Identification of Asymmetrical and Suboptimal Agonist/Antagonist Strength in a Cohort of Special Forces Soldiers
John P. Abt, Shawn Eagle, Julie Y. Kresta, James F. Bakey, Timothy C. Sell, Shawn F. Kane, FACSM, Scott M. Lephart, FACSM
University of Pittsburgh, Pittsburgh, PA, US Army Special Operations Command, Fort Bragg, NC

Unilateral strength training has gained significant interest within the military as an adopted training principle. Theoretically, unilateral strength training should promote similar bilateral and unilateral agonist/antagonist synergy by limiting the dominant limb’s support of total workload.

PURPOSE: To identify asymmetrical and non-synergistic strength in a cohort of Special Forces Soldiers.

METHODS: A total of 86 Special Forces Soldiers participated. Isokinetic strength of the knee and shoulder was assessed as part of a comprehensive human performance protocol. The proportion of individual bilateral differences (> 10% difference) was calculated for each joint and variable. The proportion of insufficient strength ratios was calculated based on established normative clinical data.

RESULTS: Individual bilateral strength differences were identified in 45.1% of subjects for knee flexion and 43.1% for knee extension. An insufficient knee flexion/extension ratio was identified in 43.1% of Soldiers. Individual bilateral strength differences were identified in 45.3% of subjects for internal rotation and 35.8% for external rotation. Insufficient external rotation/internal rotation strength ratios were identified in 35.8-49.1% of Soldiers.

CONCLUSION: A high proportion of Soldiers demonstrated bilateral asymmetry > 10%. This threshold has been previously identified as a risk factor for musculoskeletal injury and may compromise physical readiness. Soldiers presenting with musculoskeletal asymmetries and/or insufficient strength ratios may be predisposed to musculoskeletal injury. Both of these scenarios may limit physical readiness at the individual and unit level. Individuals demonstrating asymmetrical or insufficient strength ratios may benefit from unilateral strength training.

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