**Chapter 11**

**ANCOVA**

The High Jump.csv file quantifies injuries sustained by schoolchildren in different regions practising the high jump. The injuries have been categorized according to the technique used at the time of injury: Scissors jump, Western roll and Fosbury flop. Measures include the injury type – arm/leg, feet/back, head/neck – and the amount of training provided. (This study is a fictional one, based on the Iris data set.)

We are interested in whether or not the duration of training provision has been allocated differentially for the different types of high jump (assuming, for example, that beginners are more likely to start with the scissors method). Let us assume that trainers consider limb injuries in particular to be a cause of confusion, and would like to have the 'ArmLeg' data taken into consideration as potential cause of noise.

Check the assumptions before reporting the results but for simplicity, report the results 'as is' even though some assumptions may be violated. No data transformation will be conducted.

State the null and alternative hypotheses:

What do the assumption results show?

What do the ANCOVA results show?

What is the result of a post-hoc test to identify significant differences between jump techniques?