

Effects of increased sodium appetite on neural activities in the gustatory cortex of monkeys during the salt-water discrimination GO-NOGO task.

-Alterations in salt-water discrimination of monkeys by intraventricular administration of angiotensin II-

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Summary

Three Japanese macaques (*Macaca fuscata*) were trained to perform a salt-water discrimination GO-NOGO task. In this task, 0.1 M NaCl (0.5cc) was infiltrated into the mouth as a cue for lever pressing (GO task), and water (0.5cc) as a cue for a NOGO task. When monkeys behaved correctly in responding to the cues, they received 0.3 M sucrose (0.5cc) as a reward. In two of the monkeys, Evarts-type cylinders and intraventricular cannulae were aseptically implanted on the skull under anesthesia with nembutal and ketamine. After the surgery, the monkeys were trained again, and tested for lower concentrations of NaCl.

Effects of intraventricular administration of physiological saline (20 μ l/5 m) and angiotensin II (Peptide Institute, human, 5-7.5 μ g in 20 μ l/5 m) were studied on the salt-water discrimination GO-NOGO task. Physiological saline increased the ratio of the correct responses to lower concentrations of NaCl, say 0.01 M, and decreased the reaction time from the cue to the lever pressing for the first 20 or 30 m from the onset of the administration. On the other hand, angiotensin II decreased the ratio of correct responses to lower concentrations of NaCl, and increased the reaction time for the initial 20 m.

It is suggested that angiotensin II affected gustatory nervous system in coding lower concentrations of NaCl, possibly through the action on periventricular nuclei, e.g., the subfornical organ.