Methodology and experimental design in applications: Guidance for reviewers and applicants

Robust methodology and experimental design should be at the centre of any proposal to aid reproducibility of research findings. In this regards, provided below is a summary of key considerations in applications. This summary is not exhaustive. Full details can be found in the MRC Guidance for applicants and the MRC Guidance for peer reviewers.

Applicants are encouraged to seek input from those with the relevant statistical and/or methodological expertise to review their proposed experimental design and analysis plan.

Summary of key methodological & experimental design considerations during peer review

Has the applicant **clearly set out** and **justified** the following:

- Measures for avoidance of bias (e.g. blinding, randomisation)
- Number of experimental and control groups and sample size per group
- How the sample size was calculated, showing power calculations and including justification of effect size[1]
- Overview of the planned statistical analyses in relation to the primary outcomes to be assessed
- Frequency of measurements/interventions to be used
- Circumstances in which power calculations are not appropriate to determine sample size

Where to find this information in the application

Case for support: 'methodology and experimental design' annex

All applicants are encouraged to provide a **one page annex** to the case for support to detail the methodological and experimental design elements of their research proposal.

This is **strongly** encouraged where the proposal contains the use of animals and/or human participants or where the methodology/experimental design proposed is particularly novel. See Section 2.4.3 of the 'MRC Guidance for applicants' for more detail.

[1] The applicant should provide sufficient information such that sample size/power calculations *could* be replicated.