

## • fifth left intercostal space

The apex of the heart is formed by the tip of the left ventricle and is located at the **level of the fifth left intercostal space**.

The ventricles are **larger and thicker** walled than the atria. The **right ventricle** pumps **blood to the lungs**. The left ventricle is larger and thicker walled than the right; it pumps blood through all other vessels of the body.

**Note:** The ventricles receive blood from the atria.

**Important:** The left ventricle enlarges briefly in response to coarctation (constriction) of the aorta.

**Remember:** The heart functions as a double pump. The **right side** (right atrium) receives **deoxygenated blood** from the systemic circuit via the superior and inferior venae cavae as well as the coronary sinus. The blood then goes from the right atrium to the right ventricle **via** the right AV valve. The right ventricle then pumps blood into the pulmonary circuit (**via** the pulmonary semilunar valve, which allows blood to flow into the pulmonary arteries).

**Note:** Resistance to pulmonary blood flow in the lungs causes a strain on the right ventricle and results in ventricular hypertrophy.

The **left side** (left atrium) receives **oxygenated blood** from the lungs by way of the pulmonary veins. This blood then flows through the left AV valve into the left ventricle. From the left ventricle, blood passes through the aortic valve and enters the arch of the aorta, which will deliver the blood to the body's systemic circuits.

**Remember:** Most veins carry deoxygenated blood from the tissues back to the heart; exceptions are the pulmonary and umbilical veins, both of which carry **oxygenated** blood to the heart.

**Note:** Heart failure may affect the right side, the left side, or both sides of the heart. The left side of the heart receives blood rich in oxygen from the lungs and pumps it to the remainder of the body. As the ability to pump blood forward from the left side of the heart is decreased, the remainder of the body does not receive enough oxygen especially when exercising. This results in fatigue. **In addition**, the pressure in the veins of the lung increases, which may cause fluid accumulation in the lung. This results in shortness of breath and pulmonary edema.