KEY
INTRO TO CIRCULATION

1. ARTERY: Carry blood away from heart. Have thick, three layered walls. Middle layer made of elastic and muscular fibres. Walls of arteries are so thick that they need their own blood vessels.

2. ARTERIOLE: Carry blood away from heart. So thin that they are just visible by your eyes. They still have a middle layer of elastic and muscular fibres, but the muscles are 'smooth' muscle which encircles the arteriole. If muscles contract then arteriole diameter gets smaller and less blood can pass through them. If muscles relax, then diameter larger and more blood through them. Walls don't need their own blood vessels.

3. VEIN: Take blood from capillary beds to the heart. Same three layers as arteries, but wall is much thinner because middle (muscle) layer is poorly developed. Larger veins (e.g. in arms and legs) have valves to prevent backwards flow of blood.

4. VENULE: Drain capillaries then join together to form a vein. No valves. Same three layers as arteries, but wall is much thinner because middle (muscle) layer is poorly developed.

5. CAPILLARY: Smallest of the vessels (viewable under microscope only). Walls only one cell thick thus thin enough for oxygen and glucose to diffuse out of them (and carbon dioxide & wastes to diffuse in). This transfer ONLY occurs at the capillaries…there is no exchange in arterioles, arteries, veins, or venules. Capillary beds can be opened or closed by tiny sphincters in the arterioles.