

Development of the Japanese Playful Assessment of Neuropsychological abilities: Correlations between test scores and age in equilibrium tests, antigravity posture tests and of somatosensory tests

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Introduction: The Japanese Academy of Sensory Integration is developing a new test, tentatively called the Japanese Playful Assessment of Neuropsychological abilities (JPAN). For future clinical use, reliability and validity of the JSIT must be examined, as well as confirmation of the relationship between age and test scores.

Objective: The purpose of this study was to examine correlation between age and equilibrium, antigravity posture and of somatosensory test scores in the JAPAN.

Methods: The subjects were 414 children aged 4 to 10. Trained Occupational Therapists administered the JPAN to each child individually. Correlations between age and the scores of the 5 equilibrium tests, 2 antigravity posture tests and 7 somatosensory tests were examined using Pearson's correlation test.

Results: There were significant correlations ($p < 0.001$) between test scores of JPAN and ages except in 1 somatosensory test. The tests and correlation coefficients of each test were as follows; equilibrium tests- tandem walk on footmark ($r = 0.214$), trunk rotation ($r = 0.513$), one arm and one leg balance ($r = 0.399$), standing balance with eyes open ($r = 0.588$), standing balance with eyes closed ($r = 0.400$); antigravity posture tests- prone extension ($r = 0.434$), supine flexion ($r = 0.586$); somatosensory tests- touch sense of materials ($r = 0.283$), discrimination of column's width by pinch ($r = 0.357$), discrimination of sponge's softness by pinch ($r = 0.324$), kinesthesia of arm ($r = 0.06$, no significance), identification of touched finger ($r = 0.436$), awareness of light touch ($r = 0.317$), and seek the swelling ($r = 0.552$).

Conclusion: Since most scores of JPAN tests had significant correlation with ages, these tests could be used to evaluate the development of equilibrium, posture, and somatosensation of the subjects. In order to confirm the usefulness of JPAN to evaluate children with developmental disorders, further study should be conducted.

Contribution to practice: Above tests in the JPAN would contribute to identify the development of sensory processing in children with developmental disordered