Fatigue induces changes to running form; therefore movement is not as effective or efficient. Reducing the amount of fatigue or its effects on form would be ideal to improve performance while running. Compressive clothing has unknown effects on musculature, however it claims to reduce fatigue. The aim of this study was to see the changes in running form while running to exhaustion and to see how compression tights can effect these changes. Eleven runners ran at their current five-kilometer race pace on a treadmill to voluntary exhaustion in a repeated measures design wearing compression tights and regular shorts while their kinematics, kinetics, heart rate and rate of perceived exhaustion were recorded. There was not a significant difference in time to exhaustion. Fatigue general effects were significant from beginning to end in knee and ankle angle at initial contact with the knee becoming less extended and the ankle less dorsiflexed. Vertical ground reaction loading rate and impact peak were significantly different from
beginning to mid point and beginning to end across conditions. Heart rate and rate of perceived exertion increased significantly with fatigue as well in both conditions. Condition effects were significant in stride length and rate with a decreased stride length with compression tights and an increased stride rate with compression tights. The hip experienced a decreased range of motion in the compression tights compared to running shorts. These results indicate that there are effects of fatigue on performance and differences between conditions. These differences did not affect the overall outcome of run as measured in time to exhaustion.