

## 16.7: Statistical Literacy

### Learning Objectives

- Design a statistical study involving niacin, HDL and heart disease

### Low HDL and Niacin

A low level of [High-density lipoproteins \(HDL\)](#) have long been known to be a risk factor for heart disease. Taking niacin has been shown to increase HDL levels and has been recommended for patients with low levels of HDL. The assumption of this recommendation is that niacin causes HDL to increase thus causing a lower risk for heart disease.

### Example 16.7.1: What do you think?

What experimental design involving niacin would test whether the relationship between HDL and heart disease is causal?

#### Solution

You could randomly assign patients with low levels of HDL to a condition in which they received niacin or to one in which they did not. A finding that niacin increased HDL without decreasing heart disease would cast doubt on the causal relationship. This is exactly what was found in a study conducted by the NIH. See the description of the results [here](#).

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