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PROJECT TITLE:

The Effects of a Targeted Glute and Hamstring Warm-Up on EMG Surface Voltage During Back Squats in Female Collegiate Swimmers

The Effects of a Targeted Glute and Hamstring Warm-Up on EMG Surface Voltage During Back Squats in Female Collegiate Swimmers

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BACKGROUND: Several studies (Sotiropoulos et al., 2010; Crow et al., 2012) showed the effects of a gluteal and hamstring targeted warm-up on performance and surface voltage, however, the studies assessed jump performance rather than EMG activity. Furthermore, there is limited research about the effects of using resistance bands during a targeted warm-up. **PURPOSE:** The purpose of this project is to identify whether a gluteal and hamstring targeted warm-up with resistance bands will have an effect on surface voltage during a moderate load back squat. **METHODS:** Single leg surface voltage EMG of the vastus medialis, vastus lateralis, gluteus maximus and biceps femoris will be taken from six NCAA female collegiate swimmers. Subjects will perform a set of five tempo controlled (3-1-3-2) moderate load (60% of body weight) back squats after a general warm-up. The intervention performed after control set consists of five resistance band exercises targeting the hamstring and gluteal muscle groups. Participants will then perform another set of five back squats under the same conditions as the control set. **HYPOTHESIS:** We hypothesize that a targeted warm up with resistance bands will increase the mean surface voltage of the gluteus maximus and biceps femoris after the intervention compared to the control.