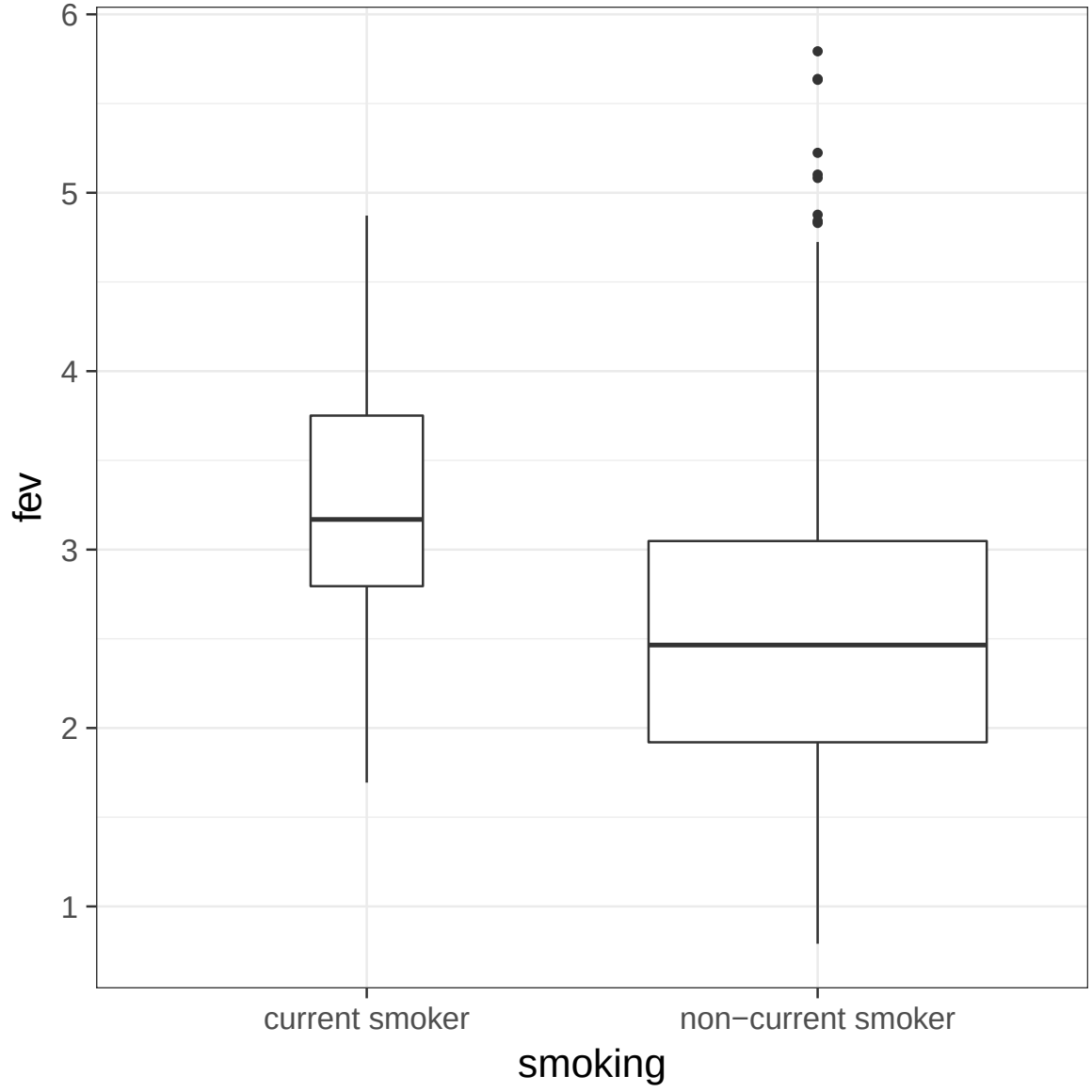
Graphics for inference

- What is my model telling me?
- How can I tell other people?

