Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

randomisation: **confounding**

allocation concealment: **selection bias**

blinding the assessor: **observer (measurement) bias**

2.2

it keeps the groups as randomised, so confounders stay balanced

people who stop (e.g. due to side effects) are often different, so leaving them out biases the result; ITT reflects real use

2.3

A: **phase I**

B: **phase III**

C: **phase IV**

2.4

square: one trial's result, its size shows the trial's weight

diamond: the pooled result of all trials, its width is the CI

3.1

(a) trial 1 and trial 3: their CIs do not cross 1

(b) it is the largest or most precise trial, so it has the most weight

(c) the drug lowers the risk of stroke by about 23%, and it is significant because the CI does not include 1

(d) it combines many more patients, so the estimate is more precise

(e) no heterogeneity: the trials agree

3.2

(a) **publication bias**: small trials showing no benefit or harm were not published

(b) it makes the treatment look better than it is

(c) any one, with how it helps: register all trials before they start, so missing results can be found; search unpublished data and trial registers

3.3

(a) to act as a placebo, so the patients do not know which group they are in

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(b) the patients and the person measuring pain could be blinded; the acupuncturist cannot be

(c) acupuncture: $30/150 = \mathbf{20\%}$; sham: $10/150 \approx \mathbf{6.7\%}$

(d) the people who left may differ, e.g. those not helped, so the groups are no longer balanced and the result may be biased (attrition bias)