Experimental Design Report

This report was generated by the Experimental Design Assistant (EDA; eda.nc3rs.org.uk), an online tool which guides researchers through the design and analysis of in vivo experiments and provides tailored advice and feedback based on the information the researcher inputs.

The report below summarises the details provided by the researcher and the feedback from the EDA. It represents a single experiment and includes the methodological information required to adhere with the ARRIVE Essential 10. For more information visit the Experimental Design Report webpage.

Title of EDA diagram	2025-11-23_MP968_Workshop
Date report generated	23/11/2025
Null hypothesis	Information not provided
Alternative hypothesis	Information not provided

Section 1: Methodological information from the ARRIVE Essential 10

Information in this section has been inputted by the researcher

1.1: Study design and sample size (ARRIVE items 1 and 2)

Total number of animals in the experiment	Information not provided
Experimental unit	animal
Groups included in the primary analysis	2 groups:
• Control	role=?; n=6
• Treatment	role=?; n=6
Justification for sample size	unpaired t-test calculation (one-sided); effect size = 2; standard deviation = 1; alpha = 0.05; power = 0.9
Effect of interest	Information not provided
Effect size	Information not provided
Justification for effect size	Information not provided

1.2: Inclusion and exclusion criteria (ARRIVE item 3)

Exclusion criteria	Information not provided
Inclusion criteria	Information not provided
Criteria for excluding data points from the analysis	Information not provided

1.3: Randomisation and blinding (ARRIVE items 4 and 5)

There is one step in this experiment where experimental units are allocated to groups:

• Randomisation

Randomisation strategy	randomisation within blocks
Randomisation procedure	Information not provided
Allocation concealment	Information not provided

There is one step in this experiment where measurements are taken:

• Plasma glucose

Blinding during result assessment	Information not provided
Measurement order strategy	Information not provided

There is one analysis in this experiment:

• Analysis

Blinding during analysis of the data	Information not provided

1.4: Outcome measures (ARRIVE item 6)

Outcome measures in the primary analysis	Glucose levels, treated as continuous
Other outcome measures	None

1.5: Statistical methods (ARRIVE item 7)

Details of the primary analysis (Analysis)

Statistical analysis method	Information not provided
Factor of interest	Drug A, categorical, with 2 levels (vehicle, vehicle + drug)
Blocking factor	Sex, categorical, with 2 levels (female, male)
Covariate	None
Statistical assumptions assessed by	Information not provided

1.6: Experimental animals (ARRIVE item 8)

