

Bullying by childhood peers leaves a trace that can change the expression of a gene linked to mood

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A recent study by a researcher at the Centre for Studies on Human Stress (CSHS) at the Hôpital Louis-H. Lafontaine and professor at the Université de Montréal suggests that bullying by peers changes the structure surrounding a gene involved in regulating mood, making victims more vulnerable to mental health problems as they age.

The study published in the journal [Psychological Medicine](#) seeks to better understand the mechanisms that explain how difficult experiences disrupt our response to stressful situations. "Many people think that our genes are immutable; however this study suggests that environment, even the social environment, can affect their functioning. This is particularly the case for victimization experiences in childhood, which change not only our [stress response](#) but also the functioning of genes involved in mood regulation," says Isabelle Ouellet-Morin, lead author of the study.

A previous study by Ouellet-Morin, conducted at the Institute of Psychiatry in London (UK), showed that bullied children secrete less cortisol—the stress hormone—but had more problems with social interaction and aggressive behaviour. The present study indicates that the reduction of cortisol, which occurs around the age of 12, is preceded two years earlier by a change in the structure surrounding a gene (SERT) that regulates serotonin, a neurotransmitter involved in [mood regulation](#) and depression.

To achieve these results, 28 pairs of identical twins with a mean age of 10 years were analyzed separately according to their experiences of bullying by peers: one twin had been bullied at school while the other had not. "Since they were identical twins living in the same conditions, changes in the chemical structure surrounding the gene cannot be explained by genetics or family environment. Our results suggest that victimization experiences are the source of these changes," says Ouellet-Morin. According to the author, it would now be worthwhile to evaluate the possibility of reversing these psychological effects, in particular, through interventions at school and support for victims.

Provided by University of Montreal

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