

Acclimatisation of rats prior to experiments

Animals that have been exposed to stressful events need to be acclimatised before they are used in experiments. Such acclimatisation aims to stabilise physiological parameters that change during stress. The stabilisation may return levels to those before the stressful event, or to new normal levels for the individual. Consult scientific literature for guidance regarding how stress affects the strains you are going to use and the type of experiments you are going to conduct.



Events that cause stress and therefore may require acclimatisation

- Transport between facilities
- Transport within a facility
- Changes in circadian rhythm
- Regrouping

Other changes that may cause stress

- New people
- New routines
- New feed
- Changed temperature
- Changed humidity

Elements that affect the required length of acclimatisation

- Length of transportation
- Stress sensitivity, learning process and fear response of the strain
- The age of the rat
- The sex of the rat
- Parameters that are of importance for the experiment

Transportation

Within the facility: 1–2 days is common

Acclimatisation of rats that have been transported within a facility is not carefully studied. One study has showed that 2 days are required to stabilise:

- Body weight
- Corticosterone in the blood
- Heart rate
- Blood pressure
- Activity level

Observe that a stabilisation of behaviours may require a longer time of acclimatisation.

Circadian rhythm

Studies recommend 1-3 weeks, or 1 day per hour of change in time for males, longer for females

Studies show that it may require several weeks to stabilise parameters that are affected, including:

- Activity level
- Blood pressure
- Heart rate

Observe that rats may be affected by the changes between summer and winter time.

Between facilities: 5–7 days are common, studies recommend 2 weeks for males and 3 weeks for females

Acclimatisation for 5–7 days post transport to a new facility is often shown to be sufficient to stabilise:

- Blood pressure
- Body temperature
- Body weight
- Stress proteins in heart, brain, kidneys, lungs, liver and muscles

Other parameters may require a longer time of acclimatisation

- Corticosterone: 3 days–3 weeks or longer
- Glucose: males 2 weeks, females 3 weeks
- Heart rate: males 7–8 days, females 2 weeks or longer
- Behaviours and activity: 3–16 days or longer

This poster is a short summary of the support material regarding acclimatisation of rats prior to experiments, produced by the Swedish 3Rs Center. Scan here to read the complete report:

