Veins Encyclopedia Article

Veins

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William Harvey's classic work on the circulatory system in the seventeenth century first defined the function of veins. Through dissections and experimentation, Harvey was able to illustrate that veins are responsible for bringing blood to the heart.

Throughout the animal kingdom, veins are the blood vessels which carry oxygen-depleted (deoxygenated) blood from the tissues and organs of the body back to the heart. The only vein in the body which carries oxygen-rich (oxygenated) blood is the pulmonary vein, which carries blood from the lungs to the heart.

Veins are relatively thin-walled vessels, which can expand to hold the necessary quantity of blood. Many veins contain valves which prevent the back-flow of blood, insuring that blood flows solely towards the heart. Breathing and muscle contractions also help to push blood (often against gravity) back toward the heart.

Veins pick up blood from networks of tiny vessels called capillaries. Capillaries receive oxygenated blood from the arteries, and allow oxygen and other nutrients to pass through their single-celled walls to nourish the organs and tissues of the body. Capillary networks branch and re-branch, ultimately forming venules, which are very small veins. Venules become veins, which empty into the body's largest veins, the vena cavae

Diseases which can affect the veins include the development of varicose veins (overly-stretched, twisted, bulging veins which can occur in the legs or in the rectum [where they are called hemorrhoids]); blood clots which cut off the flow of blood through the veins (called venous thrombosis); swelling and inflammation of the veins which can decrease their ability to return blood to the heart (called vasculitis); and abnormal, excessively fragile new networks of vessels, often occurring due to cirrhosis of the liver (called varices).