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TITLE PAGE**The fatigue of a full body resistance exercise session in trained men****Paul W.M. Marshall¹****Rebecca Cross¹****Michael Haynes¹****All affiliations 1: Human Performance Laboratory, School of Science and Health, Western Sydney University, Locked Bag 1797 Penrith South, NSW 2751, AUSTRALIA****Corresponding author****p.marshall@westernsydney.edu.au****Abstract word count: 246****Manuscript word count: 3049****Tables and Figure: 2 & 1 respectively****Abstract****Objectives**

We examined the fatigue and recovery for 48h following a full-body resistance exercise session in trained men.

Design

Experimental cross-sectional study

Method

Eight resistance trained men volunteered to participate (mean \pm SD; age 27.0 ± 6.0 yrs, height 1.79 ± 0.05 m, weight 81.8 ± 6.8 kg, training experience 7.8 ± 5.0 yrs). Fatigue and pain was measured before, after, 1h post, 24h and 48h post the full-body resistance exercise session, which was based on in-season models used in contact team sports (e.g. AFL, NRL). Other measures included maximal torque and rate of torque development, central motor output (quadriceps muscle activation, voluntary activation, H-reflexes), and muscle contractility (evoked twitch responses). Linear mixed-model ANOVA procedures were used for data analysis.

Results

Fatigue, soreness, and muscle pain did not return to pre-exercise levels until after 48h rest. Quadriceps maximal torque and muscle contractility were reduced from pre-exercise ($p < 0.01$), and did not return to pre-exercise levels until 24h. Early rates of torque development and muscle activation were unchanged. The amplitude and slope of the normalized quadriceps H-reflex was higher immediately after exercise ($p < 0.05$).

Conclusions

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