

Saccadic modulation of cell discharges in the lateral geniculate nucleus

Montero, Vicente M.

Robles, Luis

The effect of fast phases of vestibular nystagmus on evoked and spontaneous discharges of neurons in the lateral geniculate nucleus of the rat have been studied. In order to determine the central influence of saccadic activity, the receptive fields were stimulated in a fixed eye after sectioning the extraocular muscles. Data analysis was carried out using a LINC computer. Results show that the probability of firing of "concentric" cells decreases at about 30-40 msec to 160-200 msec after the onset of saccades, under a wide range of illumination and with different visual patterns. The effect was the opposite for "on-off" type of cells i.e. an increase in discharge frequency occurred with a maximum at about 150 msec after saccades. Directional cells were affected by saccades depending upon their preferred directions. The time-course of the effect correlates with the saccadic slow waves in the LGN (previously described), and with the psychophysical saccadic suppression phenomenon, when la