

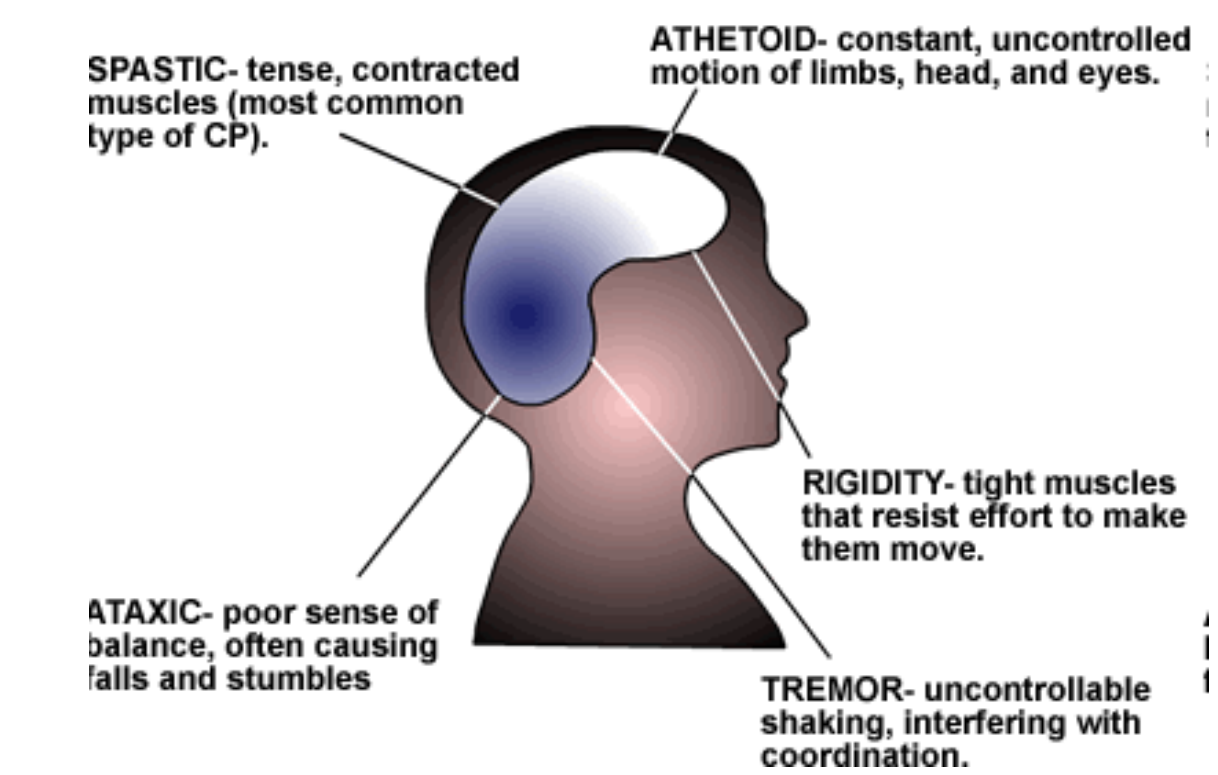
RELIABILITY OF BALANCE EVALUATION IN CHILDREN WITH CEREBRAL PALSY

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TYPES OF CEREBRAL PALSY



AIM:

The evaluation of balance in children with cerebral palsy (CP) is an extremely difficult and complex procedure. Even more difficult is the evaluation of the intervention to these subjects. Varied methods of balance evaluation have been mentioned but none has clinical utility and application in children with CP. The purpose of the present study was the evaluation of three balance tests: Berg Balance Scale (BBS), time up and go (TUG) and Bruininks-Oseretsky Test of Motor Proficiency (BOTMP) and their reliability in children with CP.

METHODS:

The control of the reliability of the tests was based on the successive application to twenty children with CP within a short period of one day and one week in order to substantiate their ability to give the same results in a stable sample (test-retest reliability). The statistical analysis was based upon the analysis variance in relation with the two factors (two-way ANOVA).

RESULTS:

No difference was found according to the performance between the measures but important statistical differences were found of the performances of the children in all the three tests considering the type of their CP.

CONCLUSIONS:

The tests BBS, TUG and BOTMP are considered to be reliable and valid tests, able to objectively define the quantitative mutation of the balance of the child in test with CP.

