

Effects of a new system of postural realignment (HBP): evaluation through the sensorizer

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Orthosis are external aids designed for different postural problems and represent the most commonly used conservative treatment (Noonan K et al., 1996). In this analysis, a modular exoskeleton named Human Body Posturizer (HBP) has been tested to evaluate parameters related to the gait cycle and thus any positive effects on balance

A sample of 20 normal subjects, 10 male and 10 female (age: 24.8 ± 1.83) who had no previous or current diseases of the bones, joints and muscles have been considered. They wore the HBP for thirty days, three times a week for 30 minutes and then performed a motor task final. The Sensorizer C1-S has been used to analyse their motor task before and after the use of HBP. Regularity of the step, the step symmetry and regularity of the double step were the parameters analyzed in this study.

In normal subjects, all three parameters analyzed statistically with the t-test showed a significant change after wearing the HBP resulting in a positive effect on the balance.

The results of this study suggested a general improvement of the balance during walking. Symmetry and regularity of the step parameters are fundamental and predictive of the risk of falls (Tura et al. 2010). An improvement of these parameters is associated with a better balance, since low values may be associated with postural imbalances and asymmetries in the way. Further studies will be performed in order to demonstrate the efficacy of this device on elder patients.

References

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Key words

Human body Posturizer, gait, orthosis, posture.