

Experiments: Identifying Variables and Groups

In each of the examples, identify the **independent variable** and **dependent variable** as well as which participants make up the **experimental group** and which make up the **control group**.

Remember:

Independent Variable = What the investigator manipulates; the particular treatment or condition the investigator is most interested in the effects of

Dependent Variable = What is measured or observed; the "data" collected in the experiment

Experimental Group = Those participants exposed to the independent variable

Control Group = Those participants treated just like the experimental group EXCEPT they are not exposed to the independent variable; the group with which the experimental group can be compared

1) Of 100 individuals with moderate depression, 50 receive 8 weeks of a new cognitive-behavioral therapy, while the other 50 are placed on a waiting list for 8 weeks. After 8 weeks all 100 are given psychological tests to assess their level of depression.

Population: _____ Sample: _____

Independent Variable: _____ Dependent Variable: _____

Experimental Group: _____ Control Group: _____

Possible Operational Definitions:

2) A biopsychologist is studying the effects of anabolic steroids on the aggressive behavior of female rats. 24 female rats receive daily injections of a placebo (fake drug), while 24 others receive daily injections of the steroid. Round-the-clock videotapes of the communal cages of all rats allow all aggressive encounters to be counted and timed.

Population: _____ Sample: _____

Independent Variable: _____ Dependent Variable: _____

Experimental Group: _____ Control Group: _____

Possible Operational Definitions:

3) An industrial psychologist is interested in whether lowering the temperature in a packing room will increase productivity (number of products packed). Workers in two equivalent packing rooms participate in the study. One room is maintained at 65 degrees, the other room is left at the usual company temperature of 76 degrees.

Population: _____ Sample: _____

Independent Variable: _____ Dependent Variable: _____

Experimental Group: _____ Control Group: _____

Possible Operational Definitions:

4) Big Pharma Drug Company is conducting research of their new drug Attendomax to improve the note-taking behavior of college students diagnosed with Attention Deficit Hyperactivity Disorder. Fifty of the students receive capsules contain Attendomax, another fifty receive capsules which look the same but actually contain a placebo. All students attend the same series of lectures and have their notes collected afterwards. Notes are scored for completeness and accuracy.

Population: _____ Sample: _____

Independent Variable: _____ Dependent Variable: _____

Experimental Group: _____ Control Group: _____

Possible Operational Definitions:

5) Here is your opportunity to describe an experiment of your own creation:

I would like to investigate the effects of _____

on this behavior: _____.

Half my participants would _____

while the others would _____,

Population: _____ Sample: _____

Independent Variable: _____ Dependent Variable: _____

Experimental Group: _____ Control Group: _____

Possible Operational Definitions:

For the above experiment, identify how you would determine who from your population would be chosen to take part in the experiment. _____.

For the above experiment, identify how you would determine which persons taking part in the experiment would be in either the control group or the experimental group. _____.