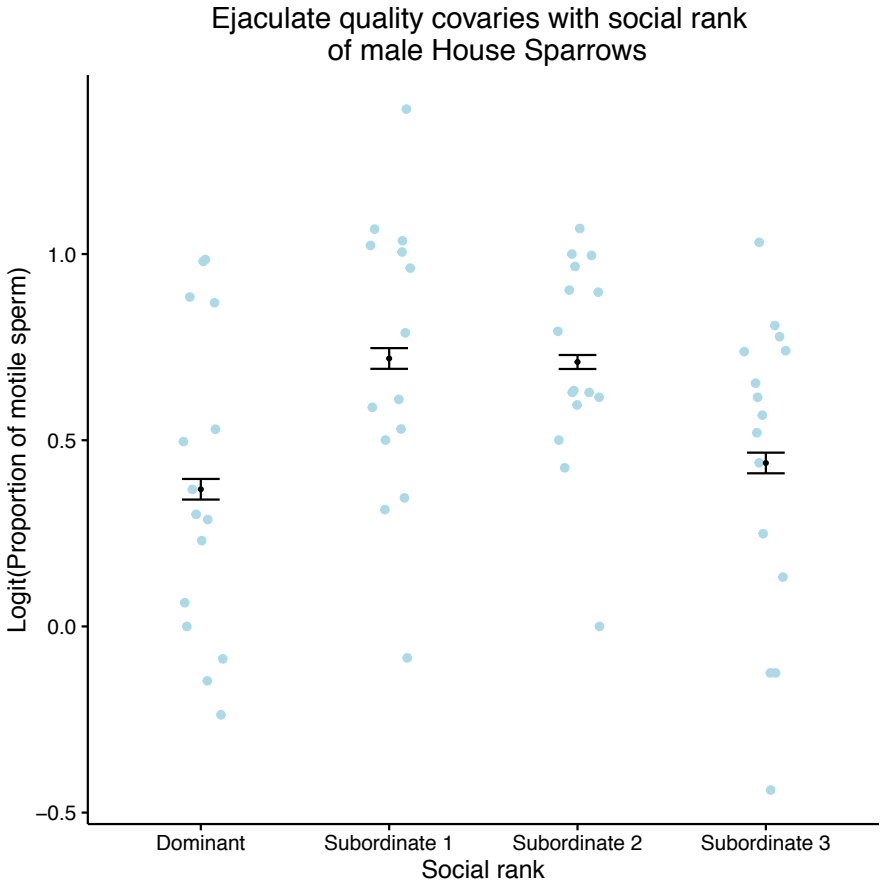
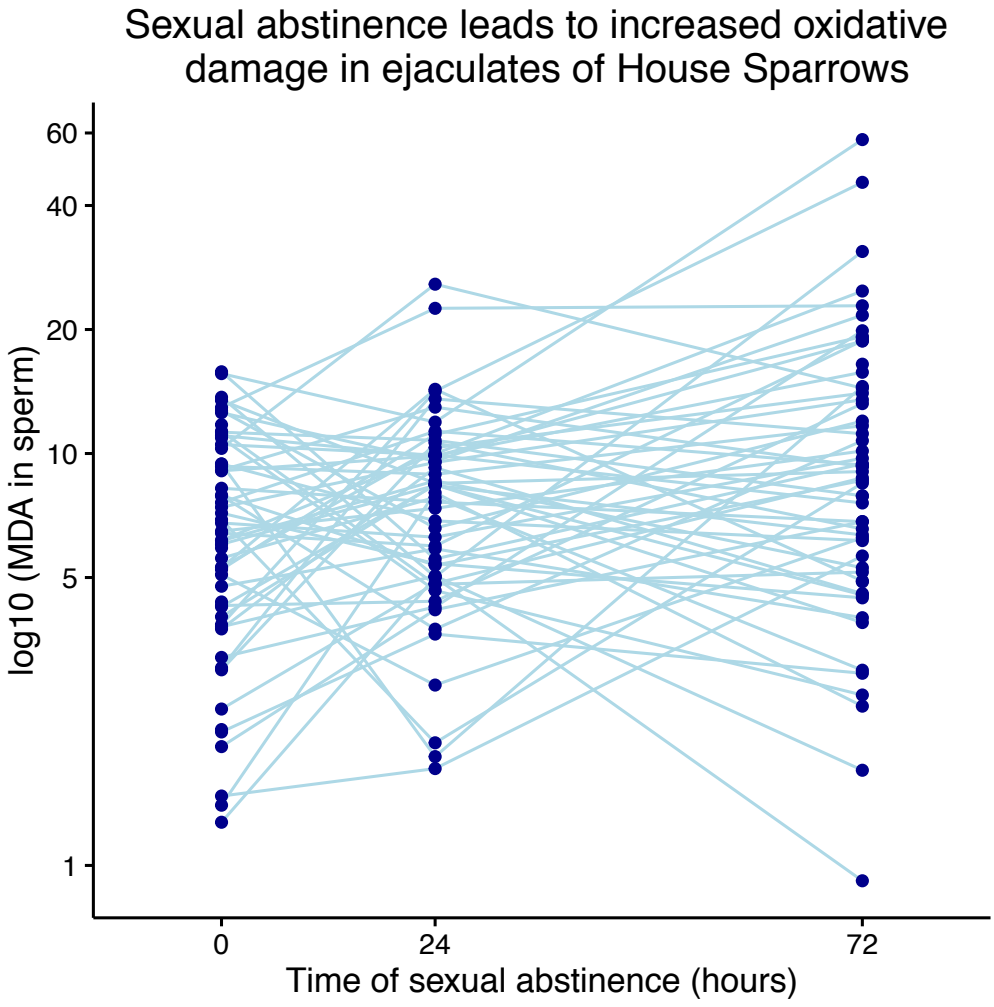
Exercise sheet 3

