

1. Which of the following correctly describes the latent period of a muscle twitch?

- A) Time when calcium ions bind to troponin and cross-bridges form
- B) Time between stimulus application and beginning of contraction
- C) Time when myosin heads detach and tension decreases
- D) Time when the muscle fiber is unable to relax between twitches

Answer: b) Time between stimulus application and beginning of contraction

2. What happens during the contraction period of a simple muscle twitch?

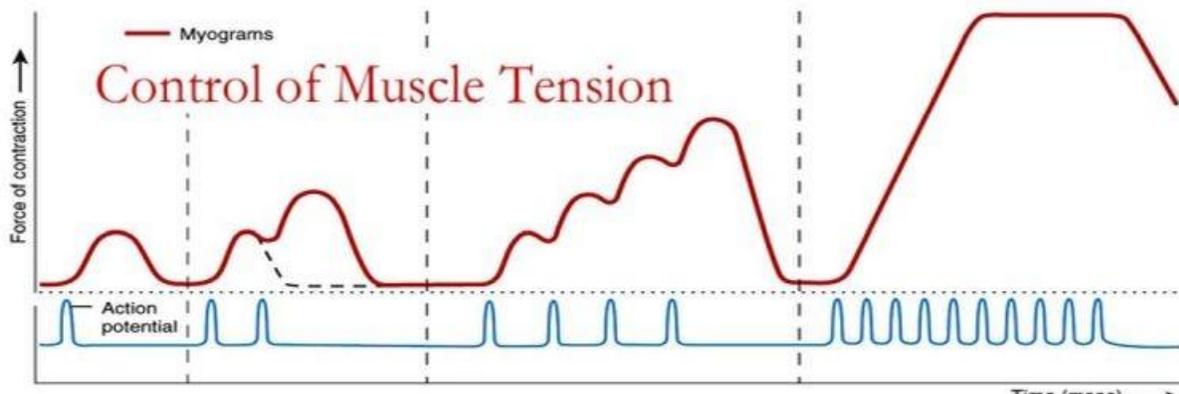
- A) The action potential sweeps over the sarcolemma
- B) Calcium ions bind to troponin, and cross-bridges form
- C) Myosin-binding sites are covered by tropomyosin
- D) The muscle fiber returns to its baseline tension

Answer: b) Calcium ions bind to troponin, and cross-bridges form

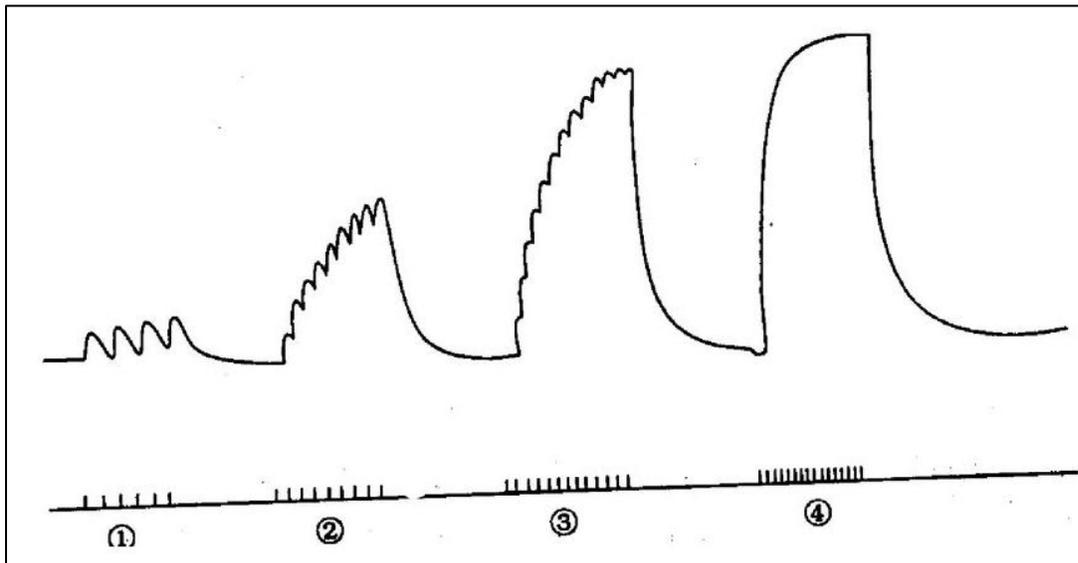
3. What occurs when a muscle is stimulated repeatedly at high frequency, leading to a smooth, sustained contraction?

- A) Twitch
- B) Summation
- C) Tetanus
- D) Fatigue

Answer: C) Tetanus



4. Fill in the blank:



(1)

(2)

(3)

(4)

5. What occurs in frequency summation?

A) The contraction is partially added to the previous one, increasing tension

B) The muscle enters a relaxed state between contractions

C) Only a single muscle fiber is involved in the contraction

D) The sarcoplasmic reticulum absorbs all calcium ions instantly

Answer: A) The contraction is partially added to the previous one, increasing tension

6. During complete tetanus, why does the muscle remain fully contracted?

A) Because the muscle has stopped receiving action potentials

B) Because calcium ions remain in the cytoplasm, preventing relaxation

C) Because the muscle is unable to contract at all

D) Because the muscle is in the refractory period

Answer: B) Because calcium ions remain in the cytoplasm, preventing relaxation