

Target of this Study

Spatial perspective taking is assumed to be a form of imaginary body movement in three-dimensional space and might deeply relate to the impairments of spatial abilities in apoplexy sequelae patients. The developmental studies suggest older children and younger adults would have a high competence of this ability compared to younger children or older adults (Inagaki et al., 2002). **Then, how are the patients inferior?** To answer this question, an easy test to be applicable to patients is needed without the ceiling effect in young and healthy adults. At the same time the test should be sensitive to the change of the ability. This study aimed to develop such a screening test of spatial perspective taking ability (**FRT-R**). The validity of the test was examined from two experiments below.

【Experiment 1】 Screening standard (cutoff values) 【Experiment 2】 Longitudinal change of the test scores

FRT-R (Face Rotation Test-Revised)

(1) A face like figure was drawn on a liquid crystal touch screen of notebook computer, (2) each eye lit with a different sound, (3) Ss were directed to remember the correspondence, (4) the face figure was randomly rotated in units of 45 degree with either sound, and (5) Ss answered the corresponding eye to the sound with tapping on it. The reaction time from (4) to (5) was measured automatically by the computer. An original Windows program controlled the system. One trial consisted of 16 questions, which were two pairs of light & sound × eight viewpoint locations (face rotation angle in units of 45 degree).

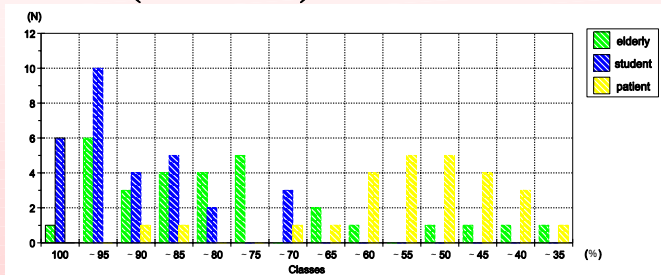


Experiment 1

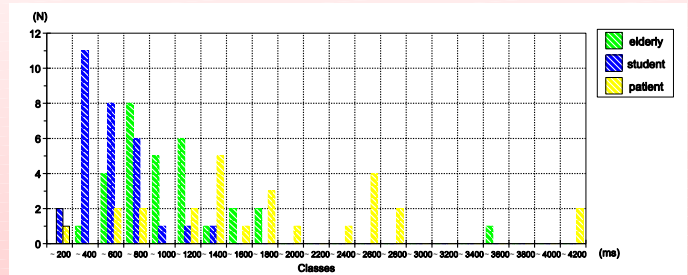
Subjects

Thirty university students from 19 to 23 years, 30 elderly persons from 61 to 81 years, and 26 sufferer from after effect of apoplexy from 51 to 79 years participated. Neither students nor elderly have serious disorders. Each did three trials or more in one day.

Results (Cutoff Values)



correct answer rate; **80%**



response time *; **1800 milliseconds**

Response time means the discrepancy between the biggest and the smallest mean response time in viewpoint locations.

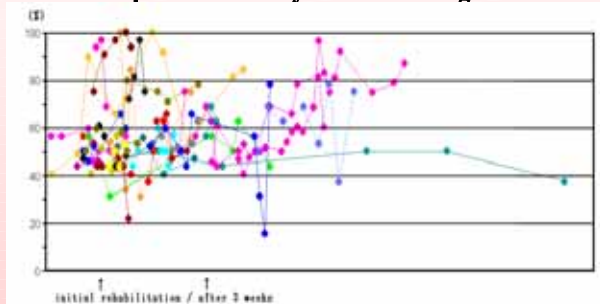
Experiment 2

Subjects

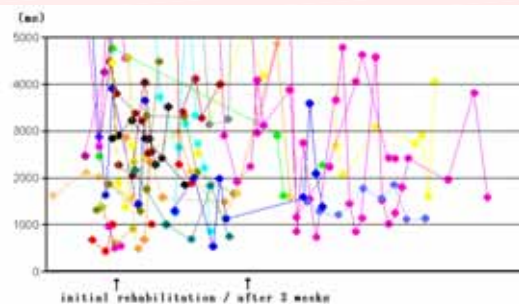
Twenty-three patients of Experiment 1 participated in succession more than three days (maximum of 22 days) until leaving hospital.

Results

Dramatic improvements may start in the cognitive functions **three weeks after the initial rehabilitation**.



correct answer rate



response time



Conclusion

The rehabilitation in the acute phase of apoplexy is important for satisfactory convalescence.

At the three weeks after the initial rehabilitation it is possible to confirm whether cognitive recovery will be hoped. Patients vary greatly in test scores according to their lesions.

In the next step FRT-R should be applied to a patient with a serious disease who has the difficulty in even tapping on the screen.