Project Connection

Experimental Data

Researcher Jonas Salk

treatment group—the group that receives the drug to be tested

control group—the group that receives a placebo or the currently accepted treatment for the purposes of comparison

placebo—a treatment given to the control group that has no therapeutic value

double-blind test—testing method that guards against bias in data collection

Disease, in some form or another, has always plagued the human race. Owing to the development of vaccines, however, many fatal diseases have been virtually eliminated—among them smallpox, tetanus, and polio.

It was the early 1950s when Jonas Salk began testing his polio vaccine on humans. Because children in Grades 1, 2, and 3 were most vulnerable to the disease, Salk asked the parents of about 750 000 students if they would allow their children to participate in the study. Approximately 350 000 declined. Of the remaining 400 000 children, half were randomly selected (by a coin toss) as the **treatment group**; the other half became the **control group**.

The treatment group received an injection of the vaccine while individuals in the control group were injected with a **placebo**. This is a classic example of a **double-blind test**: neither the subjects nor the researchers were aware of which individuals received the treatment and which received the placebo until the results were compiled and the study was complete.

The table that follows shows the results of the 1954 Salk vaccine trial.

Double-Blind Randomized Controlled Experiment		
	Size	Rate*
Treatment	200 000	28
Control	200 000	71
No Consent	350 000	46

* Rate = number of polio cases occurring per 100 000 people

Clearly, the rate of developing polio was significantly lower for the treatment group than it was for the control group. Based on this evidence, the Salk vaccine was introduced to the general North American population. Polio has since no longer posed a threat.

Natural Sciences and Data Analysis

If your interests are in the areas of chemistry, biology, or physics, it is likely you have already been involved in gathering data from experiments. The data that are collected in these courses are generally physical measurements. Although the data are collected through experimentation, the analysis is fundamentally the same as techniques used in the social sciences.

Source: *Statistics* by David Freedman, Robert Pisoni and Roger Purves, W.W. Norton & Company Inc. (1978)