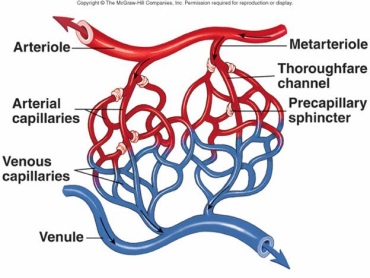
**Blood Vessels**

**A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1. Definition: vessel that transports blood \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from heart at high**

**pressure**

** 2. Types**

**a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ arteries**

**1) largest**

**2) include aorta and some of its branches**

**3) can stretch to accommodate surge of blood as heart**

**contracts**

**b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ arteries**

**1) carry blood to specific organs**

**2) smaller in diameter, muscular layer is proportionately**

**thicker**

**3) examples: brachial, femoral, gastric**

**c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) critically important in regulating blood flow**

**2) function by variable contraction of smooth muscle in**

**walls which increases resistance to blood flow and helps**

**to regulate BP**

**d. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) short connecting vessels that connect true arterioles to**

**capillaries**

**2) have regulatory valves (smooth muscle =**

**precapillary sphincters)**

**B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1. Structure**

**a. microscopic**

**b. more than one billion in body**

**c. distributed non-uniformily**

**d. activity \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with tissue rate of**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**2. Function**

**a. carry blood \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (small veins)**

**b. exchange of nutrients and other vital substances**

**C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1. Definition: vessel transporting blood from capillaries \_\_\_\_\_\_\_\_\_\_\_\_\_\_ heart**

**2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**a. small-diameter, narrow lumens, and porous, this walls**

**b. walls are endothelial cells and a few muscle cells**

**3. Structure of Veins**

**a. larger venous channels**

**b. capacitance: stretch and increase capacity with no pressure change**

**c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: one way to keep blood moving toward the heart**

**D. Overall Structure**

**1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**a. provide smooth surface \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**b. and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**c. have intercellular clefts which vary in size & number influencing**

**the diffusion of substances**

**2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) woven together in wall to strengthen**

**b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) secreted into extracellular matrix**

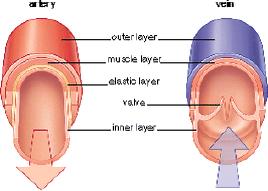
**2) organized into circular patterns to allow recoil**

**c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) not found in capillaries**

**2) exerts active tension**

**3. Layers**

** a. Tunica \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, external layer**

**2) composed of strong, flexible, fibrous connective tissue**

**3) prevents tearing and anchors**

**b. Tunica \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layer**

**2) smooth muscle and elastic connective tissue**

**3) permits changes in vessel diameter**

**4) innervated by autonomic nerves**

**c. Tunica \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layer**

**2) endothelium continuous with that which lines the**

**heart**