

1. Vein Pump

○ Color the same. Label:

1. superficial vein
2. deep vein
3. inferior vena cava
4. heart

Color (trace) and label:

5. ○ skin
6. ○ skeletal muscle
7. ○ bone
8. ○ diaphragm
 - a. relaxed
 - b. contracted

Color:

9. ○ arrows outside of veins (pressure)
10. ○ arrows inside of veins (blood flow)

Label:

11. vein valve
 - a. upper valve
 - b. lower valve
12. thoracic cavity
13. abdominal cavity

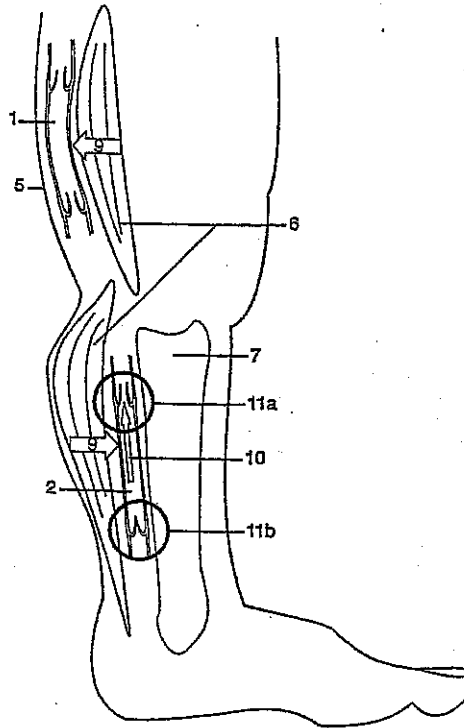


Figure 12.9a. Vein pump in leg.

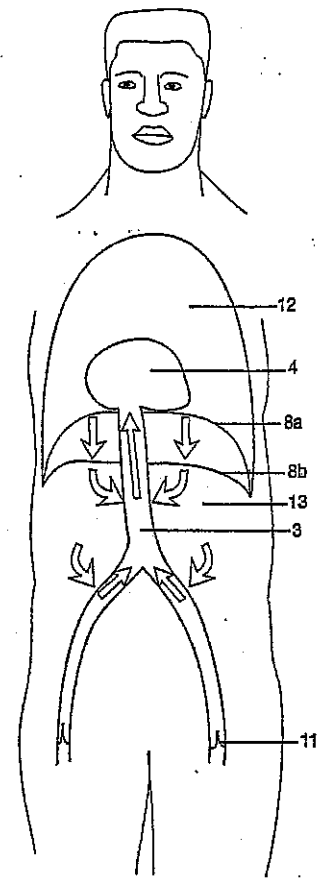


Figure 12.9b. Vein pump in trunk.

Exercise 12.9:

- _____ 1. Blood drains from tissues into _____.
 _____ a. Since the hydrostatic (fluid) pressure in tissues is low, can this pressure push blood back toward the heart?
 _____ b. To keep the blood from flowing back toward the capillaries, the veins in the limbs contain _____.
- _____ 2. In figure 12.9a, muscle contraction squeezes the deep vein against the _____.
 _____ a. This pressure forces the blood in the vein against the upper valve, causing it to _____ (open, close), and
 _____ b. against the lower valve, causing it to _____ (open, close).
 _____ c. Since the lower valve is closed, blood can only flow _____.
- _____ 3. In figure 12.9a, muscle contraction squeezes the superficial vein against the _____.
- _____ 4. Muscle contraction creates more pumping action against _____ (superficial, deep) veins.
- _____ 5. Are valves present in abdominal veins?
- _____ 6. When the diaphragm contracts, it pushes down on the _____ cavity.
 _____ a. This causes the pressure in the abdominal cavity to _____ (increase, decrease) and the pressure in the thoracic cavity to _____ (increase, decrease).
 _____ b. This causes the pressure in the inferior vena cava to _____ (increase, decrease).
 _____ c. Therefore, blood in the inferior vena cava is forced toward the _____.
- _____ 7. Blood in the abdominal veins is prevented from flowing back into the legs by _____ in the veins of the legs.