

**Department of Health Sciences**  
**M.Sc. Module: Systematic Reviews**

**Exercise on meta-analysis: house dust mite control**

This is intended for anyone who would like a bit of extra practice in reading meta-analyses.

Read the attached paper 'House dust mite control measures in the management of asthma: meta-analysis' (*BMJ* 1998; **317**: 1105-1110). Answer the questions.

1. Comment on the review question (Methods first paragraph) in terms of the patient or problem, intervention, comparison treatment, and outcomes.
2. Comment on the search strategy. How does this compare with current recommendations on identifying clinical trials?
3. Two authors each identified trials and extracted data, then discussed any ambiguities. Why did they do this?
4. In the methods we read that 'Two [of the authors] (PCG and CH) extracted data on the following outcomes: subjective wellbeing, improvement in asthma symptoms, use of drugs to control asthma, number of days of sick leave taken from school or work, number of unscheduled visits made to a doctor or hospital, forced expiratory volume in 1 second, peak expiratory flow rate, provocative concentration that causes a 20% fall in forced expiratory volume in 1 second, and results of skin prick testing.' What other kinds of information would you expect them to extract?
5. The authors calculated the standardised mean difference in the analysis of some data (Statistical methods). What does this mean and why did they do it?
6. What kind of graph is Figure 1? What do the squares and horizontal lines mean? Why are the squares of different sizes?
7. What kind of horizontal scale (x axis) is used in Figure 1? Why is this?
8. In Figure 2, what is ' $\chi^2$ , df=6, z=0.27' testing?
9. In Figure 2, what do the diamond or lozenge shapes represent? What suggests that they have been drawn incorrectly?
10. The authors say that 'If  $P < 0.10$  in the test for heterogeneity a random effects analysis was carried out' (Statistical methods). What is heterogeneity? What is 'a random effects analysis'? Why is  $P < 0.10$  taken as the decision point, rather than  $P < 0.05$ ?