Contralateral BFR Improves Scapular Muscle Activation. Managing Pickleball Injuries with Racquet Swings.

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Contralateral Blood Flow Resistance Improves Scapular Muscle Activation During Forehand Racquet Swings

INTRO

- Pickleball is steadily growing in popularity, and so are its associated injuries[1]. Bowman et al 2019 found contralateral blood flow restriction (BFR) to improve muscle strength, noting a possible systemic or crossover effect[2]. The study purpose is to determine if contralateral BFR affects UE muscle activation patterns during 3 sport swings.

METHODS

1. Personal tourniquet pressure and serratus anterior (SA) and lower trapezius (LT) maximum voluntary isometric contraction performed by 31 healthy young adult subjects.
2. Inclusion criteria: age 20-30 years
3. Exclusion criteria: no UE or spinal injuries in past 6 months
4. Three forehand swings of pickleball, table tennis, and tennis.
5. Repeated with contralateral upper extremity BFR at 50% occlusion[3].
6. Single cohort pre and post design analyzed average amplitude via surface electromyography from ipsilateral swing SA and LT.

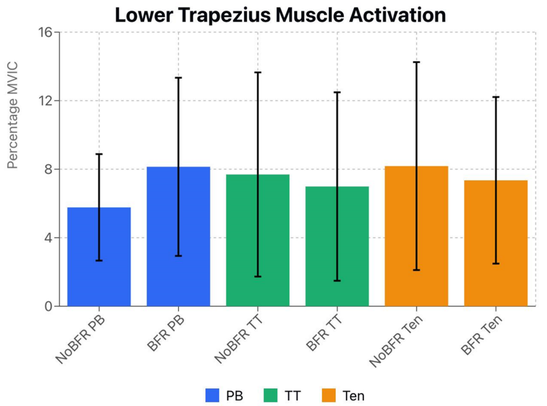




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RESULTS

Paired-sample t-test revealed significant findings with the addition of contralateral BFR during the pickleball forehand to the lower trapezius (t= 2.245, *p*=0.033), while no relationship for tennis (t= 0.381, *p*=.706) or table tennis (t= 0.753, *p*=.458).



CLINICAL RELEVANCE

Research findings can be utilized by clinicians in creating interventions for racquet and paddle athletes[4]. This can be particularly useful if the goal is scapular muscle activation during sporting activities[5].

REFERENCES/CONTACT