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EnviroMood

Neurobiological mechanisms of the environment - plasticity - behaviour interaction

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Depression is a serious mental health condition that affects how a person feels, thinks and behaves. People who are depressed often feel persistently sad, empty, or hopeless. Depression is very common and affects more than one in ten people during their life, females twice as often as males.

In this research project, we examine the role of brain plasticity in the development and treatment of depression. Brain plasticity means that connections between nerve cells and different areas in the brain can be strengthened, weakened or reorganized in response to experiences, learning or environmental changes. In depressed patients, brain plasticity is generally weaker than in healthy people; and antidepressants increase brain plasticity. However, this might not always be good. If people are treated with antidepressants while living in very negative conditions (e.g. are poor, have conflicts in their family or have suffered serious trauma), medication might work worse. It is therefore important to know how exactly the environment influences plasticity in the brain; and how antidepressants work to enhance brain plasticity. With this knowledge, it might be possible to predict how patients with depression should be treated. Another long-term goal of our research, based on this knowledge, is to develop new antidepressant treatments, which have fewer side effects and work better than the existing drugs. In this research project, an international group of researchers examines healthy and depressed humans, animals and nerve cells to improve the treatment of depressed patients and to prevent that depression affects so many people.