1. Open the .xls file 'Practical 6' in dropbox folder. This has results from GWAS catalogue for asthma.
    a. Columns H and I give formulas for how to calculate standard errors from ORs and p-values.
    b. Columns J, K, and L show how to calculate a Bayesian posterior estimate of association (i.e., using a basic two-stage hierarchical model)

2. Now look at the phenotype(s) you have been using for previous even-numbered practicals. Using the equations given in the spreadsheet, calculate the Bayesian estimates of ORs for the associated SNPs. This can be done in R or excel.

3. Interpret these Bayesian estimates. Which were substantially 'shrunk' toward the prior mean? Which were not much changed?

4. How does the pre-specification of the prior standard deviation ('tau') effect the amount of shrinkage?

5. Assume you have collected the following data for evaluating a potential G-E interaction.

Strata	Cases	Controls
G+E+	40	10
G+E-	30	20
G-E+	20	30
G-E-	10	40

Evaluate whether there appears to be statistical interaction on multiplicative and/or additive scales.