Exercise 8

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Exercise 7: (Data Project)

a) How strong is the relationship between BMI and systolic blood pressure? Is it significant? How much of the variation in systolic blood pressure can be explained (in a statistical sense) by variation in BMI?

b) Does the relationship between systolic blood pressure and BMI change when you adjust for age (categorized)? Interpret the coefficients of the resulting model (when you mean-center BMI before fitting the model, you can also interpret the intercept). Would you say that BMI has a clinically relevant impact on blood pressure, according to your model?

c) Try to find a better model to predict systolic blood pressure by including more covariates. Select a number of candidate covariates which in your opinion may be related to systolic blood pressure, and then choose a model selection strategy and a criterion/test for comparing models. Describe the model with the best fit according to your search, and interpret the model coefficients.

Exercise 8: (Data Project)

a) Analyze the relationship between lifetime diagnosis of cancer and exposure to pollutants, using the categorized age variable (Note: No information on pollutant exposure was collected from participants aged 80+, so these cannot be included in the analysis). Does the adjustment for age change the picture? Interpret the model coefficients including the intercept.

b) Try to find a good model of cancer diagnosis. Describe and interpret it as you did for systolic blood pressure.

Exercise 9: (Data Project)

Dichotomize the variable `sweet_prvmo` into the categories '< 30 portions' and '≥ 30 portions'. Dichotomize `diab_lft` into 'No Diabetes' vs. 'Diabetes or Prediabetes'. Test the relationship between the two dichotomous variables. Before you look at the results: Do you think there is an association, and if so, in which direction? Why do you think so? Compare the results with your guess.