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## Bilateral Deficit in Common Resistant Training Exercises

Everett C. Minchew, Michelle C. Furman, Kameron D. Matthews, Paul T. Cutrufello, The University of Scranton, Scranton, PA

Bilateral deficit (BD) is a phenomenon that has come to be characterized by a reduced capability of generating maximal force during a bilateral movement when compared to an identical movement utilizing a single limb. With the underlying cause remaining unknown, BD has been investigated in a variety of settings, populations, and movements. While studies predominantly employ the use of isokinetic testing, the practical applicability of BD to the more universal method of free weight training is unclear. **PURPOSE:** To examine the total number or repetitions completed during both bilateral (BL) and unilateral (UL) conditions for the dumbbell chest press, dumbbell bicep curl, leg press, and knee extension exercise. **METHODS:** Non-asthmatic, resistance-trained males ( $n=7$ ) aged 18-25 and free of cardiovascular disease served as participants for this study. 1RM was determined using the BL condition and 70% 1RM was used for BL testing and 35% 1RM was used for UL testing. A minimum of seven days after 1RM loads were determined, participants performed five sets of maximal repetitions for either BL or UL exercises in a randomized crossover design using the dumbbell chest press, dumbbell bicep curl, leg press, and knee extension exercise. **RESULTS:** Participants performed significantly more total repetitions during the UL leg press ( $22.6 \pm 6.3$ ) compared to BL leg press ( $15.7 \pm 5.1$ ;  $p = 0.008$ ). However, there was no significant difference between BL and UL total repetitions for chest press (BL= $22.9 \pm 3.8$  vs. UL= $21.9 \pm 5.1$ ;  $p=0.999$ ), bicep curl (BL= $21.0 \pm 3.3$  vs. UL= $18.7 \pm 6.3$ ;  $p=0.999$ ), or knee extension (BL= $19.3 \pm 3.8$  vs. UL= $17.3 \pm 3.2$ ;  $p=0.320$ ). **CONCLUSION:** While the present study found only leg press to be superior in total repetitions completed during the UL condition, if BD is evident in common resistance training exercises, it may be beneficial to complete such exercises in a UL fashion in order to maximize the training volume resulting in greater physiological responses (e.g. strength, hypertrophy). As BD was not evident during the chest press, bicep curl, or knee extension exercise, it is likely that balance and postural stability influenced the expression of BD during these exercises.