

A dark, irregular ink blot with the word "Hypothesis" written in white text in the center. The blot has a textured, splattered appearance with some lighter areas and small droplets around the edges.

Hypothesis

There are two opposing possibilities

Nothing much happened = The Null Hypothesis –
symbolized as H_0

- The hoped for effect was barely apparent.
- The groups were not all that different.
- The treatment doesn't seem to help anybody.
- The variables don't appear to be related.

Something exists or happened = The
Alternate Hypothesis – symbolized as H1

- There was a strong effect due to the intervening treatment.
- There is a great difference between the groups.
- One variable strongly correlates with or predicts another.

The null hypothesis. The assumption that any difference or relationship that exists between populations is due to chance

The alternative hypothesis. A restatement of the hypothesis in the same terms as those used in the null hypothesis except that the differences or relationships are assumed to be real and not due to chance.

Non-directional or two-tailed hypotheses. These do not predict the direction but simply state that there will be a difference; that is the effect of the independent variable may go in either direction.

A directional or one-tailed hypothesis. This specifies the direction in which the difference lies

What are Type I and Type II errors?

- Type I error. Rejecting the null when it is true. The probability of rejecting a true null hypothesis is equal to the alpha level (significance level).

Type II error. The probability of accepting the null hypothesis when it is false.