Avelar, NCP, Costa, SJ, da Fonseca, SF, Tossige-Gomes, R, Gripp, FJ, Coimbra, CC, and Lacerda, ACR. The effects of passive warm-up vs. whole-body vibration on high-intensity performance during sprint cycle exercise. J Strength Cond Res 26(11): 2997-3003, 2012-The purpose of this study was to compare the effects of passive warm-up (PW), whole-body vibration (WBV), and control (C) on high-intensity performance during sprint cycle exercise. Six recreationally trained men performed a 30-second sprint cycle test after the 3 aforementioned conditions; each test was carried out on a different day after balanced-order experimental tests. The WBV consisted of 5 minutes of squats associated with WBV (45 Hz, 2 mm). The PW consisted of 30 minutes of PW using a thermal blanket on the thighs and legs (35 W). The C consisted of 30 minutes of no warm-up with the subject lying down. Motor neuron excitability from the vastus lateralis muscle, evaluated by electromyography (EMG), was determined before exercise at rest and during sprint cycle exercise. Blood lactate levels (BLs), evaluated by spectroscopy, and muscle temperature (MT) of the thigh, estimated indirectly by measuring skin temperature, were determined at following time points: before exercise at rest (before and after experimental conditions), immediately, and 3 minutes after the 30-second sprint cycle test. Peak power, relative power, relative work, time of peak power, and pedaling cadence were significantly higher in the WBV compared with that for C (p < 0.05). Although MT was significantly greater in PW compared with that in WBV and C before exercise (p < 0.01), no significant differences were observed between the experimental conditions for BL immediately after sprint cycle exercise (p = 0.35) and in EMG during sprint cycle exercise (p = 0.16). Thus, it is plausible to suggest WBV as a method for an acute increase in high-intensity performance during sprint cycle exercise for athletes immediately before competition or training.


38. Tomaras EK, MacIntosh BR. Less is more: Standard warm-up causes fatigue and less warm-up permits greater cycling power output. J Appl Physiol 111: 228-235, 2011.
