

1677

## **Characteristics of functional hand use in children with hemiplegic cerebral palsy.**

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### **Introduction**

Most daily life tasks demand the use of two hands, such as buttoning a jacket, preparing a sandwich, or playing with Lego blocks. The most important aspect of hand function for people with a unilateral disability subsequently turns into how the two hands can be used together in bimanual performance. The Assisting Hand Assessment (AHA) was developed to measure and describe how effectively a person with a unilateral disability uses the affected hand collaboratively with the well-functioning hand. The AHA is found valid and reliable for use with children between 18 months and 12 years of age, with the age ranges currently being expanded to include younger children, adolescents and adults. By applying the Rasch measurement model to develop the AHA, test item hierarchy was established. This hierarchy can be used to describe functional aspects of bimanual hand use.

### **Objectives**

To tease out and describe functional characteristics of hand use in children with hemiplegic cerebral palsy and to discuss what behaviours distinguish different ability levels of functional hand use.

### **Methods**

363 Assisting Hand Assessments performed with children with congenital hemiplegia aged 18 months to 12 years old were analysed and arranged according to functional descriptors.

### **Results**

Four groups of significantly different hand use behaviours were identified. These groups were created by the children's response patterns on the AHA test items and grouped from their item difficulty calibrations. The test items that were found useful to describe hand use for different ability levels will be reported.

### **Conclusion**

The AHA can be used to create functional descriptions of bimanual hand use in people with congenital hemiplegia.

### **Contribution to the practice/evidence base of occupational therapy.**

Commonly hand function is described from body function level capacity measures like joint alignment, muscle tone or dexterity. By using the structured observation and scoring of bimanual activity utilized in the AHA not only an evaluative measure is created but also a functionally oriented description of hand use. This is related to a person's typical performance as oppose to best capacity. These descriptors relate to activity performance and as such are suitable to OT practice.