REFERENCES:

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Measurement	SEM	CV% (M.O.±T.A.)	LOA
1 st & 2 nd	0	0.00 ± 0.00	0.00 ± 0.00
1 st & 3 rd	0.22	0.13 ± 0.39	0.10 ± 0.64
2 nd & 3 rd	0.22	0.13 ± 0.39	0.10 ± 0.64
1 st & 2 nd & 3 rd	0.18	0.10 ± 0.32	0.07 ± 0.54

Table 1. Standard error (SEM), coefficient of variation (CV%) and limits of agreement (LOA) of the values among the different measurements of BBS

Measurement	SEM	CV% (M.O.±T.A.)	LOA
1 st & 2 nd	0.19	1.10 ± 1.03	0.01 ± 0.56
1 st & 3 rd	0.32	1.84 ± 2.13	0.08 ± 0.95
2 nd & 3 rd	1.29	1.76 ± 2.79	0.07 ± 1.18
1 st & 2 nd & 3 rd	1.00	1.70 ± 1.99	0.05 ± 0.92

Table 2. Standard error (SEM), coefficient of variation (CV%) and limits of agreement (LOA) of the values among the different measurements of TUG

Measurement	SEM	CV% (M.O.±T.A.)	LOA
1 st & 2 nd	0.46	4.33 ± 6.40	0.30 ± 1.37
1 st & 3 rd	0.26	1.76 ± 4.34	0.15 ± 0.77
2 nd & 3 rd	0.35	2.57 ± 4.59	0.15 ± 1.02
1 st & 2 nd & 3 rd	0.39	3.43 ± 4.98	0.10 ± 1.14

Table 3. Standard error (SEM), coefficient of variation (CV%) and limits of agreement (LOA) of the values among the different measurements of BOTMP