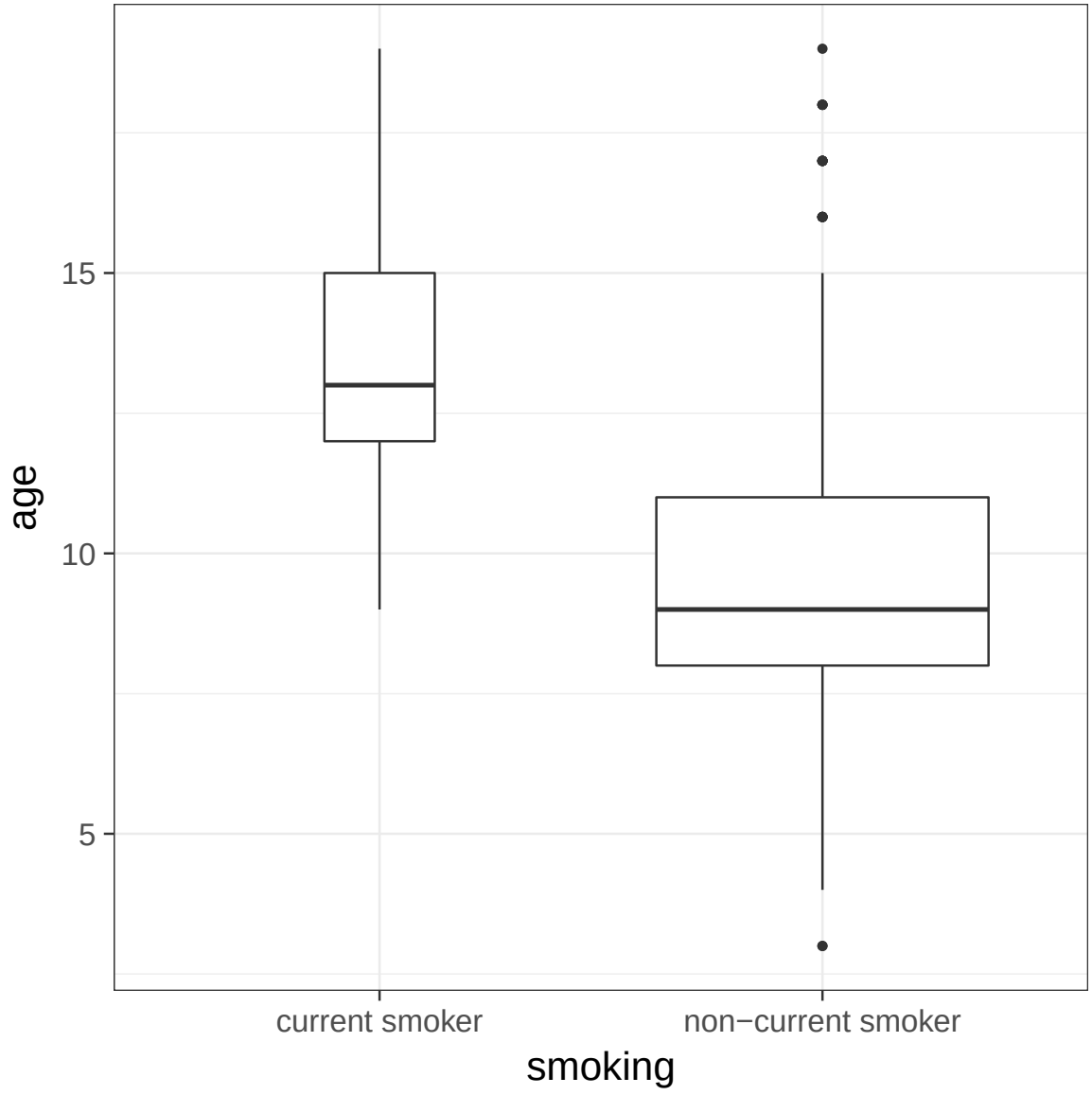
Principles

- Graphs tell stories better than tables do
  - Use graphs to illustrate comparisons
  - Be careful about *units*
- Distinguish between (scientific) variables and (statistical) parameters
- Keep P values in their place
- What to do about raw data?

