

Study Design

LLE – Mathematics and Statistics Skills

1. For each of the following studies, determine whether the design is cross-sectional, case control, cohort, or a randomised control trial.
 - (a) A group of people who contracted symptomatic Covid-19 and who did not contract symptomatic Covid-19 are selected. They are asked about their exercise habits to determine whether exercise habits are a contributing factor to symptomatic Covid-19.

☐ cross-sectional ☐ case control ☐ cohort ☐ RCT
 - (b) A researcher carries out a survey where people are asked whether they are a smoker and whether they have lung cancer. The researcher uses this to look for a connection between smoking and lung cancer.

☐ cross-sectional ☐ case control ☐ cohort ☐ RCT
 - (c) A group of people, suffering from chronic lower back pain, are selected to trial a new drug. They are randomly divided into two groups, with one group receiving a placebo and the other the new drug. They are checked after 3 months to analyse the effectiveness of the new drug.

☐ cross-sectional ☐ case control ☐ cohort ☐ RCT
 - (d) A group of people are selected based on whether they have high blood pressure or not. A researcher wants to determine whether having high blood pressure is linked to high meat consumption, so all people are asked to describe their diet.

☐ cross-sectional ☐ case control ☐ cohort ☐ RCT

- (e) To determine if there is a link between work computer use and RSI, a group of people who spend more than 5 hours a day and a group of people who spend less than 5 hours a day on computers is selected. The two groups are followed to look for developing issues with RSI.

☐ cross-sectional ☐ case control ☐ cohort ☐ RCT

2. For study (c) above, there is the option of blinding or double blinding in the study.

- (a) Explain what is meant by the terms blinding and double blinding in research studies.
- (b) What are the advantages and disadvantages of blinding in research studies?

3. Each of the study designs given have their advantages and disadvantages.

- (a) What are the advantages and disadvantages of a case-control study?
- (b) What are the advantages and disadvantages of a cohort study?
- (c) What are the advantages and disadvantages of a cross-sectional study?
- (d) What are the advantages and disadvantages of a randomised control trial study?