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## Resistance training minimizes the biomechanical effects of aging in three different rat tendons

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### Abstract

Aging process is characterized by a decline in the organism functionality, especially in the decrease of muscle function, which also affects tendons. On the other hand, the resistance training (RT) has been used as an important tool to increase muscle and tendineous function during aging. Thus, this study aim has been to verify the effects of RT on the biomechanical properties of three different aged rat tendons. For this purpose, 20 wistar rats have been divided into four groups (5 rats per group): young sedentary (YS), trained (YT), old sedentary (OS) and old trained (OT). The RT has been performed through climb protocol for 12 weeks. After RT, the calcaneal tendon (CT), superficial flexor tendon (SFT) and deep flexor tendon (DFT) have been used for analysis. The results indicate that the RT in aged rats can prevent tendon function decrease ( $P < 0.05$ ). Although RT has prompted significant biomechanical changes in trained aged rats, there has been no increase in cross-section area or tendon stiffness reduction. Thus, the OT group showed better biomechanical responses when compared with OS ( $P < 0.05$ ). Therefore, RT can be used as an excellent strategy for increasing in tendon capacity during aging.

### Keywords

Aging; Strength Training; Biomechanics; Tendons

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