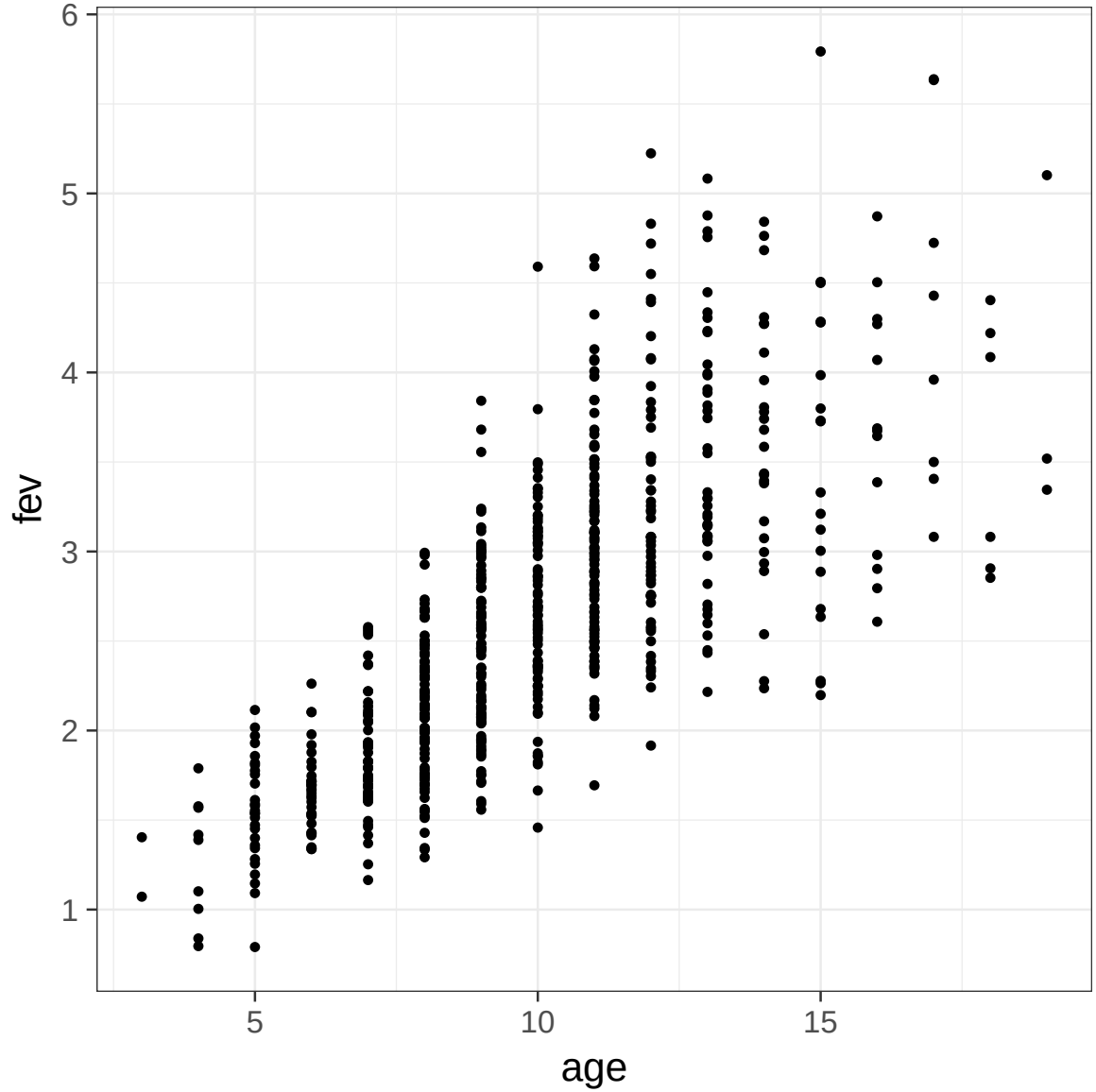
Smoking data

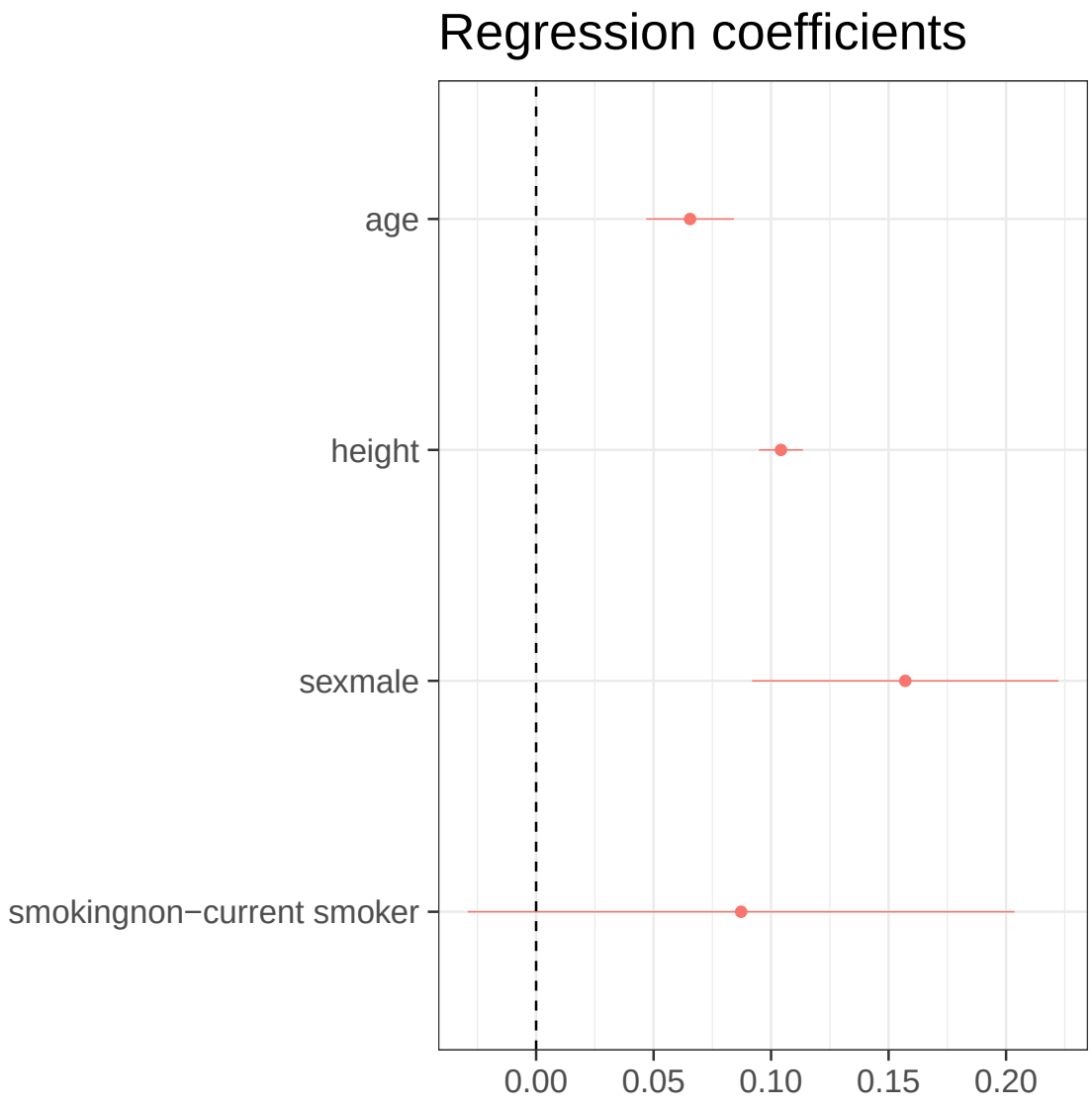


