

PsychSim 5: HUNGER AND THE FAT RAT

Name: _____ Section: _____

Date: _____

This activity provides a simulated experiment on weight regulation in rats.

The Hypothalamus

- What are the two techniques used to study hypothalamic dysfunction? How do they differ?

Electrolytic surgery, involves inserting a thin electrode into a selected region of the brain. After the electrode is in place, an electrical current is passed through the uninsulated tip of the electrode. There are two different ways to study hypothalamic dysfunction using this technique.

Stimulation—If the electrical current passed through the electrode is weak, the target region of the brain is stimulated but not damaged. Generally, this stimulation crudely activates the type of behavior controlled by the target region; if the target region's function was to inhibit a behavior, then that behavior will occur less frequently during the stimulation.

Destruction—If the electric current passed through the electrode is strong, the target region of the brain is damaged. This destruction is called a lesion. A lesion generally suppresses or disrupts the type of behavior associated with the target region; if the target region's function was to inhibit a behavior, then that behavior will occur more frequently or in an uncontrolled fashion after the lesion.

Experimental Simulation

What conclusions were you able to draw about the effects of the following procedures on the experimental rats:

- Stimulation of the lateral hypothalamus (LH)?
Causes overeating
- Destruction of the LH?
Causes undereating.
- Stimulation of the ventromedial hypothalamus (VMH)?
Causes undereating
- Destruction of the VMH?
Causes overeating