Solutions

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

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

2.1

P: teenagers with depression

I: exercise; C: antidepressant drugs

O: mood scores

2.2

RRR $= (2-1)/2 =$ **50%**

ARR $= 1\%$, NNT $= 1/0.01 =$ **100**

2.3

systematic review of RCTs → RCT → case–control → expert opinion

2.4

cholesterol is a **surrogate outcome**

a drug can lower it without lowering heart attacks or deaths, which matter to patients

3.1

(a) RR $= 1\%/2\% = 0.5$: yes, the relative risk halves

(b) ARR $= 2\% - 1\% =$ **1%**; NNT = **100**

(c) without the drug, 20 in 1000 women break a hip in 3 years; with it, 10 in 1000; so 990 of 1000 gain nothing or did not need it

(d) any two of: side effects (2% stopped); who paid for the study; whether the women were like my patient; cost; the CI

3.2

(a) any two of: concealment not stated; groups differ in age; loss to follow-up 25%; per-protocol analysis

(b) for the chosen two, e.g. unconcealed allocation lets staff steer patients into a group (selection bias); a younger treated group may do better anyway (confounding); high loss or per-protocol analysis removes people who did badly, making the drug look better

(c) **Table 1** (baseline characteristics)

3.3

(a) she is older than anyone in the trial; she has kidney disease, which was excluded (or she takes many medicines)

(b) kidney disease changes potassium handling, and her other medicines may add to it, so low or high potassium is more likely

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(c) a trial (or cohort) that includes older people with kidney disease

(d) any two of: her values and wishes; the doctor's clinical judgement; cost or access

(e) **evidence-based medicine**