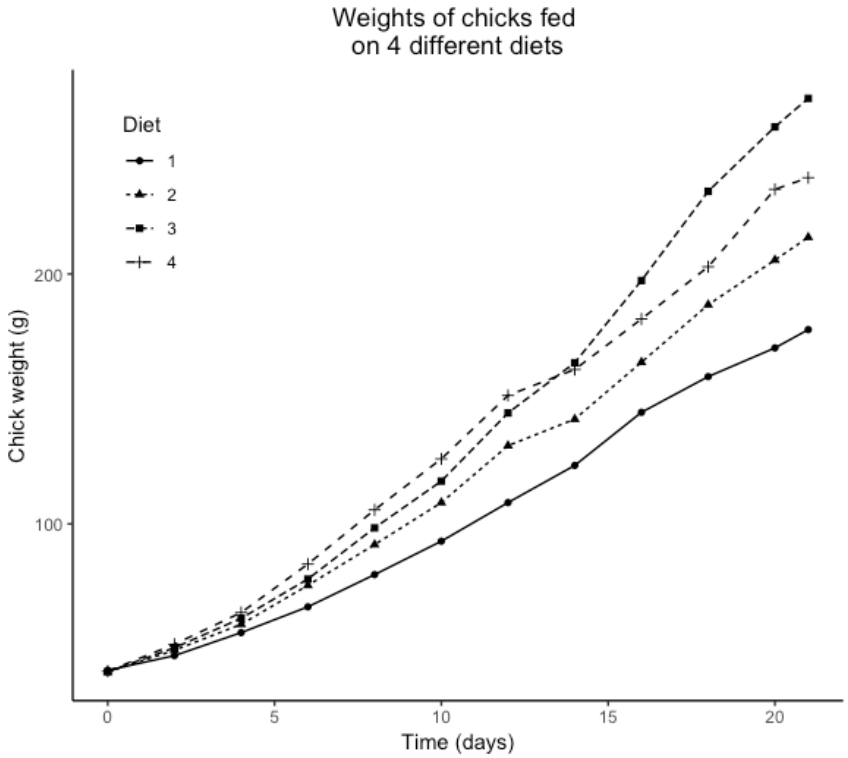
Exercise 1: A group of researchers were interested in whether males occupying different social ranks within a hierarchy would adjust their ejaculate to their expected risks of sperm competition. Such observational data is contained within the file *Sparrows.txt*. Using those data, generate the following *jitter* plot considering only data from day 4. Add to it an *errorbar* plot with the means of each group and the standard error of the mean (defined as $SEM = {}^{sd}/_{\sqrt{n}}$, where sd is the standard deviation and n is the number of observations).



Exercise 2: Given that social status within a hierarchy could affect the copulation rates of a male, where subordinate males would copulate less with females, the same group of researchers were interested in whether sexual abstinence would affect the physiology of the ejaculate. For this, they maintained small groups of House Sparrows in aviaries, and after an acclimatization time they removed all the females and collected 3 successive ejaculates. They predicted that the longer the males store their ejaculate, the higher the amount of oxidative damage the ejaculate would suffer. Using the dataset Sparrows, generate the following plot considering only data before the experimental manipulation. Each line represents the three measurements of MDA from a single individual after 1 and 3 days of sexual abstinence.



Exercise 3: Some poultry researchers were interested on how different diets would affect the growth rates of chicks. Those data are contained in the dataset *ChickWeight*, available in R (use the command *data()* to load the table). Using your newly acquired data wrangling and plotting sklls, create a table containing the mean for each diet per day, and plot that summary in a single figure.



Exercise 4: Using the data from Sparrows.txt, generate a plot of the proportion of motile sperm by rank after the experimental manipulation. In addition, split the plots by the social rank that each male had before the manipulation. Finally, draw a line that connects the means for each plot.

NOTE: the x axis has some jitter.