

**THE INFLUENCE OF LOWER-BODY COMPRESSION GARMENTS ON ATHLETIC PERFORMANCE**

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The purpose of this study was to determine how custom fit compression shorts effect athletic performance. The garment is different from previously studied neoprene compressive garments and is made to be light, strong, compressive and impact absorbing and consists of 75% closed cell neoprene, 25% butyl rubber and is 3/16th inch thick. Subjects included ten men (mean height, 179.1 cm; mean age, 20.0 years; mean body mass, 74.1 kg) and ten women (mean height, 168.9 cm; mean age, 19.2 years; mean body mass, 60.23 kg) varsity track athletes specializing in sprint or jump events. Testing utilized the compressive shorts, which run from the knee to just above the waist, and loose fitting gym shorts as the control garment. Both conditions for each of a series of performance tests were conducted on the same day using a balanced, randomized block design to remove day-to-day variation. For test number one, subjects were video recorded performing countermovement jumps to measure thigh muscle oscillation. Maximum vertical and horizontal displacement of the thigh marker calculated relative to the hip and knee markers decreased significantly ( $p < .05$ ) for the compressive garment condition. For the second test, countermovement jump heights were measured with a cable transducer and vertical ground reaction force data was recorded with a force plate. Vertical countermovement jump heights were significantly ( $p < .05$ ) greater for the compressive garment condition. For the third test, skin temperature was measured using an Iso-Thermex system during a five-minute bicycle ergometer warm-up protocol. Skin temperature was significantly greater ( $p < .05$ ) for the compressive garment condition at the end of the warm-up period. These data suggest that this particular compressive garment may improve short, explosive types of athletic performance episodes by increasing vertical countermovement jump height, decreasing muscle oscillation, and increasing skin temperature during warm-up. Supported by Antibody Inc., Abingdon, MD