

Newborn Transition
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Fetal Circulation: Placenta is source of exchange of oxygen, waste products, and nutrients

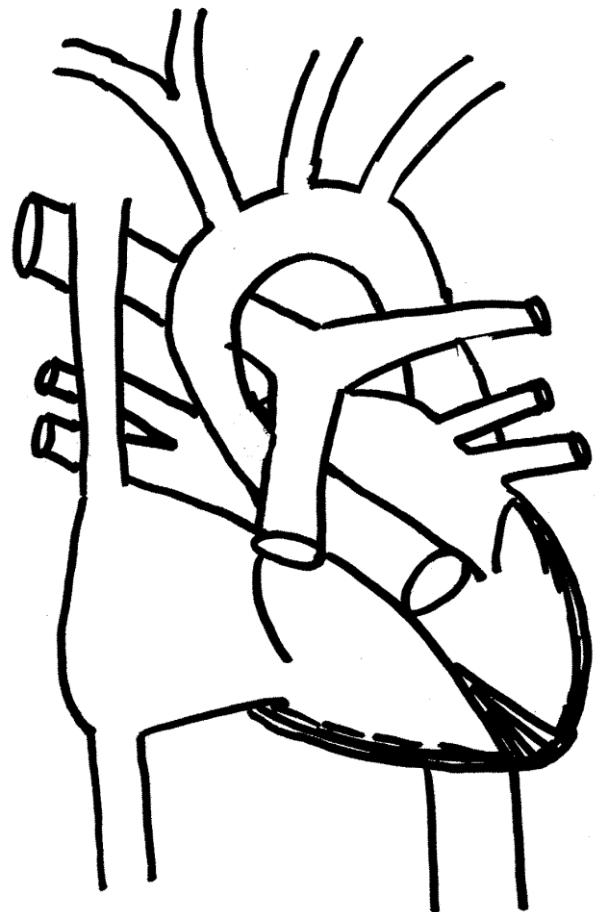
- Lower PaO₂
 - ⇒ Enters at 30-35 mmHg (80% saturated)
 - ⇐ Leaves at 25 mmHg (45% saturated)
- Fetal Hemoglobin – HbF (I ♥ oxygen)
- Presence of 3 ducts:

	Functional Closure	Anatomical Closure
Ductus Venosus	Minutes; after clamping of cord	7-14 days
Foramen Ovale	Minutes; after right atrial pressure increases from clamping of cord	1 month
Ductus Arteriosus	12-14 hours; Flow reverses d/t ↑ SVR	2-3 months

Transition of the Cardiovascular System:

- Loss of placental circulation (when cord is clamped)
- Rise in blood oxygen content w/adequate ventilation
- PVR ↓, SVR ↑
- Flow through DA dramatically decreases

When should the umbilical cord be clamped for vigorous newborns?

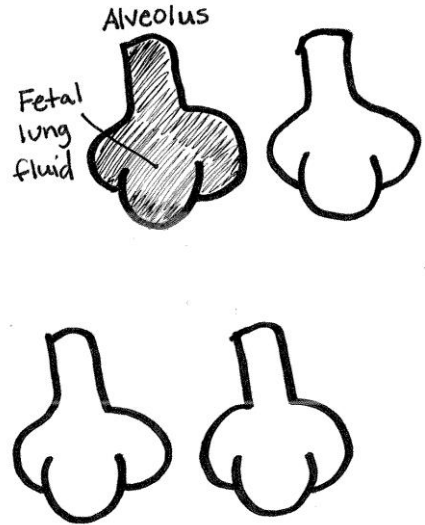


Label the heart:

1. Right Common Carotid
2. Left Common Carotid
3. Right Subclavian
4. Left Subclavian
5. Ductus Arteriosus

Onset of Ventilation:

- First breath is crucial!
- Must occur within seconds of placental separation (even better if before)
- Interdependent with cardiovascular events
- Lungs begin absorbing fluid as opposed to secreting fluid
- Expedited by increased pulmonary blood flow



Oxygen Exposure

- Partial pressure of oxygen in maternal mixed venous blood: _____
- Partial pressure of oxygen in fetal blood entering the umbilical vein: _____
- Partial pressure of oxygen in room air: _____

	FETUS	NEWBORN
Source of oxygen:		
PaO ₂ :		

Minute of Life	SPO2
1	
3	
5	
10	

Where should the oximeter probe be placed?

What did the videos of the rabbit kittens teach us?

What is the most important intervention to assist a newborn with transition? _____

(hint: the blinking word)