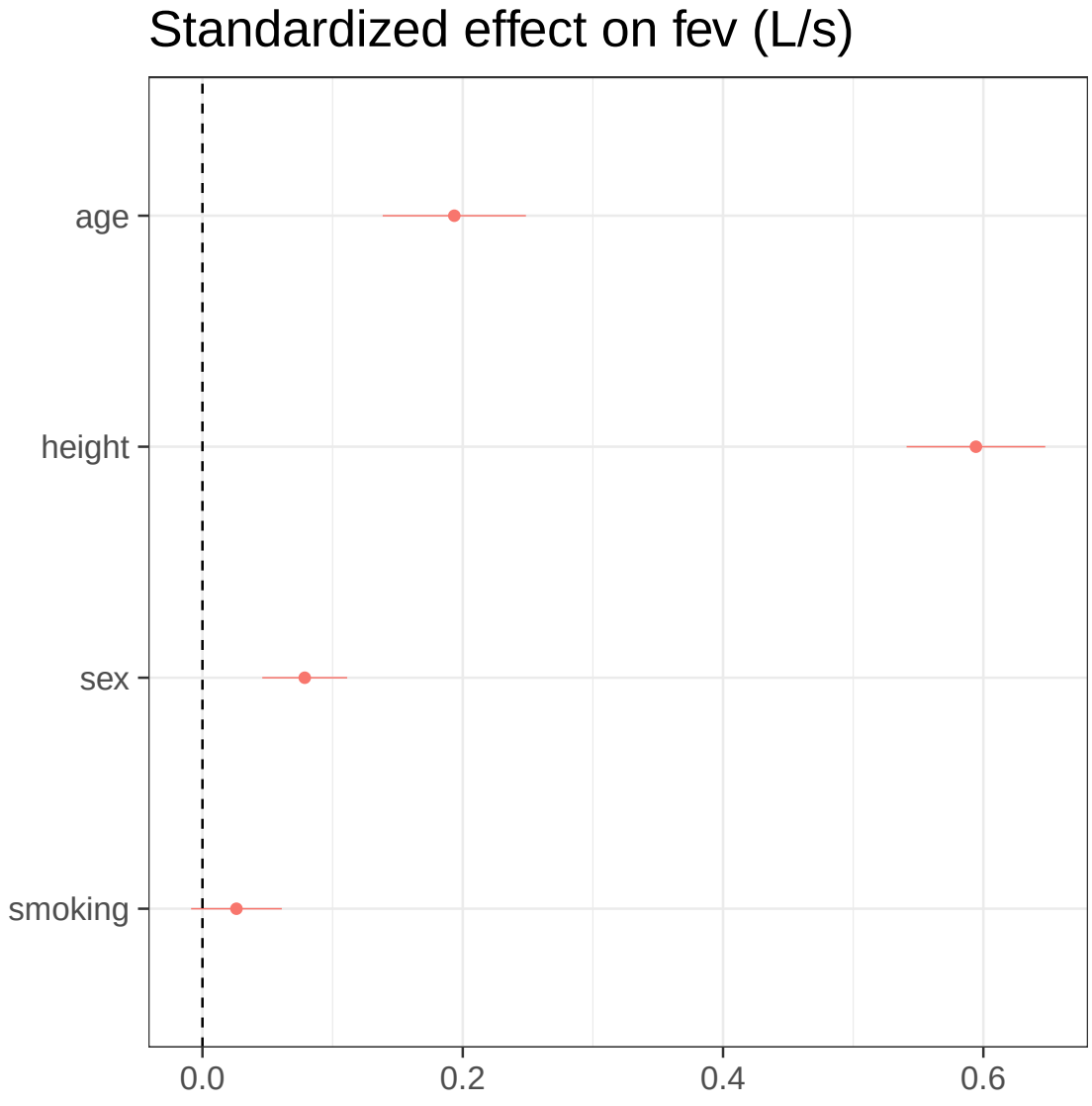
Smoking data

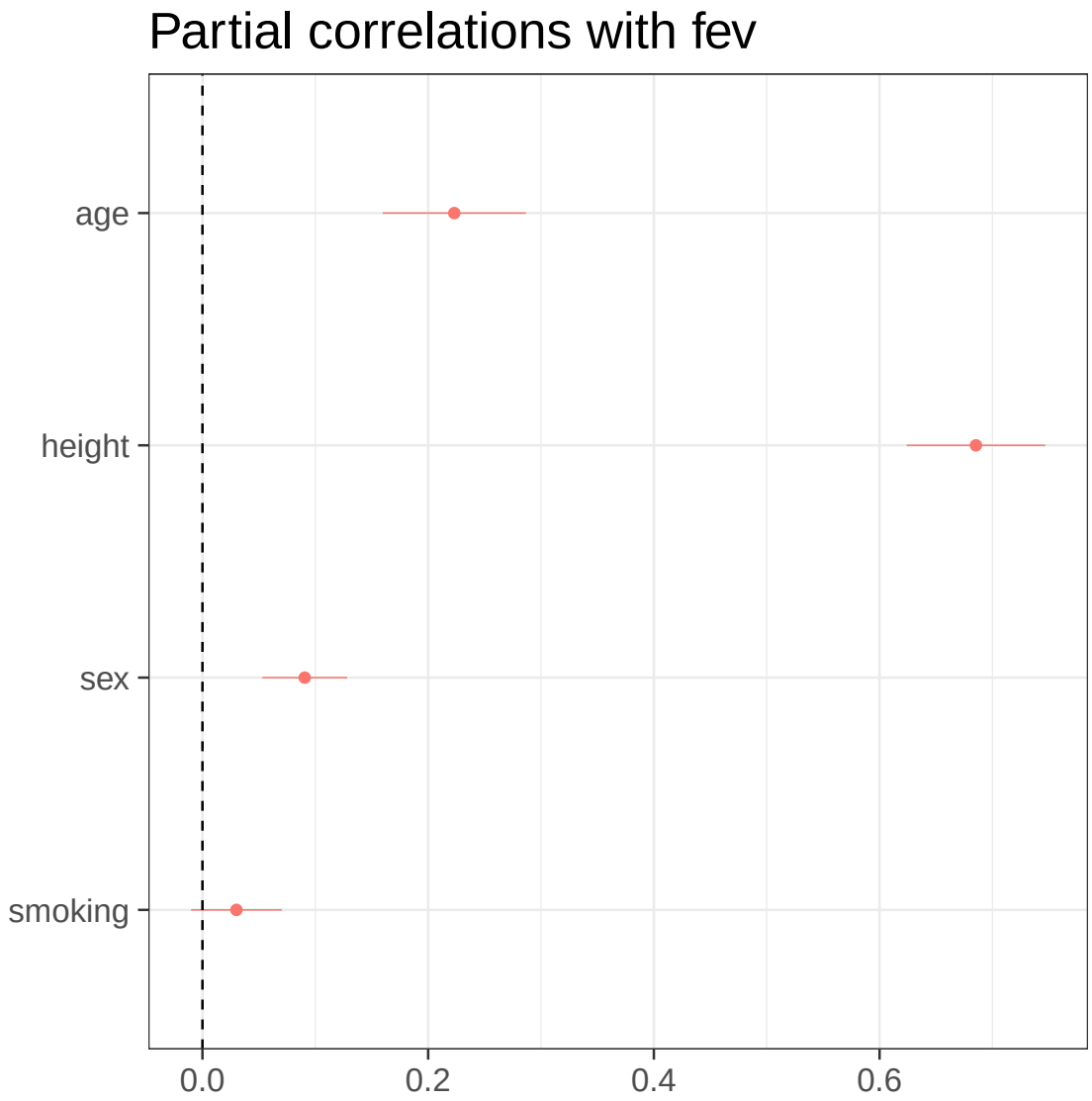


Smoking data




Regression coefficients
age
height
sexmale
smokingnon−current smoker
0.00
0.05
0.10
0.15
0.20

