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REVIEW ARTICLE

ALTERATIONS IN CONTRACTILE PROPERTIES AFTER ECCENTRIC CONTRACTION

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Abstract Exercise, particularly the one involving eccentric contractions, induces skeletal muscle injury which is assessed by morphological, biochemical and functional alterations of the muscle. The functional alterations, namely the changes in the muscle contractile properties, are considered as the most reliable indices of exercise-induced muscle injury and include changes in isometric twitch force, half relaxation time as well as maximal isometric tetanic tension. It is suggested that the maximal rate of tension development, the magnitude of the active strain and the lengthening velocity of the muscle are the main factors for skeletal muscle damage. In this review studies conducted on animals were examined. Findings from the animal studies along with the data obtained from noninvasive human studies would be very useful for the development of sound exercise regimes as well as effective countermeasures to exercise-induced skeletal muscle injury.

Key words: Eccentric contraction, Muscle injury, Isometric strength, Tetanic force, Rats.

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