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The Use of the Dyskinesia Impairment Scale by less experienced raters: a reliability study

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SCIENTIFIC BACKGROUND:
The Dyskinesia Impairment Scale (DIS) is a new scale for measuring dystonia and choreoathetosis in dyskinetic CP.

OBJECTIVES:
Differentiation of dystonia and choreoathetosis is complex and application of the scale may require clinical experience with dyskinetic CP. This study aims to examine the reliability of the DIS in less experienced raters.

METHOD & SUBJECTS:
Twenty-five patients (17 males; age range 5-22y; mean age 13y6mo; SD 5y4mo) were included. Two junior physical therapists (PTs) and three senior PTs with limited experience in recognizing and discriminating dystonia and choreoathetosis, were trained in scoring the DIS. Afterwards, they independently scored all videotaped patients using the DIS. Reliability was assessed by (1) intraclass correlation coefficient (ICC) (2) standard error of measurement (SEM) and minimal detectable difference (MDD) and (3) Cronbach’s alpha for internal consistency.

RESULTS & DISCUSSION:
ICCs for the total scores of the DIS dystonia subscale, the DIS choreoathetosis subscale and the total DIS were 0.82 (95% CI=0.62-0.91), 0.88 (95%CI=0.75-0.95) and 0.88 (95% CI=0.74-0.94) for the junior PTs. For the senior PTs, ICCs were 0.71 (95% CI=0.52-0.85), 0.91 (95% CI=0.83-0.95) and 0.88 (95%CI=0.78-0.94) respectively. SEM and MDD values for the total DIS were 6% and 15% for the junior PTs and 4% and 12% for the senior PTs. Cronbach’s alpha ranged between 0.87 and 0.95 for the junior PTs and between 0.76 and 0.93 for the senior PTs.

The less experienced raters, both junior and senior PTs showed sufficient reliability. Still lower reliability, in particular for the dystonia subscale, and internal consistency was found compared to experienced raters. SEM and MDD values were also higher. This indicates that the scale can be used by less experienced physical therapists but good acquaintance of the operational definitions of dystonia and choreoathetosis is crucial to enhance the reliability.

**Keywords:** Cerebral Palsy, Dystonia, Choreoathetosis, Dyskinesia Impairment Scale, Reliability