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Influence of Saddle Forward and Backward on Gastrocnemius Muscle Activation During Cycling

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ABSTRACT

Body position and bicycle setup is the most important factors that contribute to success. Different body position and bicycle setup will affect the muscle activity during cycling. Cyclist should know which muscle active the most during each body position to make sure the training that been conduct is related to the muscle used. **Purpose:** The purposed of this study was to find the gastrocnemius muscle activity during cycling in each body position and at the same time in different saddle setup. There are two body position, upright position and drop position. Three saddle setup were 1cm saddle forward, 2cm saddle backward and preferred saddle setup. Furthermore, the height of the saddle was set close to 25 degree of knee angle at the bottom of the pedal. **Method:** 10 male subjects free from injury and have no history of knee and back injury was recruited in this study. Each subject cycled for 5 minutes at self chosen cadence, speed and resistance which 1 minute of electromyogram data were recorded for gastrocnemius. **Result:** The two-way ANOVA showed there are no significant different between body position, $F(1, 9)=1.250$, $p>.05$, saddle setup, $F(3, 27)=.998$, $p>0.05$, and between body position and saddle setup, $F(3,27)=1.865$, $p>.05$. **Conclusion:** Altering the body position and saddle setup forward and backward did not change gastrocnemius muscle activity. This might be happened because the height of the saddle was set as 25 degree of knee angle at the bottom of the pedal in each test. The height of the saddle adjustment due to 25 degree of the knee angle at the bottom of the pedal can reduce the affect of muscle activity during the saddle changes to forward and backward. The result, using 25 degree knee angle of saddle height is effective method to set the saddle height to improve performance and to prevent injury that claims by Peveler(2007).

Keywords : Gastrocnemius Muscle Activation, Cycling, saddle setup, body position

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