Stratified meta-analysis (Microsoft Office Access 2003)

1. Select Data Analysis from the Meta-Analysis Data Manager menu and then the type of analysis to be run.

   WMD Meta-Analysis: Weighted mean difference meta-analysis or normalised mean difference (NMD) meta-analysis. Used when data exist on a ratio scale (the score that would be achieved by a normal animal is known or can be inferred e.g. infarct volume); expresses the absolute difference in means as a proportion.

   SMD Meta-Analysis: Standardised mean difference meta-analysis. Used when it is not possible to infer what a normal animal would score (and data from unlesioned animals is unavailable) e.g. spontaneous locomotion.

2. Select the **Drug Group**, **Type of Disease** and **Outcome Measure** you wish to analyse. Data can be checked for errors by using the **Check Raw Data**, **Incomplete Raw Data Query** and **Not Nested Raw Data** buttons.
3. For each of your outcome measures of interest calculate the **Global Estimate** and all other variables of interest using the appropriate buttons under **Continuous Outcome Analyses**.
4. Copy and paste results to an Excel spread sheet.
5. For continuous variables such as time of drug administration, you need to separate the times observed in your data set into sensible blocks e.g. 1-3 h pre-stroke, 0-3 h post-stroke, 3-6 h post-stroke etc. There are no set rules for doing this; it will depend on your dataset and any specific biological implications of different time points. When you have chosen the time blocks enter each one separately in the **Select Minimum Time..** and **Select Maximum Time..** fields and press the analyse button for each time block.

For variables that don't have a button under **Continuous Outcome Analyses**:

6. In the **Meta-Analysis Data Manager : Database (Access 2002 – 2003 file format)** window select **Queries** from the **Objects** menu. Highlight the query relevant to your analysis e.g. Raw Data Neurobehavioural Query (this would be the query used when the Not Nested Raw Data button is pressed when NeurobehaviouralScore is selected as the outcome measure).
7. Click on the **Design** button which will bring up an editing screen for all of the columns included in the neurobehavioural query.
8. Scroll across to the relevant column e.g. Control of Temperature and type **Yes** in the Criteria: row. This will restrict the query to only analyse those database entries where temperature was controlled. Press save. To confirm that only the relevant data are being analysed you can go back and **Check Raw Data**; in the Control of Temperature column, all entries should have ticked checkboxes.
9. Press the Global Estimate button to get the point estimate of studies that controlled temperature.
10. Go back to the neurobehavioural query form and change the **Yes** to a **No** and repeat to get the point estimate for those studies that did not control temperature. Remember to delete the added criteria (and save) before continuing with additional analyses.

Collaborative Approach to Meta Analysis and

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Review of Animal Data from Experimental Studies

To restrict analyses to a subset of data:

1. Select the relevant query as above e.g. Raw Data Neurobehavioural Query and click on the **Design** button.
2. Scroll across to the relevant column e.g. Sex to restrict analysis to look at only female animals. Type **Female** into the Criteria row and save.
3. Any analysis run will now only use data from female animals. Remember to delete additions to the criteria row and save when finished.

To use the new effect size and standard error equations for calculations:

NB: These are alternative effect size and SE equations used for WMD/NMD analyses when the absolute value of the effect size, as usually calculated, is more than 100% for any of the comparisons being considered.

1. Select the relevant query as above e.g. Raw Data Neurobehavioural Query and click on the **Design** button.
2. Scroll across and locate the **Effect Size**, **SE**, **Effect SizeNew**, and **SENew** columns and change the names (in the Field: row) so that **Effect Size** becomes **Effect SizeNew**, **SE** becomes **SENew** and vice versa and save.
3. The new effect size equations will now be used in any analyses run (the analyses are programmed to use the Effect Size and SE columns, it doesn't matter what the other columns are called as they are not being used – 'New' has just been put after the names in this instance as a descriptor to differentiate between the two different sets of equations).
4. When you've finished running your analysis, change the column names back to their original states and save.