blood from the inferior vena cava mixes with the deoxygenated blood returning from the upper body. However, the majority of the blood in the pulmonary artery is directed away from the non-functional fetal lungs through a shunt called the ductus arteriosus. This shunt helps to ensure that the developing fetus receives oxygenated blood from the placenta instead of relying on its own non-functional lungs for oxygen exchange. Oxygen and nutrient exchange: At the placenta, oxygen and nutrients diffuse across the thin walls of the placental villi and into the fetal capillaries. Here is a simplified explanation of normal fetal circulation: 1.2.3.4.5.6.7.8