

Muscles and movement

What is the function of tendons?

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What is the function of ligaments?

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Define flexor and extensor.

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Why do muscles work in antagonistic pairs?

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Name the cell surface membrane and cytoplasm of a muscle fibre.

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What is a sarcomere?

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Which part of the sarcomere contains only myosin?

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What does the sarcoplasmic reticulum store?

They join bone to bone at a joint, stabilising it.

They attach muscle to bone and transmit the force of contraction to the bone.

Muscles can only pull, so one muscle is needed to move a joint each way; when one contracts, the other relaxes.

A flexor bends a joint when it contracts; an extensor straightens a joint when it contracts.

The repeating contractile unit of a myofibril, from one Z line to the next.

Sarcolemma (membrane) and sarcoplasm (cytoplasm).

Calcium ions (Ca^{2+}), released when the muscle is stimulated.

The H zone (the A band is where the myosin filaments lie in full).

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Why are slow twitch fibres resistant to fatigue?

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Why are fast twitch fibres suited to sprinting?

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What does tropomyosin do in a relaxed muscle?

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What does calcium do in muscle contraction?

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What are the two uses of ATP at the myosin head?

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What happens to the I band, H zone and A band when a muscle contracts?

Large glycogen stores and anaerobic glycolysis give rapid ATP; they contract quickly and forcefully.

They respire aerobically, with many mitochondria, much myoglobin and a dense capillary supply, so little lactate builds up.

It binds to troponin, which moves tropomyosin and exposes the myosin-binding sites.

It covers the myosin-binding sites on actin, so cross-bridges cannot form.

I band and H zone get shorter; the A band stays the same length.

Binding causes the head to detach from actin; hydrolysis by ATPase provides energy to re-set the head.