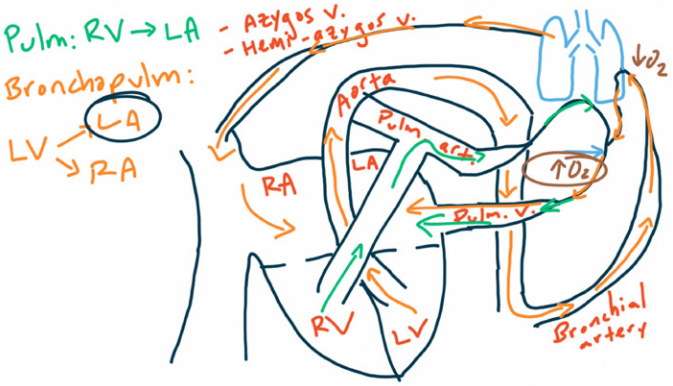
PULMONOLOGY

Section I - Pulmonary and Bronchopulmonary Circulation

I. Circulation

A. Bronchopulmonary circulation

1. Supplied by blood from the systemic circulation but drains into the left atrium.



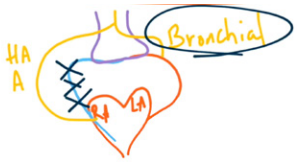
B. Pulmonary circulation

1. Supplied by blood from the right ventricle and drains into the left atrium.
2. Pressure in the pulmonary artery is around 15 mmHg.
3. Blood flow regulation
   a) Hypoxia in the alveoli cause vasoconstriction of adjacent pulmonary vessels → blood is directed toward alveoli with higher PaO_2

REVIEW QUESTIONS

1. A researcher is studying pulmonary tissue necrosis in mice. After surgically removing several pulmonary arteries she notices that the lungs are still adequately oxygenated. Why?

   - **The lungs receive a dual blood supply which includes the pulmonary arteries and the bronchial arteries**
   - **In this example tissue necrosis is unlikely to occur as the bronchial arteries will continue to provide sufficient oxygenation to the lungs**



2. How would the resistance of the pulmonary vasculature of a patient at high altitude differ from that of a patient at sea level?

   - **High altitude → ↓ oxygen**
   - **Hypoxia causes vasodilation in most tissues**
   - **In the lungs, however, hypoxia → vasoconstriction → ↓ luminal radius → ↑ pulmonary vascular resistance**