

**Medical Statistics (MATH38071) Exercise Sheet 1
(Introduction)**

1. In studies investigating the effect of an exposure on health, what is the difference between observational and experimental studies? Give an example where it would not be ethical to conduct an experimental study in human subjects.

2. Consider a study investigating whether consumption of sugar causes heart disease. Suggest an example of each of the following types of variable
 - (i) Exposure
 - (ii) Outcome
 - (iii) Intermediate
 - (iv) Confounding.

3. Give one advantage and one disadvantage of using each of the following types of epidemiological study design to investigating whether sugar causes heart disease:
 - (i) A cases-control study.
 - (ii) A cohort study.