Justification for not using both sexes	Not applicable

female mice

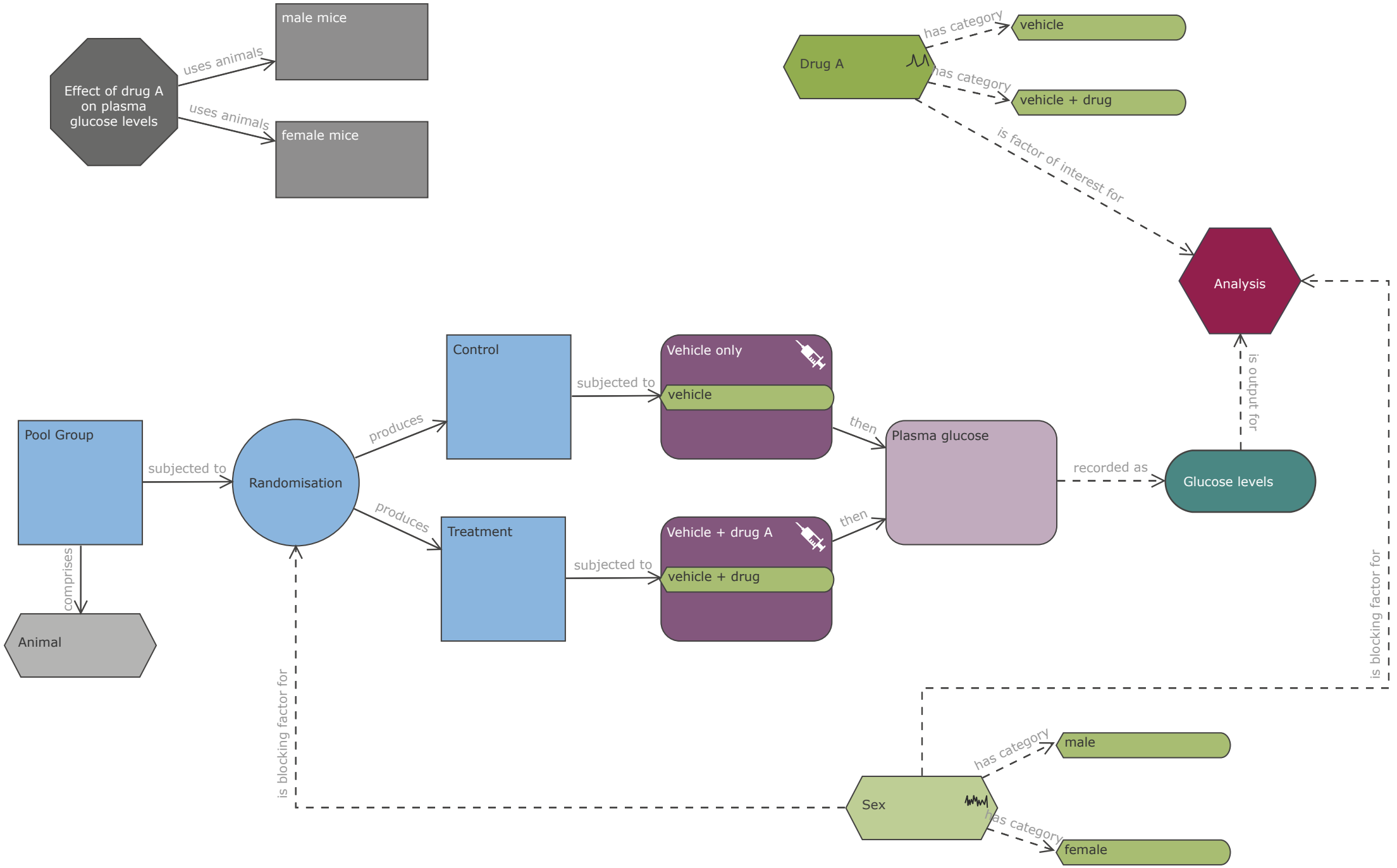
Species	mouse
Strain	Information not provided
Sex	female
Age	Information not provided
Weight	Information not provided
Genetic background	Information not provided
Previous procedures	Information not provided
Supplier	Information not provided

male mice

Species	mouse
Strain	Information not provided
Sex	male
Age	Information not provided
Weight	Information not provided
Genetic background	Information not provided
Previous procedures	Information not provided
Supplier	Information not provided

1.7: Experimental procedures (ARRIVE item 9)

Flow diagram of experimental plans on following page


Effect of drug A on plasma glucose levels
uses animals
male mice
uses animals
female mice
Drug A
has category
vehicle
has category
vehicle + drug
is factor of interest for
Analysis
is output for
Pool Group
subjected to
Randomisation
produces
Control
subjected to
Vehicle only
vehicle
then
Plasma glucose
recorded as
Glucose levels
produces
Treatment
subjected to
Vehicle + drug A
vehicle + drug
then
comprises
Animal
is blocking factor for
is blocking factor for
Sex
has category
male
has category
female

Section 2: Summary of the feedback provided by the EDA

This section summarises feedback from the EDA. Critique (Table 2.1) represents feedback that remains unaddressed at the end of the design process. Advice for the primary analysis (Table 2.2) represents either feedback or a statistical analysis method appropriate for the design represented in Section 1.

Information in Tables 2.1 and 2.2 is dependent on the quality, including accuracy and completeness, of the information inputted by the researcher. Where the researcher has not addressed issues detected by the EDA, it is important to note that does not always undermine the design of the experiment.

2.1: Critique

Issues related to the diagram structure, which might compromise the accuracy of this report	No issues were detected
Issues related to internal consistency	No issues were detected
Issues related to missing information	• Method of analysis or statistical assumptions are not specified • Blinding status during analysis is not specified • Blinding status when the results are assessed is not specified • Role of group in the experiment is not specified • How experimental units are allocated to different categories of the independent variable of interest is not specified • Sample size or number of animals per group is not specified • Null or alternative hypothesis is not specified • Effect of interest, effect size or justification for the effect size is not specified • Randomisation strategy or procedure at the time animals are allocated into groups is not specified • Blinding status at the time animals are allocated into groups is not specified • The supplier of at least some animals has not been specified • It has not been specified if animals have undergone any procedures prior to this experiment • Genetic background for at least some animals is not specified
Issues suggesting improvements to the design	• The strategy for deciding which order to take at least one measurement in is not specified • Not all inclusion and exclusion criteria have been specified • Assumptions to assess if statistical analysis methods will be appropriate have not been specified

2.2: Advice for the primary analysis

Suggestion for a method of analysis appropriate for the design	One-way ANOVA with blocking factors