

# 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?