

Walking in nature found to reduce rumination

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Credit: Wikipedia.

(Medical Xpress)—A team of researchers working at Stanford University has found that people walking in a "natural" environment tend to engage in less rumination. In their paper published in *Proceedings of the National Academy of Sciences*, the group describes an experiment they conducted to measure one type of self-destructive behavior, and what they learned from it.

As the human race moves inexorably towards urbanization (we just recently passed the 50/50 rural/urban mark) scientists continue to learn more about what it might mean for us—one byproduct might be more [anxiety and depression](#). Biomedical researchers believe that some instances of both anxiety and/or depression come about due to what they call rumination—constantly flogging oneself with criticism of past mistakes and some studies have suggested that living in an urban environment might contribute to an increase in rumination. In this new effort, the researchers sought to learn if it might be possible for people to lessen the degree of rumination they engage in by simply going for a walk in a natural setting.

To find out, the team enlisted the assistance of 38 reasonably healthy adult male and female individuals—they were asked to participate in a study that consisted of taking questionnaires and undergoing fMRI scans before and after going for an hour and a half walk. The volunteers were split into two groups, one got to walk in a grassy area near the Stanford campus that was lined with lots of trees—the other group found themselves marching around in a strictly urban setting. The questionnaires were designed to illuminate rumination, while the fMRI scans focused on the subgenual prefrontal cortex—prior research showed it tended to light up during periods of rumination.

Afterwards, the researchers analyzed and crunched the data from the questionnaires and brain scans and came up with a rumination score which they then used to compare people in the two groups. They found that rumination remained level for the urban walkers but fell on average from 35.4 to 33.1 for the nature walkers. This the team claims, shows that taking a walk in a natural environment setting can reduce rumination, and possibly reduce symptoms of anxiety and depression, though they acknowledge that their sample size was small and suggest more research will need to be done to confirm their findings.

More information: Nature experience reduces rumination and subgenual prefrontal cortex activation, Gregory N. Bratman, *PNAS*, [DOI: 10.1073/pnas.1510459112](https://doi.org/10.1073/pnas.1510459112)

Abstract

Urbanization has many benefits, but it also is associated with increased levels of mental illness, including depression. It has been suggested that decreased nature experience may help to explain the link between urbanization and mental illness. This suggestion is supported by a growing body of correlational and experimental evidence, which raises a further question: what mechanism(s) link decreased nature experience to the development of mental illness? One such mechanism might be the impact of nature exposure on rumination, a maladaptive pattern of self-referential thought that is associated with heightened risk for depression and other mental illnesses. We show in healthy participants that a brief nature experience, a 90-min walk in a natural setting, decreases both self-reported rumination and neural activity in the subgenual prefrontal cortex (sgPFC), whereas a 90-min walk in an urban setting has no such effects on self-reported rumination or neural activity. In other studies, the sgPFC has been associated with a self-focused behavioral withdrawal linked to rumination in both depressed and healthy individuals. This study reveals a pathway by which nature experience may improve mental well-being and suggests that accessible natural areas within urban contexts may be a critical resource for mental health in our rapidly urbanizing world.

[Press release](#)

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