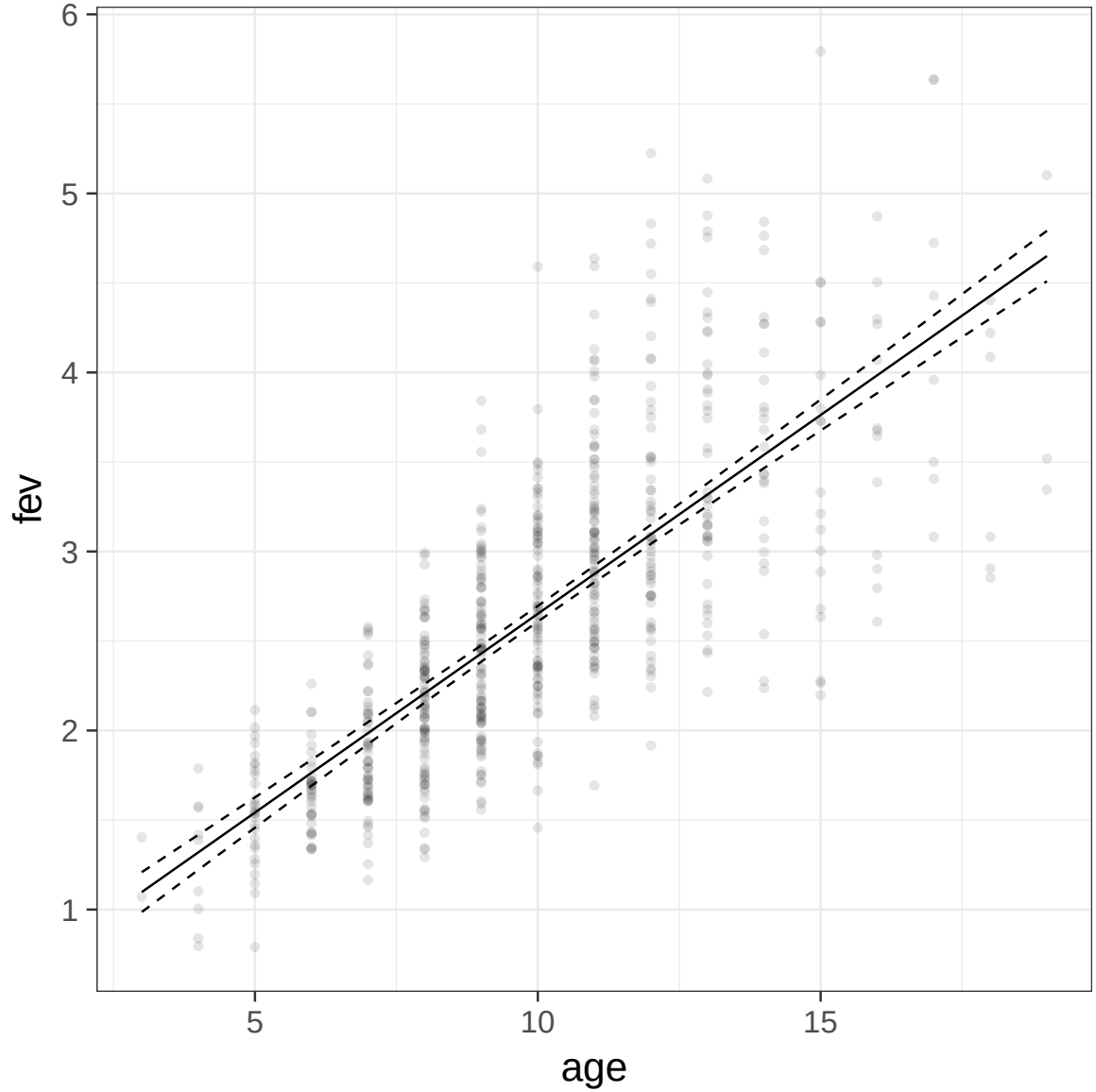

Standardized effect on fev (L/s)
age
height
sex
smoking
0.0
0.2
0.4
0.6


Partial correlations with fev
