

New methodology for a correct gait

Carlotta Oro Nobili, Antonello Ciccarelli, Elena Mannacio, Maurizio Ripani

Department of Human Movement, Social and Health Sciences, University of Rome "Foro Italico", Roma, Italy

A proper biomechanics of the foot is fundamental for the maintenance of posture and for a symmetrical distribution of plantar pressures. It 'been shown that high plantar pressures are greater risks of damage to be covered by the same foot that the anatomical structures involved in the above processes postural(1). Thus numerous studies have investigated the effectiveness of orthotics that, by increasing the contact surface between the foot and the ground, they were going to decrease the load associated with certain anatomical districts(2). The aim of our study was to evaluate, through static and dynamic baropodometry, the effectiveness of the regular gait, a new support that has the task of stabilizing the arch of the foot in static and to allow proper movement of the same. These subjects underwent rating scales and baropodometric examination before and after using the orthotics. It was carried out both the analysis monopodalic, for the evaluation of the effectiveness of the insole in the redistribution of pressures between different zones of a same foot, both the bipodalic for the evaluation of the symmetry in the distribution of the pressures between the different feet. The results obtained, subjected to statistical analysis for significance, show that the insole, to how it was designed, is able to restore a correct distribution of the parameters both in analysis monopodalic that bipodalic and both in static and dynamic conditions. These redistributions, in addition, also remain in the tests post-treatment without footwear, showing that the particular conformation of the plantar, with supports positioned in specific districts of the arch of the foot, is able to stimulate the proprioceptors present therein and therefore to enable a reorganization at the central level . This reorganization allows the subject treated with the regular gait to maintain the morphology and the smooth running of the propeller breech during movement not only while wearing the insole, but also after it has been removed.

References

- [1] Josè Luis Pimentel Rosario. A review of the utilization of baropodometry in postural assessment. *Journal of Bodyork & Movement Therapies* (2014) 18, 215-219
- [2] Bao-Chi Chang, Ding-Hao Liu, Jeffrey Liao Chang, Si-Huei Lee, Jia-Yi Wang. Plantar pressure analysis of accommodative insole in older people with metatarsalgia. *Gait & Posture* 39 (2014), 449-454

KeyWords

Plantar; proprioception.