

The Influence of Sex Hormone Levels on Perceived Soreness 705

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It has been hypothesized that estrogen may play a protective role in skeletal muscle structure and thus soreness as a result of muscle damage. The purpose of this study was to compare the time to peak response and subjective ratings of perceived soreness (RPS) between males and females after exercise. A secondary purpose was to determine the strength of the relationship between soreness and sex hormone levels. Thirty college-age students (16 males and 14 females) served as subjects. Female subjects began testing on day 14 of their menstrual cycle. Pre-exercise fasting venous blood samples were measured for testosterone and 17- β estradiol by radioimmunoassay. Subjects completed a 20-min bout of bench stepping exercise to induce muscle soreness and then returned every 12 h for 72 h post-exercise to rate their muscle soreness with a 10 point scale. Males reported a mean (\pm S.D.) peak soreness rating of 6.06 (1.87), which was not significantly ($p > 0.05$) different from the females rating of 5.21 (2.29). When soreness ratings were analyzed by time, both males and females experienced peak levels of soreness at 36 h post-exercise. At each time point prior to 48 h, males had higher soreness ratings than females, whereas after 48 h the opposite were true. When soreness ratings were grouped by activity level, the low-activity subjects reported significantly ($p < 0.05$) higher levels of soreness than the high-activity sub-group. Correlation coefficients of .05, -.30, and -.08 represented the degree of relationship between the sex hormone ratio (testosterone to estradiol) to RPS, estradiol to RPS, and testosterone to RPS, respectively. These preliminary data suggest that sex hormone levels do not have an effect on post-exercise muscle soreness.

Section Description

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