age
height
sex
smoking
0.0
0.2
0.4
0.6

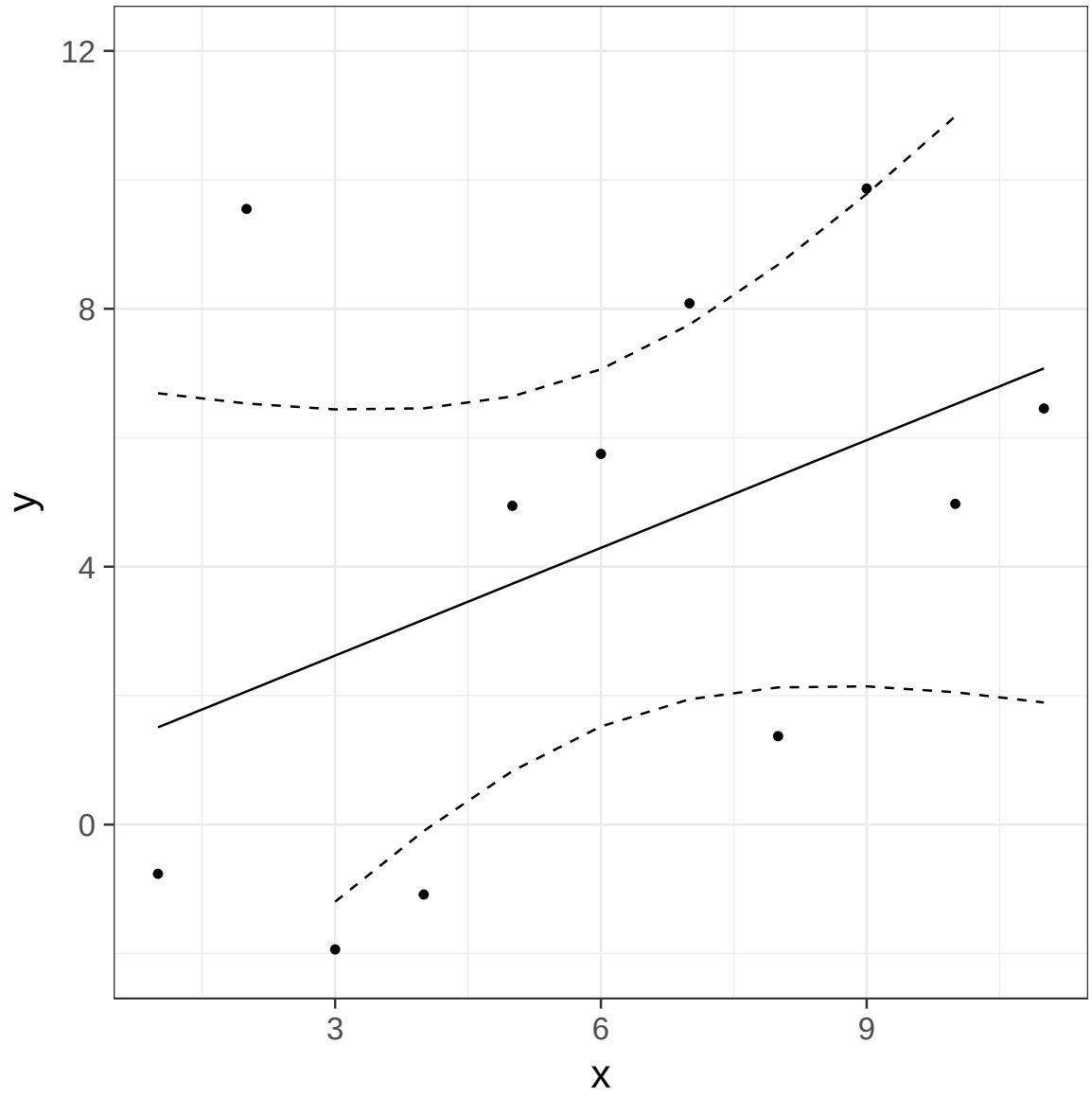
Comparing effects on different response variables

