Experimental Design

Randomisation

The purpose of randomisation is to eliminate bias

This is usually done through random sampling although this is often difficult to execute well.

The best design for reducing error is

COMPLETELY RANDOMIZED DESIGN

where no conscious thought is used when allocating treatment or placebo.

However, if you take notice of every criticism you will end up eliminating everything

Blocking

With a randomized block design, the experimenter divides participants into subgroups called blocks, such that the variability within blocks is less than the variability between blocks.

Then, participants within each block are randomly assigned to treatment conditions. Because this design reduces variability and potential confounding, it produces a better estimate of treatment effects.

Repeated Measures

The same participants take part in each condition of the independent variable.

This means that each condition of the experiment includes the same group of participants.

Matched Pairs

A matched pairs design is a special case of the randomized block design. It is used when the experiment has only two treatment conditions; and participants can be grouped into pairs, based on one or more blocking variables.

Then, within each pair, participants are randomly assigned to different treatments.