ERHS 642 Logistic Regression Spring 2016

Homework Assignment 5 – New Version

Consider the BURN1000 data set, outcome variable DEATH, risk factor AGE.

1. Assess the scale of age using the fp method. Note: When the linear scale is best, missing values appear in the fp results table for the best one-power model

   a. What is the best one-power transformation? What is its deviance?

   b. What is the best two-power transformation? What is its deviance?

   c. Is the best two-power transformation significantly better than the best one-power transformation?

   d. Transform age using the best two-power transformation and use it in place of the linear AGE variable in proc logistic.

   e. Obtain ORs and 95% CIs for an increase in AGE of 10 years starting at ages 10, 30, 50 and 70. Interpret your results.

   f. Obtain ORs and 95% CIs for AGE= 30, 50 and 70 vs. AGE=10. Interpret your results.

2.

   a. Based on your results in question 1, how would you model age? Explain!

   a. Assume you create a 3-level age variable (0-32, 32-51, 51-90). Obtain OR(s) and 95% CI(s) and interpret your results. Use the following contrasts: 32-51 vs. 0-32, 51-90 vs. 0-32 and 51-90 vs. 32-51.

3. If you included age in a multivariate model, would you reassess the scale of age? Explain!