Unit 6 Problem Set

This practice uses the **CRC3** data that you are familiar with. Remember this is a cross-sectional study on cardiometabolic risk among Costa Rican adults. We are going to use abdominal obesity as our outcome and alpha-linolenic acid as our main exposure. The purpose of this evaluation is to assess the association between abdominal obesity and alpha-linolenic acid using the appropriate models.

Copy and paste the relevant SAS code and output

**Question 1:** Create binary variables for your outcome, abdominal obesity, and your exposure, alpha-linolenic

**Instructions:**

a) Dichotomize the variable alpha-linolenic acid using the median

b) Create the abdominal obesity variable by using the metabolic syndrome cutoff (remember it is different by sex)

c) What is the prevalence of abdominal obesity in this population? And in women?

**Question 2:** Crude association between alpha-linolenic acid and abdominal obesity using a two by two table

**Instructions:**

a) Run a two by two table between alpha-linolenic acid (median variable) and abdominal obesity

b) Calculate an odds ratio

c) Calculate a prevalence ratio

d) Are they different? Why or why not?

**Question 3:** Run a logistic model to test the association between alpha-linolenic acid and abdominal obesity

**Instructions:**

1. Run a logistic regression model with PROC GENMOD with the median alpha-linolenic acid as the exposure and abdominal obesity as the outcome. Use low alpha-linolenic acid as the reference.
2. What is the OR and the 95% CI? Interpret this OR. Is it consistent with your biological hypothesis? Why or why not?

**Question 4:** Run a log-binomial model to test the association between alpha-linolenic acid and abdominal obesity

**Instructions:**

a) Run a log-binomial regression model with PROC GENMOD with the median alpha-linolenic acid as the exposure and abdominal obesity as the outcome. Use low alpha-linolenic acid as the reference.

b) What is the PR and the 95% CI? Interpret this PR.

c) What would be the PR and 95% CI of abdominal obesity for people below the median alpha-linolenic acid compared with people above the median alpha-linolenic acid?

d) Imagine your previous model did not converge. Run a robust Poisson model to estimate the prevalence ratio of abdominal obesity comparing people above the median alpha-linolenic acid with people below the median.

e) Interpret your measure of association. Do you get similar results? Why or why not?

**Extra Credit Challenge Task**

If you completed this optional challenge, provide your response here.