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### Title

ETHANOL AND AUDITORY EVOKED-POTENTIALS IN RAT AND MAN

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**13. Squires, K., Chu, N-S., & Starr, A.** (University of California at Irvine) **Ethanol and auditory evoked potentials in rat and man.** Auditory evoked potentials were recorded from rat and human subjects under various regimens of ethanol administration. Acute effects of ethanol on brainstem potentials were determined in rats and in man. In man the acute effects of ethanol on mid-latency (20–50 msec) and long-latency (50–200 msec) cortical potentials were also studied. In an additional study rats were followed through successive stages of acute and chronic intoxication, withdrawal from ethanol, and recovery over a 6–8 week period.

Standard procedures were used for obtaining click-evoked potentials from skull screw and scalp electrodes in rat and man, respectively. A standard ethanol dosage for each species was sufficient to induce a blood-alcohol level of 100–150 mg % at the time of evoked potential recording. Ethanol in a 20% solution was administered to the rats via a gastric tube and taken orally by the human subjects. The rats were maintained on a balanced nutritive solution during the chronic study.

In the rat the acute effect of ethanol was a cumulative increase in the latencies of successive brainstem potential peaks, as compared to a pre-ethanol control condition, beginning within the first 2 msec after stimulus onset. Peak-to-peak amplitude measures of the potentials were unaffected by alcohol, however there was an overall shift of the peaks to less positive voltages. These latency and amplitude changes could be differentiated from an effect of variations in stimulus intensity.

A similar acute effect of ethanol on the brainstem potentials was found in man, along with changes in the mid- and long-latency cortical potentials.

The acute effect of ethanol on the brainstem potentials in the rat was maintained throughout the chronic phase of the long term study, changing to a latency decrease during withdrawal. Three to six weeks were required for full recovery to normal latencies.