**2D11-1** Attentional resource allocation in children during the dual-task of the tracking performance and the P300 amplitude

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**Objective:** To determine the amount of attentional resources allocated to a task by the intrinsic demands, of the task load or the difficulty of the task. In this study, the effects of resource allocation on the auditory P300 in children were investigated in an inter-modal situation using a dual-task methodology. **Methods:** Eleven healthy adults and twenty-five children participated under three different conditions: a dual-task condition, a tracking-only condition, and an oddball-only condition. Under the dual-task condition, adult and children subjects concurrently performed both a visuomotor tracking task and an auditory oddball task. The remaining subjects performed either the auditory oddball task under an oddball-only condition or the visuomotor tracking task under a tracking-only condition. In the tracking task, the subjects tracked the target line that was presented on a monitor and automatically moved with the line, representing their own force generated by a grip movement using their left hand. **Results and Discussion:** Children performed the lower omission error rate and the RT came later. The tracking accuracy and omission error rate were lower and the RT came later in both adults and children. However, the P300 amplitude in the dual-task condition in children was not reduced compared to those in the oddball-only condition. The results suggested the attentional resource in children might be allocated by the individually different strategy. **Key words:** child, dual task, P300, attentional resource

**2D11-2** Changes in excitabilities of the spinal motoneuron in uppers limb with postural change.

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**Purpose:** The purpose of this study was to investigate the excitabilities of spinal motoneuron of the upper limbs with postural change using F-wave. **Method:** Nine healthy male subjects volunteered to participate in this study. First, subjects hold supine posture for 5 minutes (supine1). After the supine, subjects changed posture to standing position and maintain for 5 minutes (standing). And then, subjects got back to supine posture and hold for 5 minutes (supine2). Abductor pollicis brevis muscle F-wave were elicited by electrical stimulation to the median nerve in regio carpalis anterior. The F-wave parameters measured included occurrence rate, mean latency and mean amplitude with the maximal direct motor response (F/M ratio). **Results and Discussion:** F-wave occurrence rate were significantly higher (P<0.05) in standing than supine1 and supine2. There were not significant difference in the latency and the F/M ratio. Results of this study suggest that changes of the somatosensory inputs from muscle and/or joint in lower limbs with postural change affect excitability in spinal motoneuron of unrelated muscles in postural change and maintain. **Key words:** posture, excitability of spinal motoneurons, F-wave