

Current issue

Archival Issues

Volume 27, 2010
Volume 26, 2009
Volume 25, 2008
Volume 24, 2007
Volume 23, 2006
Volume 22, 2005
Volume 21, 2004
Volume 20, 2003

Search

Newsletter

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Journal Abstract

The effect of rehabilitation exercises on the gait in people with Down syndrome

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Objective: The following question was set: Do special exercises decrease disturbances of gait in people with Down syndrome and allow for spacio-temporal parameters closer in values to the variables achieved by healthy people? The research involved 10 persons with Down syndrome, including 9 male pupils and 1 female pupil of the Complex of Special Schools in Cracow, Poland, aged 16-22, with the average age of 17.8 ± 2.69 . All the subjects had documented moderate and considerable mental handicap, with the average IQ equalling 37.6 ± 4.29 , measured in the Terman-Merrill scale. **Background:** People with Down syndrome have problems with keeping their balance, both while standing and walking. The dysfunction of lower extremities, manifesting itself in a gait different from the norm of healthy people, releases compensation mechanisms levelling disturbances and leading to unavoidable overloads, and in consequence to the damage of different segments of the locomotor system. **Methods:** Vicon 250, a computerized system of a three-dimensional analysis of motion, connected with five video cameras working in infrared was implemented to assess the parameters of gait. **Results:** All the spacio-temporal parameters of gait in people with Down syndrome were significantly improved after the period of rehabilitation, and in the case of step frequency equalled the norm of healthy people. **Interpretation.** The implementation of additional exercises affects the improvement of the gait parameters of mentally handicapped people, suffering from Down syndrome.

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