

McCormick JB, Craig AW, Duce JT, Hartman OM, Hoffart EP, Lariviere BL. THE EFFECT OF BLOOD FLOW RESTRICTION (BFR) ON QUADRICEPS MUSCLE ACTIVATION. Hardin-Simmons University Department of Physical Therapy, Abilene, TX

**PURPOSE:** To assess quadricep muscle activation via electromyography (EMG) during long arc quadriceps (LAQs) and step-up exercises with the use of the Owens Recovery Science's Personalized Tourniquet System (PTS) for Blood Flow Restriction (BFR). **SUBJECTS:** Ten (F = 6, M = 4) healthy, active subjects aged  $22.9 \pm 1.1$  were evaluated by five Physical Therapy students in

the lab. Data was collected using a 6MVIC. Data was analyzed using SPSS software using a one-way ANOVA. Results were compared between LAQ and VL exercises. Results were compared between LAQ and VL exercises.

**RESULTS:** EMG activation was analyzed for the vastus medialis and vastus lateralis during LAQ and step-ups with the use of BFR. The results of a one-way ANOVA revealed that there was no significant difference between the muscle activation of the two different exercises when looking at VM ( $F(1, 14) = 0.809, p > 0.05$ ), VL ( $F(1, 14) = 0.318, p > 0.05$ ), and the average of both VM and VL during both exercises ( $F(1, 14) = 0.042, p > 0.05$ ). **CONCLUSIONS:**