

Hippotherapy improves gait and balance in Down Syndrome

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Patients with Down syndrome (DS) present delays in motor development, showing a unique pattern of locomotion in clinical settings. Hippotherapy (HBR) is a field of rehabilitation therapy to achieve physical, social, and psychological well-being through therapeutic horse riding, providing a new stimulus related to gait and may helping balance and postural control [1], [2]. Herein, we have enrolled fifteen male individuals affected by DS, aged from 19 to 36 years old. All patients were vaccinated for tetanus and previously screened for any contraindications to practice HBR. The HBR protocol included a six-months period of horseback riding exercise, performed weekly. Before, during and after the study period, functional mobility, strength and performance in balance were assessed by Time Up and Go Test (TUG), 30s Chair-Stand-Test (30CST), MRC-scale and the Berg-Balance-Scale (BBS). Furthermore, the OPTO-Gait for dynamic analysis and the Diasu Ultrasensor systems for static analysis were applied at the same timepoints, in order to assess the HBR effects on movement reaction time, muscle activation, functional mobility, muscle strength and balance in DS. In conclusion, we provided objective clinical data on the role of HBR to determine a functional improvement on gait speed, rhythm, width, bilateral symmetry, gross motor function and balance in DS..

References

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