So far, you've learned methods for comparing groups with respect to a continuous outcome such as IQ or a categorical outcome such as whether they developed coronary heart disease or not. But what if the exposure of interest is also a continuous variable? In other words, what if we want to determine whether there is an association when both the exposure and the outcomes are continuous measurements.

This situation arose when researchers in New Zealand wanted to explore whether the number of hours of television viewing as a child was associated with adverse health outcomes years later when the children had become adults. The outcomes they were interested in were body mass index, cardiorespiratory fitness, maximum aerobic power measured on a cycling test, serum cholesterol, and blood pressure at age 26 years. Here both the exposure, hours of TV viewing, and the outcomes of interest, are all continuously distributed measurement variables. Studies like this require some new tools, specifically correlational analysis and linear regression analysis.

These tools will be useful to you, and they will also lay the groundwork for our discussion of multiple variable regression analysis, which we will address in several weeks. By the way, the numbers of hours of TV viewing were associated with higher body mass indices, lower cardiorespiratory fitness, increased cigarette smoking, and higher serum cholesterol levels. I wonder if these results apply to the number of hours we spend sitting in front of a computer monitor. Something to think about.