

Relationships between Physical Activity and Gait During Pregnancy

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Purpose: The purpose of this study was to examine the relationship between physical activity and gait during pregnancy.

Methods: Physical activity measurement and gait analysis were performed on 7 women during the first trimester (Phase 1) and second trimester (Phase 2) of pregnancy. Physical activity was measured by the mean number of steps per day with a recording machine for 4 weeks. From the three-dimensional acceleration data obtained by a hybrid compact sensor, the time of gait cycle (stride time, step time, stance time, swing time) and the coefficient of variation (CV) with respect to each time were calculated as the gait index. The index was compared with each phase using a paired t test, and to examine the relationship between the index and physical activity, correlation analysis were performed.

Results: From Phase 1 to Phase 2, the stride time, step time, and stance time increased (p < 0.05). In Phase 2, strong negative correlations were found between physical activity and gait time, as well as between physical activity and the CV gait cycle. (r = −0.77 to −0.87). Although the index varied between the phases, the higher the physical activity, the smaller were the changes seen in gait.

Conclusion: Based on these results, physical activity during pregnancy is suggested to have a positive effect on gait.