Gait analyses by children with the Angelman syndrome, what is achievable?


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Most children with Angelman syndrome (AS) are able to walk independently or with support. On average they start to walk between the age of two years and six years old. Their gait is characterized by a wide base of support, limited trunk rotation, increased lumbal lordosis, flexion of the knees and hips and no heel strike, forefoot placement.

During puberty, parents have difficulties in stimulating their child to walk and often report a regression in their child’s walking abilities.

Most descriptions of the gait are subjective, which makes it difficult to give a valid and reliable judgement about the current gait pattern and changes therein. The current standard for gait pattern analysis is the gait laboratory. We started this study to assess the feasibility of objective gait analysis in children with AS.

Ten children with AS between four and 18 years old participated in this study. The studygroup consisted of children who were able to walk without support and children who walked with a (posterior) walker or with support from a parent. They underwent an extensive gait analysis in the gait laboratory, and they also walked on the GAITRite®.

All children completed the assessment on the GAITRite®. Three children completed the total gait analysis in the gait laboratory, seven children completed the extensive gait analysis partially. The main reason for the incomplete analyses was not accepting jointmarkers and/or electrodes for EMG registration.

Gait parameters (i.e. step length) that were analyzed will be discussed during the presentation, as well as the differences between the gait analyses at the GAITRite®, and in the gait laboratory. We will discuss under which circumstances objective gait analyses in AS are feasible, and which parameters are most promising.