

Paper Category:	Physical Activity and Exercise
Paper Title: (Arial Font; 14 Pt Size)	Effects of exercise prehabilitation on physical function and single muscle fiber passive tension in hindlimb unloaded rat skeletal muscles
Abstract Body: (Arial Font; 12Pt Size)	<ul style="list-style-type: none"> • Background • Objectives • Method • Results • Discussions and Conclusions
<ul style="list-style-type: none"> • Background Muscle atrophy is a common side effect of surgery or injury. Exercise prehabilitation can help prevent muscle atrophy by strengthening the muscles. • Objectives This study evaluated physical function and passive tension in hindlimb unloaded rat single muscle fiber after 14 days exercise prehabilitation. • Method A total of twenty six SD rats were randomly divided into three groups: i) control (CON, n=9); ii) hindlimb unloading (HLU, n=9); iii) exercise prehabilitation (EPH, n=8). EPH group performed eccentric exercise (downhill running) for 14 days before the hindlimb unloading treatment. Single muscle fibers (N=311) of soleus (SOL) and extensor digitorum longus (EDL) muscles were used. Grip strength (forelimb & whole) and slope test, CSA and passive tension of single muscle fibers were measured. • Results Forelimb grip strength was higher in EPH group compared to CON group. Whole grip strength was not different between groups. CON group showed significant higher level in slope test than those of HLU and EPH groups. In SOL, CSA of type I fibers significantly lower in HLU and EPH than CON group. In EDL, CSA of both type I and II fibers significantly lower in HLU and EPH than CON group. Passive tension was significantly lower in type I and II fibers of HLU and EPH than that of CON group. However, in EDL, passive tension was significantly lower only in type II fibers of HLU and EPH than that of CON group. • Discussions and Conclusions 	

We found grip strength and CSA of hindlimb unloaded single muscle fibers were not affected by exercise prehabilitation. However, exercise prehabilitation may have positive effects on passive tension of single muscle fibers in both type of muscles.

Date of Submission: 11 July 2023

Total number of words: 274 words

Please submit the completed abstract form by 12 July 2023 via the online submission portal at (<https://sgms.org.sg/abstract-submission/>.)

Instructions

1. **The names of the author and co-authors must not be identifiable on this form.**
2. Abstract body should not exceed 300 words.
3. Abstract title to be in Arial Font & Bold 14Pt and abstract body to be in Arial Font & 12Pt.
4. The use of standard abbreviations is acceptable. Place special or unusual abbreviations in brackets after the full word the first time it appears.
5. The use of tables, graphs, and other types of images in abstracts is not permitted.
6. Please submit this form in PDF format.
7. Only abstracts submitted via the online submission portal will be accepted.