

Psychophysiology of Mental Retardation

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The aim of this presentation is to compare the motor performances and the movement-related brain macropotentials of nine male subjects with Down's syndrome, aged 23 years with a mental age of 10.2 years, with those of two control groups matched to the retardates' chronological and mental age. A self-paced, voluntary, goal-directed task was employed and consisted in calculating a time interval of 40 to 60 msec by pressing two buttons. Subjects with Down's syndrome had great difficulty in organizing and timing a correct temporal sequence of ballistic movements. They were much slower, less accurate, and achieved a smaller number of target performances. These behavioral patterns were associated with movement-related brain macropotentials altered in amplitude and latency. The potentials related to programming movements and processing reafferent sensory information were absent, and those involved in the evaluation of the outcome of the performance were reduced.