

6. Hypothesis testing and confidence intervals

We have the following goals:

- Understand how to construct confidence intervals for parameters in a linear model.
- Understand how to test statistical hypotheses about a linear model.
- In particular, to ask and answer the question: “Are the data consistent with a hypothesis that a covariate, or a collection of covariates, are unimportant?” (What is the fundamental scientific importance of the slightly contorted logical reasoning in this question?)
- Learn to use R to carry out these tasks.
- See how the linear model includes and extends basic tests for means of one and two samples.

First, we'll review hypothesis testing by working through some notes on “Topics in comparing means of one or two samples.”