

Effects of Plyometric Training on Electromechanical Delay in Human Plantarflexor Muscles

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Background and Purposes: Plyometric training has been used on athletes to develop an explosive force. This explosive force is crucial to the competition requiring enormous power. It is believed by sports medicine personnel that effects of plyometric exercise training include neural adaptation and the efficient usage of energy, but without evidences at this point. In this study, we evaluated the effects of plyometric exercise training by measuring maximal voluntary contraction (MVC) and electromechanical delay (EMD). **Methods:** Sixteen healthy young college students without any histories of lower limb injuries in 6 months prior to recruitment participated in an 8 weeks training program. To evaluate performance baseline and changes, identical measurements of MVC and EMD were conducted (1) prior to; (2) four weeks after and; (3) eight weeks after the beginning of the training. **Results:** Significantly increases of MVC were found respectively at four week (+9%, $p=0.012$) and eight week (+18%, $p=0.012$) after beginning of training when comparing to the baseline. However, there were no significant differences in EMD after four and eight weeks training. **Conclusion:** Strengthening effects involving neural adaptation are observed before improvement of energy usage in a plyometric exercise training. (FJPT 2008;33(1):34-40)

Key Words: Plyometric exercise training, Electromechanical delay, Maximal voluntary contraction

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