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Influence of Velotron chainring size on Wingate anaerobic test

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Abstract

Objectives: This study compared an 85-tooth versus the standard 62-tooth chainring for power outputs during a Wingate test using a Velotron electromagnetically-braked cycle ergometer. **Design**: All participants completed trials using both chainring sizes in a repeated-measures cross-over design. **Methods**: Resistance-trained male participants (n = 20, 24.6 ± 4.5 years) performed two Wingate tests separated by at least 48 hours. Peak power (PP), mean power (MP), fatigue index (FI), peak cadence, mean cadence, and total work (TW) were recorded. **Results**: Peak power was not significantly different (p = 0.10) between trials (62-tooth = 1111 ± 187 W vs. 85-tooth = 1188 ± 103 W). However, MP, mean cadence, and TW were significantly greater ($p < 0.01$) for the 85-tooth trial (869 ± 114 W, 131 ± 16 rpm, and 26,063 ± 3,418 J) compared to the 62-tooth test (673 ± 136 W, 102 ± 24 rpm, and 20,199 ± 4,066 J).