Effects of Environmental Enrichment on a Mouse Model of Stress-Induced Depression

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Major Depression is a common health problem in the United States and around the world. If left untreated, depression can lead to self-harm, suicide, and occasionally violence against others. While the treatment of severe Major Depression relies largely on the use of antidepressant drugs, the drugs that are currently available often lead to incomplete remission of the disease, are associated with numerous side effects, and, in some cases, fail to provide any benefit to the patient. As a result, there is a great deal of interest in not only the development new classes of antidepressant drugs, but also the development of non-pharmaceutical treatments. Here, we used the chronic Social Defeat Stress paradigm to induce a depressive-like phenotype in wild-type mice. We then allowed the mice to recover for 28 days in either a standard control environment or an enriched environment. We found that Social Defeat stress induces a persistent depressive-like and anxiety-like phenotype that was effectively treated by exposure to Environmental Enrichment. The results of this study may lead directly to the development of non-drug approaches to the treatment of stress-related psychiatric disorders such as Major Depression and Post Traumatic Stress Disorder (PTSD). Furthermore, future studies into the mechanisms of action of Environmental Enrichments in the brain may provide novel targets for antidepressant drugs.

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