CHANGING THE ORDER OF TESTS ON MICE COULD REDUCE ANXIETY & DEPRESSION

By: Natalie Pinder

Animal models play an important role in helping researchers understand human responses to many medications and situations. Currently, Dr. John E. Hoover and Cross Truesdell of Millersville University are utilizing animal models in their research to investigate whether different tests can cause anxiety and depression in mice, similar to humans.

The tentative results from this study have the potential to impact future research that use the tests and may increase their accuracy. Since there are many behavioral and anatomical similarities between humans and other animals – particularly mammals such as mice– this lends them to be important in research.

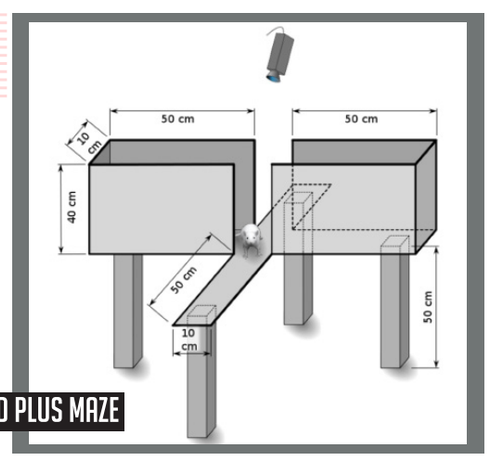
The purpose of this study is to determine whether the order in which three of the most common anxiety/depression tests used on mice can actually elevate their levels of anxiety and depression. Age is also a factor that is being tested in the second stage of the study, to determine whether age also affects behavioral changes. Mice are being used in these experiments because they exhibit many human-like behaviors, such as anxiety and depression.

They exhibit anxious and depressive behaviors similar to humans, such as avoiding open spaces and not trying to escape when trapped. There is a lot of variation in the behaviors expressed amongst humans with anxiety disorders, and this sort of variation can likewise occur in mice. So, the results can be theoretically applied to human models.These behaviors are related to the fear response, which is a natural response that either aids or inhibits survival.

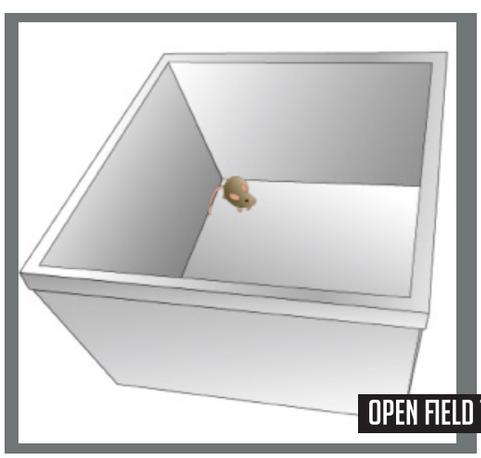
Fear and anxiety responses are regulated by GABA receptors and other neurotransmitters. As a result, many animal models are exposed to drugs that act on GABA receptors and the resulting effect on anxious or depressive behaviors can be monitored. The results from studies using animal models provide a good framework for human behaviors in response to similar stimuli.

POPULAR TESTS AND THEIR EFFECT ON ANXIOUS AND DEPRESSIVE BEHAVIORS

One of the ways in which scientists commonly determine the effects of anxiolytic and anxiogenic drugs on mice behaviors is by exposing them to a series of tests. Anxiolytic inhibits anxiety and anxiogenic drugs cause anxiety. There are three in particular that are most



ELEVATED PLUS MAZE


OPEN FIELD TEST

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