It is now widely believed that smoking tends to impair lung function. Much of the data to support this claim arises from studies of pulmonary function in adults who are long-time smokers. A question then arises whether such deleterious effects of smoking can be detected in children who smoke. To address this question, measures of lung function were made in 654 children seen for a routine check up in a particular pediatric clinic. The children participating in this study were asked whether they were current smokers.

A common measurement of lung function is the forced expiratory volume (FEV), which measures how much air you can blow out of your lungs in a short period of time. A higher FEV is usually associated with better respiratory function. It is well known that prolonged smoking diminishes FEV in adults, and those adults with diminished FEV also tend to have decreased pulmonary function as measured by other clinical variables, such as blood oxygen and carbon dioxide levels.

The data set fev.txt (located on the class web pages) contains the 654 children's data in free field format. Available data includes measurement of age, height, sex, FEV, and whether each child smokes or not. Each row corresponds to a single clinic visit. Missing data is denoted by NA. The first line of the file contains the variable names. The format of the data is

seqnbr	case number (the numbers 1 to 654)
subjid	subject identification number (unique for each different child)
age	subject age at time of measurement (years)
fev	measured FEV (liters per second)
height	subject height at time of measurement (inches)
sex	subject sex (1 = male, 2 = female)
smoke	smoking habits (1 = yes, 2 = no)