

# Communal rearing gives mice a competitive edge

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Research by scientists at the University of Liverpool suggests that being raised communally makes mice more competitive when they're older.

It is well known that in many animals, including humans, early-[life experiences](#) have long-lasting effects on the development of behaviours later in life.

In a new study published in *Scientific Reports*, researchers at the University's Institute of Integrative Biology have investigated the effects of communal rearing on competitive and exploratory behaviours in adult male house [mice](#).

"Female house mice pursue two flexible social strategies, either raising their offspring in communal or single nests. This makes them an ideal model species to study how these different approaches shape future development," explains lead researcher Dr. Stefan Fischer.

The decision to care communally can vary according to local conditions and has been hypothesised to occur more frequently when social competition is intense. However, it is unknown whether communal rearing of young influences adult behaviours under competitive conditions.

Using a controlled experimental approach, the [researchers](#) found that when compared to single reared males, communal reared males were more competitive towards unrelated males than towards related males.

In tests of competitive scent marking, only communally-reared mice discriminated between related and unrelated rivals, depositing more scent marks in close proximity to unrelated [males](#).

Communally-reared mice also displayed higher exploratory tendencies, with, for example, an increased probability of crossing a water barrier.

Dr. Fischer said: "Since exploration tendencies and discrimination between kin and non-kin are likely to be advantageous when dispersing

from the natal territory or in a high-density population, our findings suggest that communal rearing prepares male house mice for a competitive social environment."

Senior author Professor Paula Stockley added: "Our results add to growing evidence that the early social environment influences the development of important behavioural competences to cope with social challenges later in life."

The paper 'Communal breeding affects offspring behaviours associated with a competitive social environment' is published in *Scientific Reports*.

**More information:** Stefan Fischer et al, Communal breeding affects offspring behaviours associated with a competitive social environment, *Scientific Reports* (2018). [DOI: 10.1038/s41598-018-35089-w](https://doi.org/10.1038/s41598-018-35089-w)

Provided by University of Liverpool

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