- Put response variables on same scale:
  - Standardize
  - Logs
  - Proportions

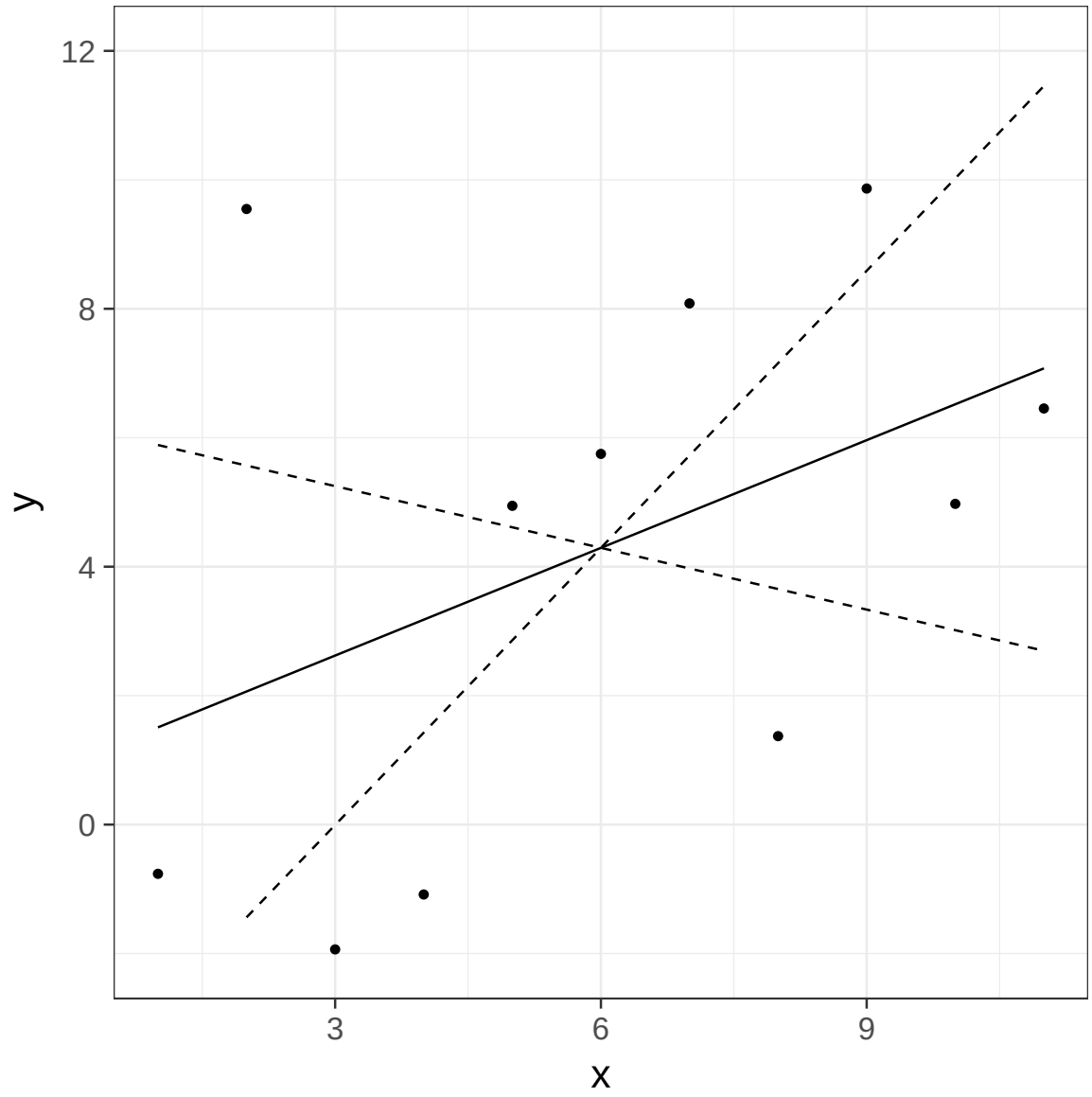
Shape of response



Standard prediction plot



Marginal prediction plot



Marginal prediction plot