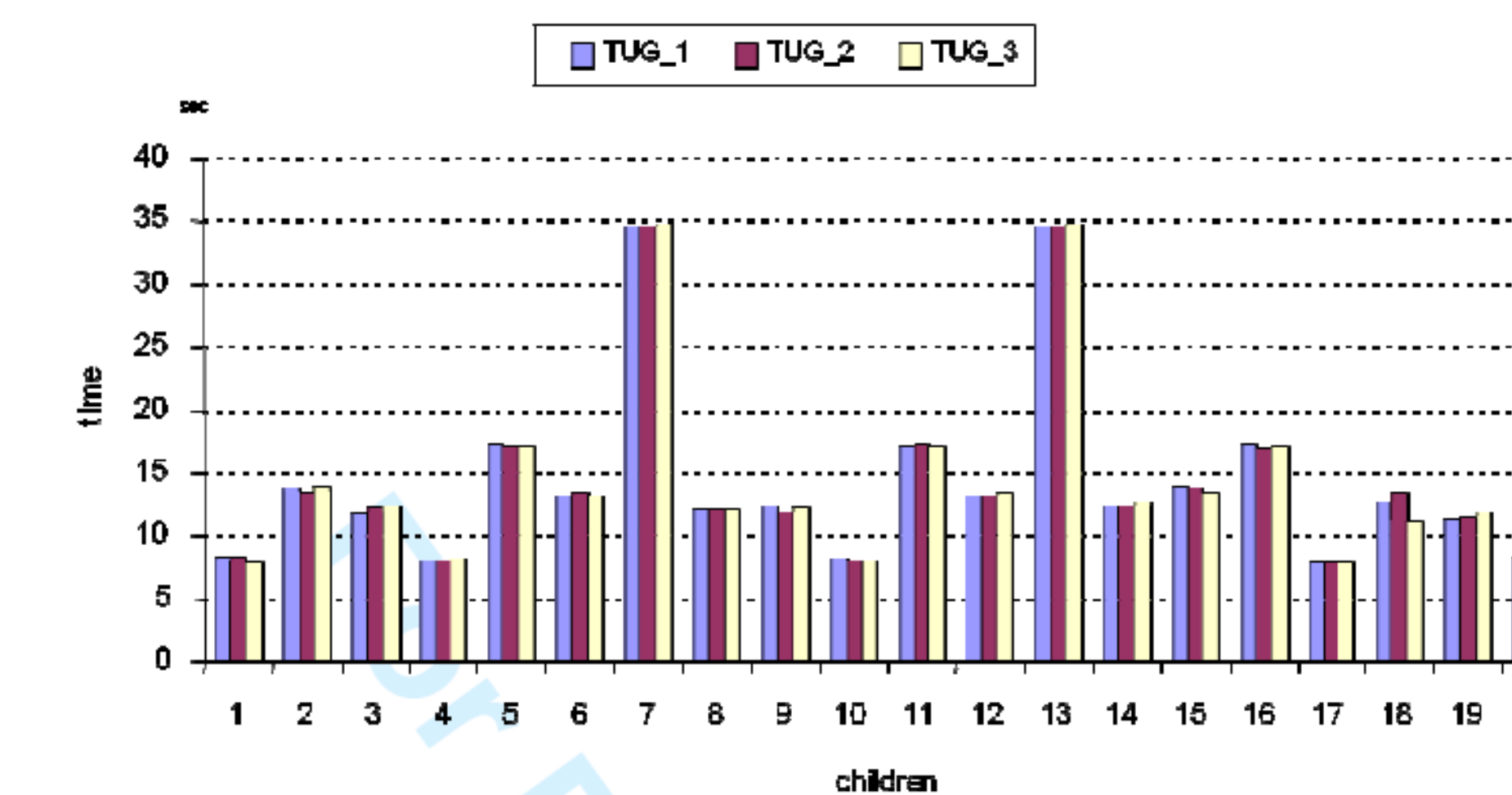


Figure 2. Average performances (time) of children in Time Up and Go (TUG) test in the three different measurements

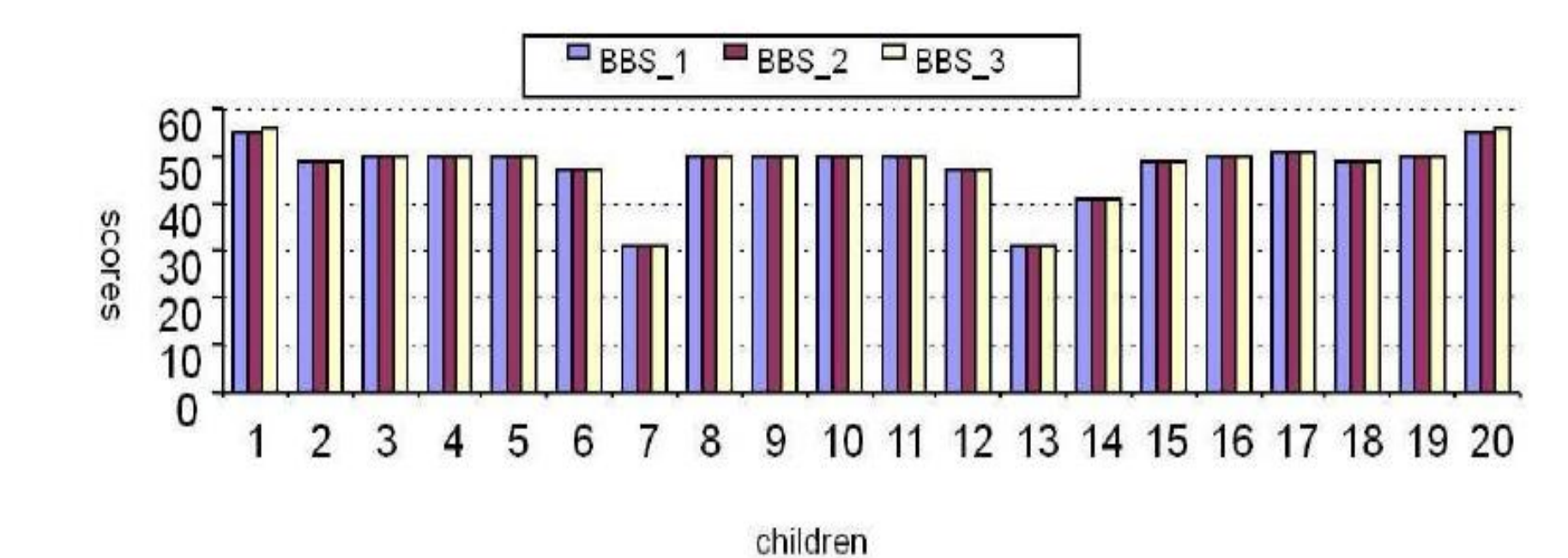


Figure 1. Scores in Berg Balance scale (BBS) test in the three different measurements (BBS_1, BBS_2, BBS_3, respectively)

