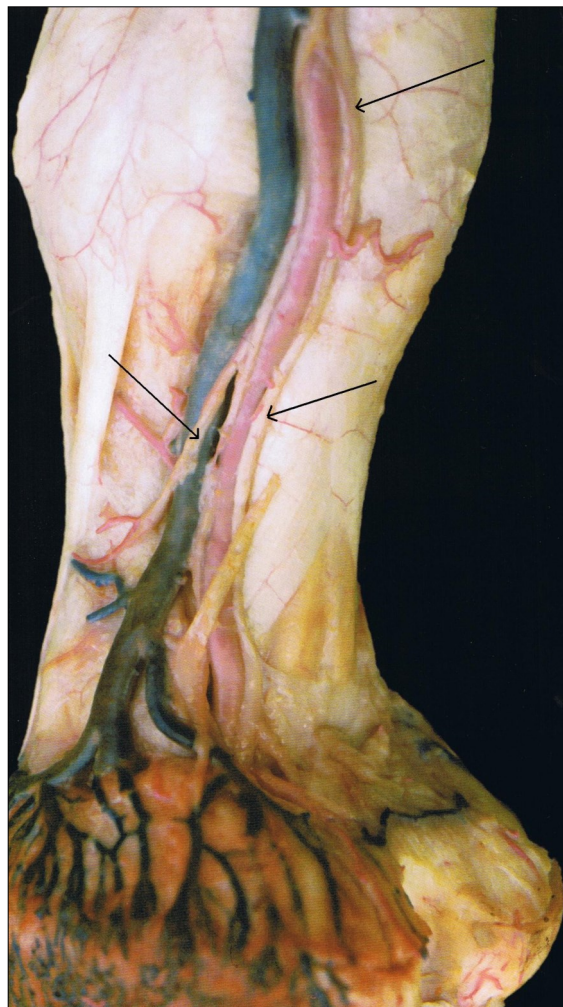




Nerves

Nerves transmit messages to the brain. These messages are transported along nerves as an electrical impulse. In order for a message to be transported along the nerves there must be an ion potential around the nerve ending. Once an ion potential has passed into a nerve as a response to a stimulus, the ion potential must be rebuilt before another message can be sent. ATP (adenosine triphosphate) is necessary to rebuild the ion. Cells need oxygen and glycogen to produce ATP. Oxygen and glycogen are delivered to the cells in the blood stream.



The sensory nerves allow proprioceptive feedback for the maintenance of balance and the control of posture; the sympathetic nerves control the smooth muscle in the blood vessel walls and so, along with direct chemical effects of blood borne factors, they control blood-flow through the tissues.

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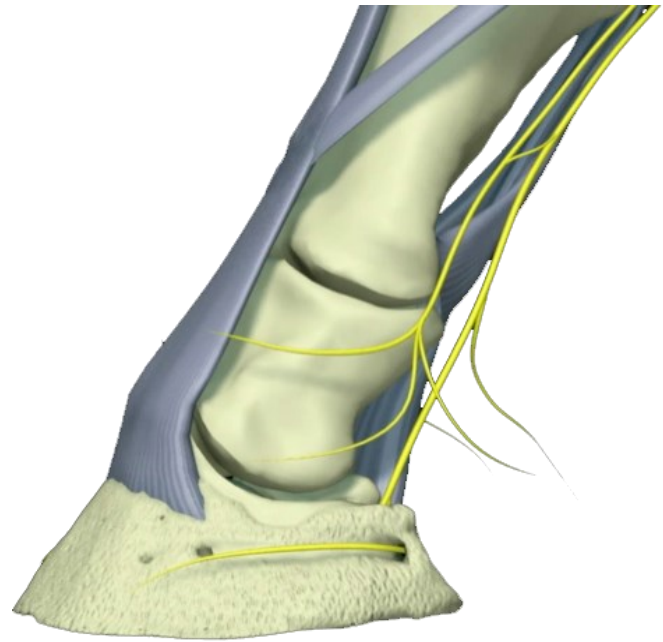
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The blood vessels and nerves in the digit have to traverse regions of movement (e.g. across joint surfaces) in such a way that stretching and twisting of the vessels and nerves is minimized. Nerves and blood vessels are placed where they will be exposed to compression for only short periods of time within each stride.



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Pictures courtesy of Dr. Andrew Parks, University of Georgia and Dr. Jean Marie Denoix—The Equine Distal Limb