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### Effects of Slow Breathing During Inter-set Recovery on Power Performance in the Barbell Back Squat

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Slow breathing (SB) techniques (e.g., 4-7-8 breathing) tend to reduce sympathetic nervous system activity, heart rate (HR), and blood pressure (BP) while increasing parasympathetic nervous system (PNS) activity, heart rate variability, and oxygen saturation. This may lead to quicker recovery between bouts of exertion and therefore attenuate normal performance decrements during resistance training. **PURPOSE:** To examine whether a SB technique using the 4-7-8 method between sets of barbell back squats (SQ) would attenuate drops in power and bar velocity in moderately trained college aged men. **METHODS:** In a randomized crossover design 18 healthy resistance-trained ( $4.5 \pm 2.4$  years of experience) college-aged ( $20.7 \pm 1.4$  years) males (height:  $178.6 \pm 6.4$ cm, mass:  $82.2 \pm 15.0$ kg) performed 5 sets of 3 repetitions of SQ at 80% 1RM with either normal spontaneous breathing (CON) or SB (using 4 second inhale, 7 second hold and 8 second exhale) during the 3-minute inter-set recovery period between sets. Peak and average power and bar velocity were assessed using a linear positioning transducer. HR recovery (HR immediately post-set – HR at end of recovery period), systolic BP (SBP: SBP immediately post – SBP at end of recovery period), RPE and rating of perceived recovery score (RS) were assessed after each set. **RESULTS:** There were no significant differences between conditions for peak and average power and bar velocity, SBP, RPE or RS ( $p$ 's>0.05). There was a significant interaction between condition and sets for heart rate in which SB resulted in improved HR recovery for sets 2 (SB:  $51.0 \pm 14.9$ bpm vs CON:  $44.5 \pm 11.5$ bpm,  $p=0.025$ ) and 3 (SB:  $48.3 \pm 13.5$ bpm vs CON:  $37.7 \pm 11.7$ bpm,  $p=0.006$ ) compared to CON. **CONCLUSION:** A SB strategy between sets of SQ was well tolerated, did not hinder nor improve performance and improved HR recovery during sets 2 and 3 in moderately trained men. **SIGNIFICANCE/NOVELTY:** SB using the 4-7-8 method is a potential inter-set recovery strategy that may improve HR recovery. Further investigations are warranted to determine SB's overall effect on different training stimuli (e.g., hypertrophy or endurance) as well as its effects over an entire workout and post-workout recovery metrics.

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