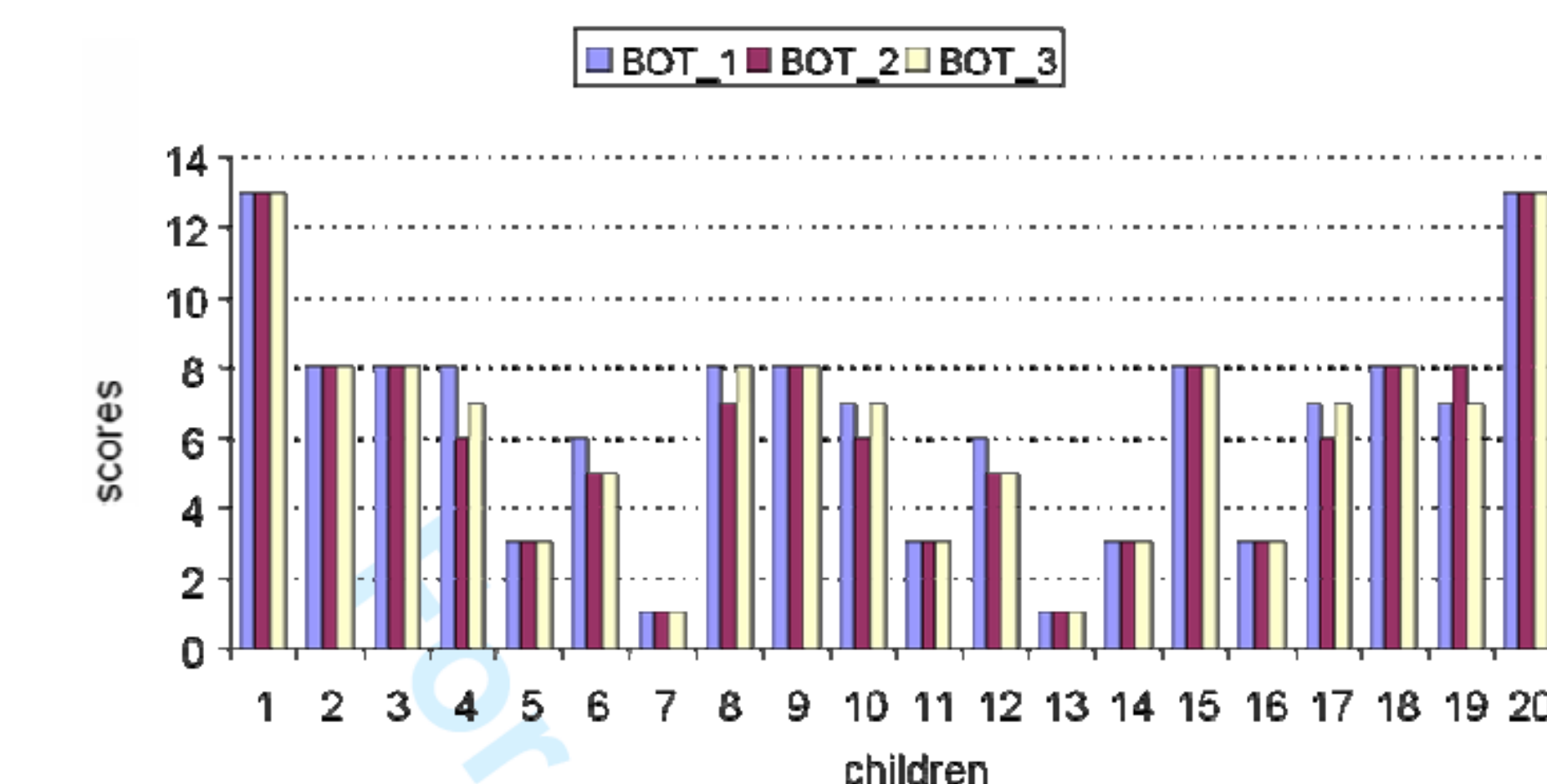


Figure 3. Average performances (score) of children in Bruininks-Oseretsky test of Motor Proficiency (BOTMP) test in the three different measurements