

# Getting dirty may lift your mood

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Treatment of mice with a 'friendly' bacteria, normally found in the soil, altered their behavior in a way similar to that produced by antidepressant drugs, reports research published in the latest issue of *Neuroscience*.

These findings, identified by researchers at the University of Bristol and colleagues at University College London, aid the understanding of why an imbalance in the immune system leaves some individuals vulnerable to mood disorders like depression.

Dr Chris Lowry, lead author on the paper from Bristol University, said: "These studies help us understand how the body communicates with the brain and why a healthy immune system is important for maintaining mental health. They also leave us wondering if we shouldn't all be spending more time playing in the dirt."

Interest in the project arose after human cancer patients being treated with the bacteria *Mycobacterium vaccae* unexpectedly reported increases in their quality of life. Lowry and his colleagues reasoned that this effect could be caused by activation of neurons in the brain that contained serotonin.

When the team looked closely at the brains of mice, they found that treatment with *M. vaccae* activated a group of neurons that produce the brain chemical serotonin. The lack of serotonin in the brain is thought to cause depression in people, thus *M. vaccae*'s effects on the behavior of mice may be due to increasing the release of serotonin in parts of the brain that regulate mood.

The new research supports this hypothesis, but future studies will be designed to determine if *M. vaccae*, other bacteria, or pharmaceutical compounds have antidepressant properties through activation of this group of serotonin neurons.

Source: University of Bristol

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