Tendons and Tendon Reflex Encyclopedia Article

Tendons and Tendon Reflex

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Tendons and Tendon Reflex

Tendons form the attachment between muscles and bones. They are strong, whitish inelastic cords consisting of bundles of collagen fibers, held together by a "wrapping" of membrane called the epitendineum. At their point of attachment, some of the tendon fibers merge with the periosteum, the bone's fibrous covering. Others, called Sharpey's perforating fibers, penetrate into the bone. The penetrating fibers are engulfed by the bone as it grows.

When a muscle, contracting to move a joint, is overloaded, the tendon may tear. The damage can range from a tear affecting only some of the fibers, a strain that heals quickly, to a full rupture. If the tendon is torn completely off the bone, muscle movement usually pulls it away from its original position. In such a case, it cannot heal properly on its own, and surgical repair is required.

Tendons have very little **blood** supply. The nerves supplying the tendons have special receptors called organs of Golgi at their attachment points. The organs of Golgi consist of millimeter-long capsule of muscle and collagen fibers in which the nerve endings are intertwined.

The nerves in the organs of Golgi detect changes in muscle tension when they are squeezed by the tendon fibers. If the tension is excessive, the organs of Golgi prevent damage to the muscle and tendon by signaling the motor **neurons** in the **spinal cord**, which inhibit the muscle from contracting further. This feedback phenomenon is called the tendon reflex.

Aponeuroses are flattened ribbons of connective **tissue**. They are generally consider a type of tendon and are similar in structure. In addition to attaching muscle to bone, aponeuroses sometimes connect two muscles or other tissues. For example, the lingual aponeurosis connects the tongue with the lingual muscles.