Building a Better Gluteal Bridge: Electromyographic Analysis of Hip Muscle Activity During Modified Single-Leg Bridges

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The purpose of this study was to determine a position for the single-leg bridge that maximizes activation of the gluteus maximus and gluteus medius while simultaneously limiting activation of surrounding muscles. An electromyographic (EMG) machine indicated subjects’ muscle activity during five bridging positions. Subjects performed maximal voluntary isometric contractions (MVIC) for each muscle tested. Each subject underwent EMG analysis of five muscle groups during five different, randomized single-leg bridge positions on the dominant leg. The degree of hip, knee, and ankle flexion were modified in each position. The modified bridge with the knee flexed to 135° demonstrated preferential activation of gluteal muscles compared to the traditional single-leg bridge. Hamstring activation was significantly decreased with increased degrees of dominant leg knee flexion. This position of increased knee flexion during the single-leg bridge may be used by clinicians, patients, and athletes to strengthen the gluteal muscles with more specificity.