

The Effects of Daily, Maximal Resistance Exercise on Muscular Function

by

Kristina L. Bowser

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APPROVED

Jay H. Williams, Chairman

Shala E. Davis

Kerry Redican

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Kristina L. Bowser

Jay H. Williams, Chairman

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(ABSTRACT)

Overtraining is a common problem in athletes that prevents many from becoming “elite”. A decrement in an athletes’ performance is usually an indicator that overtraining syndrome may be developing. Unfortunately, there is no model that can determine overtraining. A decline in performance results in a depression in maximum muscular force. It is not known whether the force depression is a result of central or peripheral factors. In this study, the two training protocols on different legs determined whether force declines are muscular (peripheral) or psychological (central). Specifically, in this study, the subjects trained one leg at maximal intensity for two weeks, and the other trained at a low intensity for two weeks. After training for two weeks, both legs were placed on a low intensity workout to monitor the recovery process. The purpose of this study was to observe muscle strength performance decrements after overtraining one leg in comparison to properly training the other leg by knee extension exercises for two weeks in trained males. Also, after overtraining the one leg for two weeks, the leg was placed on a reduced training program in order to look at recovery if overtraining occurred. Maximal force output was measured isokinetically on the Biodex three times: pre-, post-, and final test. An analysis of this data revealed no significant changes in maximal muscular force output after a high intensity training protocol. Therefore, this investigation demonstrated that overtraining in the quadriceps did not result from the two weeks of high intensity resistance training.