

15.10: Statistical Literacy

Learning Objectives

- Testing an Alzheimer's Drug

A research design to compare three drugs for the treatment of Alzheimer's disease is [described here](#). For the first two years of the study, researchers will follow the subjects with scans and memory tests.

Example 15.10.1: what do you think?

Assume the data were analyzed as a two-factor design with pre-post testing as one factor and the three drugs as the second factor. What term in an ANOVA would reflect whether the pre-post change was different for the three drugs?

Solution

It would be the **interaction** of the two factors since the question is whether the effect of one factor (pre-post) differs as a function of the level of a second factor (drug).

Weight Loss and Cancer Risk

An experiment on risk factors for cancer had four conditions related to weight loss. Quoting the [web page description](#):

"McTiernan and her colleagues randomly assigned 399 overweight and obese postmenopausal women to one of four groups — dieting plus exercise, dieting only, exercise only or a control group not required to do either."

Example 15.10.2: what do you think?

What type of ANOVA design was used?

Solution

There are two **between-subjects** factors: Diet (yes or no) and Exercise (yes or no) resulting in the four conditions. The design is a 2×2 factorial design.

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