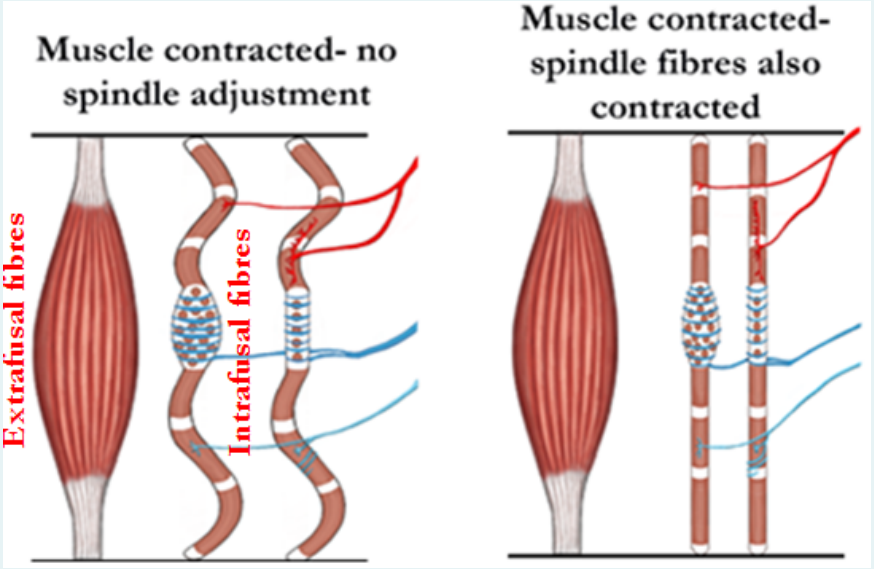
Started on	Wednesday, 12 June 2024, 6:56 PM
State	Finished
Completed on	Wednesday, 12 June 2024, 6:59 PM
Time taken	2 mins 53 secs
Marks	11.00/11.00
Grade	**10.00** out of 10.00 (**100**%)

Question 1

Correct

Mark 6.00 out of 6.00

The figure below is a schematic where the muscle spindle's intrafusal fibres are shown beside the muscle (extrafusal) fibres to allow visualization of the spindle changes, when the muscle contracts. In the statements below the figure, fFor each empty box, choose the correct answer from the drop-down list.



When a muscle contracts, the muscle spindles in that muscle would become slack (as shown in the left panel) and this could compromise the spindle's ability to signal a sudden muscle stretch from the new contracted position. This is prevented as shown in the right panel.

During muscle contraction, the slackening of the muscle spindle is signalled by sensory neurons called [Type Ia & II neurons] ✓ , and leads to 're-tensioning" of the spindle by the action of the [gamma motorneurons] ✓ .

The re-tensioning is possible because the [ends] ✓ of the intrafusal fibres are able to contract; re-tensioning acts to re-sensitize the intrafusal fibres for accurate detection of muscle length.

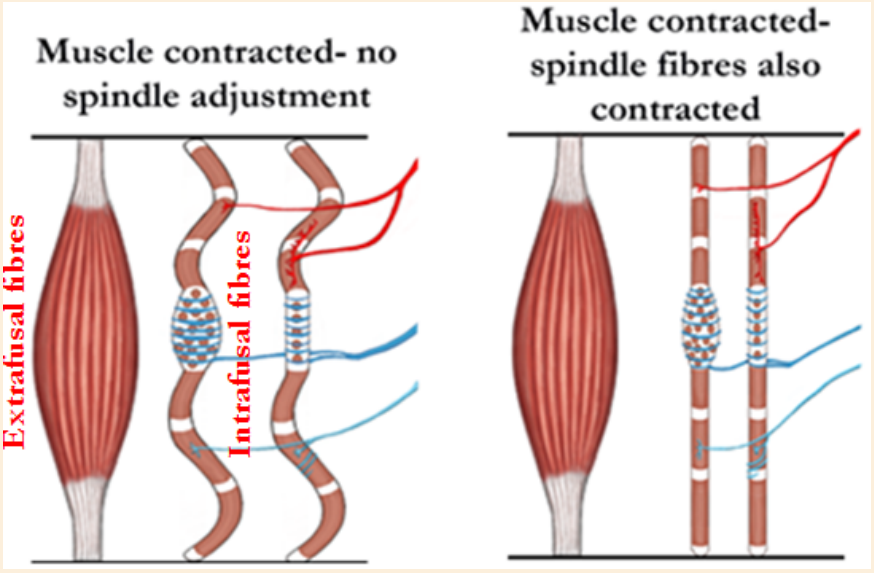
Then any stretch of the contracted extrafusal muscle fibres again leads to stretch of the intrafusal fibres, which is detected by the [Type Ia & II neurons] ✓ .

To ensure that this process occurs efficiently, so that we can always quickly detect any change in muscle length, muscle contraction caused by activation of the [alpha motorneurons] ✓ that control the extrafusal muscle fibres is accompanied by contraction of the muscle spindle, a process called [alpha-gamma co-activation] ✓ .

Your answer is correct.

The correct answer is:

The figure below is a schematic where the muscle spindle's intrafusal fibres are shown beside the muscle (extrafusal) fibres to allow visualization of the spindle changes, when the muscle contracts. In the statements below the figure, fFor each empty box, choose the correct answer from the drop-down list.



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During muscle contraction, the slackening of the muscle spindle is signalled by sensory neurons called [Type Ia & II neurons], and leads to 're-tensioning" of the spindle by the action of the [gamma motorneurons].

The re-tensioning is possible because the [ends] of the intrafusal fibres are able to contract; re-tensioning acts to re-sensitize the intrafusal fibres for accurate detection of muscle length.

Then any stretch of the contracted extrafusal muscle fibres again leads to stretch of the intrafusal fibres, which is detected by the [Type Ia & II neurons].

To ensure that this process occurs efficiently, so that we can always quickly detect any change in muscle length, muscle contraction caused by activation of the [alpha motorneurons] that control the extrafusal muscle fibres is accompanied by contraction of the muscle spindle, a process called [alpha-gamma co-activation].

Question 2

Correct

Mark 5.00 out of 5.00

For each empty box, choose the correct answer from the drop-down list.

The core unit for varying muscle force is the [motor unit] ✓ . This consists of the [alpha motor neuron] ✓ and all the muscle fibres it innervates.

An individual muscle is controlled by the [Motor neuron pool] ✓ , the collection of all α motor neurons that innervate that muscle.

In most muscles, there is a variety of different sizes of [motor unit] ✓ which also vary in the type of muscle fibre they control in the muscle.

The small ones control [Slow oxidative] ✓ while the largest ones control the fibres which, in terms of their speed and duration of responses, are [fast fatiguable] ✓ fibres.

Your answer is correct.

The correct answer is:
For each empty box, choose the correct answer from the drop-down list.

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