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Prior Muscular Exercise Affects Cycling Pattern.

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The aim of this study was to investigate the effect of concentric or eccentric fatiguing exercise on cycling pattern. Eleven well trained cyclists completed three sessions of cycling (control cycling test [CTRL], cycling following concentric [CC] or eccentric [ECC] knee contractions) at a mean power of 276.8 +/- 26.6 Watts. Concentric and eccentric knee contractions were performed at a load corresponding to 80 % of one repetition maximum with both legs. Before and after CTRL, CC or ECC knee contractions and after cycling, a maximal voluntary contraction (MVC) test was performed. Cardiorespiratory, mechanical and electromyographic activity (EMG) of the rectus femoris, vastus lateralis and biceps femoris muscles were recorded during cycling. A significant decrease in MVC values was observed after CC and ECC exercises and after the cycling. ECC exercise induced a significant decrease in EMG root mean square during MVC and a decrease in pedal rate during cycling. EMG values of the three muscles were significantly higher during cycling exercise following CC exercise when compared to CTRL. The main finding of this study was that a prior ECC exercise induces a greater neuromuscular fatigue than a CC exercise, and changes in cycling pattern.