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SEM 129 Post-activation potentiation phenomenon in male rugby players

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Introduction: Rugby is a field sport where athletes perform repeated multi-directional muscle efforts such as sprinting, jumping, scrumming and cutting. Previous research has shown that muscle power can be transiently enhanced following heavy resistance exercise via a post-activation potentiation (PAP) effect. Complex training aims to utilise this PAP effect to improve a player's performance in game scenarios requiring high efforts of muscle power. **Methods:** This current study enlisted male (n=10), resistance trained (> 5 yr), rugby players (mean±SD; age 19±1 yr; height 1.79±0.06 m; mass 95±12 kg; body fat 15±4%) with a strength to mass ratio for a 3-RM back squat of 1.8±0.3 $kg.kg^{-1}$ BM. Following medical screening and familiarisation, volunteers performed a 3-RM back squat assessment, inclusion criteria stipulated that 3-RM load >1.5 $kg.kg^{-1}$ BM. Testing was performed on four separate occasions, with a minimum of 7 days between successive tests. Following a dynamic warm-up, participants completed a body mass squatting protocol followed by a performance test at 0, 3, 6, 9, 12 and 15 min. Following a 30 min seated rest, participants completed identical testing procedures, however, the squatting protocol was loaded to equate to each individual's 3-RM capacity. Performance tests were randomised per testing session and included an Illinois speed agility test, a counter-movement jump, the soccer T test and analysis of contractile characteristics of the dominant rectus femoris musculature using a linear displacement transducer following application of a 0.2 ms stimulating pulse (400mA at 400V). Effects of PAP on performance tests will be discussed.