

Modifying environment for laboratory mice and rats may enhance their welfare.

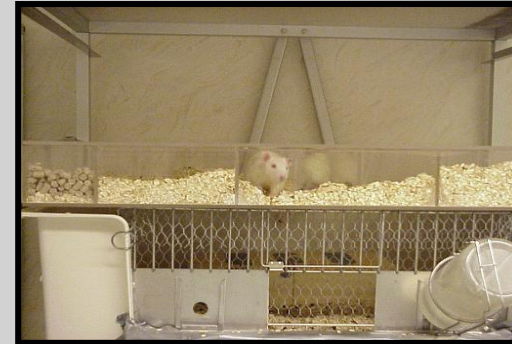
Commonly environmental design for laboratory animals addresses ergonomic and economic needs rather than animal welfare needs. This may deprive the animal of the ability to perform species specific behaviours that are so important in captive environments. Behaviours that can occur when deprived of specific needs are stereotypes like exaggerated digging, climbing and whisker removal from cagemates.



A way to enhance the environment is to use enrichment: improvement of the biological functioning of captive animals resulting from modifications to their environment.

In this study nesting material was introduced as enrichment to mice and foraging enrichment to rats. The impact on the animals, with emphasis on anxiety, exploration and long term effect was investigated.

In experiment I, female mice were placed in enriched housing system containing nesting material, or control cages. Mice behaviour in home cage was observed during two periods with one week in between to determine if the enrichment was still being used. Risk assessment and anxiety behaviours were observed in an open field test. **During experiment II**, enrichment in the shape of a maze, was introduced to male rats. The observation procedure was performed in the same way as in experiment I. Food was placed in the corners of the maze; the control cages were provided food ad libitum



Between the enriched housing system and the control cage a difference was observed in grooming and sleeping where these behaviours was performed more by the control group. These two results contradict each other when grooming is said to show *less* in the animals with enrichment while sleeping is more prominent in an enriched system. The fact that rearing occurred more in the control housing can easily be explained by the structure of the cage. In the control housing the roof was transparent and therefore inviting to rear, while in the enriched cage the roof was a maze through which the rats couldn't see.

During the second period the mice was seen climbing and digging more while nesting, grooming, feeding and sleeping were performed more in the first period. Given that climbing and digging is considered stereotypic behaviours, it is not surprisingly. No stereotypes/abnormal behaviours were seen in the enriched cages and that may be explained by the possibility to manipulate and build nests for the mice.

Even simple enrichment may have great potential in reducing stereotypic behaviours, increase exploratory behaviour and therefore enhancing well-being

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