EFFECTS OF FOOT ORTHOSIS AND KINESIO TAPE ON SPATIOTEMPORAL AND KINETIC GAIT PARAMETERS DURING RUNNING IN INDIVIDUALS WITH FLATFOOT

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ABSTRACT

Flatfoot is a common condition that influences gait and can cause discomfort for runners during recreational activities. Identifying the most effective treatment necessitates a comprehensive analysis of each therapy's impact on gait. Our research investigated this. Twenty female rearfoot strike runners with FPI of 6 or higher participated in the running tasks at 3.3±5% m/s on the Zebris Medical GmbH treadmill. Gait data were collected under three conditions: shoe (A), shoe with Foot Orthoses (B), and shoe with Kinesiology Tape (C). A one-way repeated measures ANOVA was employed to analyzed the gait parameters during the stance phase. Under conditions B and C, the foot rotation angle significantly decreased compared to condition A. Additionally, in condition B, it was significantly lower than in condition C. In both conditions B and C, the center of pressure (COP) offset significantly reduced compared to condition A. Under conditions B and C, the peak pressure of forefoot significantly increased, whereas it in the midfoot significantly decreased, relative to condition A. Foot Orthoses and Kinesiology Tape both effectively diminish peak midfoot pressure during running. Additionally, FOs surpass KT in enhancing foot stability throughout the run. These findings offer valuable insights for the prevention of running-related injuries.

Keywords: flatfoot, insole, gait, running, biomechanics