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## » Journal Abstract

Comparison of asymmetries in ground reaction force patterns between normal human gait and football players

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The purpose of this study is to investigate the asymmetry of some temporal gait parameters and Ground Reaction Forces (GRF) in normal subjects and football players. 31 football players and 33 normal subjects participated in our study. The gait parameters were recorded by using an insole system. GRF values were recorded from the heel (Fmax1), middle feet (Fmax2), forefeet lateral side (Fmax3) and forfeet medial side (Fmax4). The subjects were asked to walk along an 8 m footpath and time versus force graphics recorded. Data were collected after exporting a worksheet program for percentage of swing and stance phase time (Tswing, Tstance), double support time (DST), and GRF values from four different parts of their feet and times to reach maximum force values (Tmax1, Tmax, Tmax3, Tmax4). Temporal parameters of both groups Tswing, T stance and DST have no statistical differences but they have no exact symmetry as well. All Fmax values were significantly high for the left side of the football players and in the control group only Fmax1 and Fmax4 were significantly high for the left side. Moreover, when comparing both groups, while for the left side Fmax3 and Tmax4 were significantly high for the football players group, Fmax1 was significantly low. For the right side only Fmax3 was significantly high for the football players. In conclusion, GRF values show asymmetry especially for the football players because of their stronger muscles coupled with the fact that they could stop and propel themselves into motion better than the control group.

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