

*Observational VS. Experiment Study*Vocabulary:

1. Experimental group: a group of individuals who undergo a procedure or treatment.
2. Control group: a group that does not undergo the procedure or treatment.
3. Observational study: individuals are observed and variables of interest are measured, but there is no attempt to influence the responses. The assignment of individuals is outside the control of the investigator.
4. Experimental study: some treatment is deliberately imposed on the experimental group in order to observe their responses. The investigator assigns the individuals to the experimental or control group.

Examples:

For questions 1 and 2, determine whether the study is an experimental study or an observational study. Explain your reasoning.

1. A scientist wants to study the effects that a nutritional supplement has the growth of mice. The weight of each mouse is recorded daily. The control group consists of mice that do not receive the supplement. The experimental group consists of mice that receive a safe amount of the supplement.
2. You want to study the effects that using a calculator has on the time it takes to complete a math test. You record how long it takes a student to complete the test. The control group is students that choose not to use calculators. The experimental group is students that choose to use a calculator.

exp. b/c mice are receiving a Supplement

obs. b/c we are aren't choosing who gets calc.

For questions 3 and 4, identify any flaws in the experiment given and describe how they can be corrected.

3. A researcher conducts an experiment to see if a new medication is effective in preventing strokes. An experimental group of lawyers suffers more strokes than a control group of professional tennis players.

-compare two groups of lawyers.

4. You conduct an experiment to see if parents make their children wear seatbelts. You have a police officer ask the question to a large group of parents.