

# **AGE-RELATED CHANGES OF RESTING EEG, AUDITORY EVENT-RELATED POTENTIALS AND CNV**

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The effects of aging were investigated on resting EEG and N2 and P3b components of auditory event-related potentials (ERPs) and the CNV in a go-nogo paradigm.

The participants (age span: 19-68 yrs, n=65) were divided into 5 age-groups. EEG was recorded in eyes open and eyes closed conditions. In the go-nogo paradigm the task was to stop a series of tones by button press when a 2000 Hz warning stimulus was presented, and not to respond if this stimulus was a 1000 Hz tone. Nonlinear prediction (Pred), Omega-complexity (OM) and Synchronization likelihood (SL) were calculated for the analysis of the complexity of the CNV. The frequency spectra were determined in the conventional frequency bands.

Pred decreased with aging in the resting EEG, and the difference in SL between anterior and posterior areas increased in the elderly. The latency of the P3b component increased, and its amplitude decreased with age. Go-nogo condition x age interaction was not found. In the task condition a CNV was elicited, which began to decline after a short period excepting the youngest group. Go-nogo x condition x age interaction was found for OM: it decreased in young, while it increased in the elderly in the task condition.

Our results indicate structural changes of the brain in the elderly as verified by complexity changes of the resting EEG. The decline in the amplitude of the P3b component and the CNV refers to decreasing information processing resources in the elderly.