Paris, 15 September 2015

Looking at the brain to prevent depression in adolescents

Depression is a real public health issue with 8% of adolescents affected by it, according to the French National Authority for Health (HAS). Adolescence is a time of transition during which young people are prone to episodes of depression. This often complicates the diagnosis of this disease.

According to some studies, adolescents with severe depression appear to have deviations in the areas of the brain associated with reward response. It may explain that lack of interest and moroseness are more common symptoms than sadness.

To better understand this phenomenon, researchers at Inserm Unit 1000 "Neuroimaging and Psychiatry", led by Jean-Luc Martinot, in collaboration with a team from King's College (London) have studied over 1,500 young people (at 14 years old and two years later) using magnetic resonance imaging (MRI) through the European study IMAGEN. Participants were split into three groups: one group with depression, a second group with isolated symptoms of depression with no actual diagnosis and finally, a group of healthy subjects

Each participant had to carry out a task where the brain's reward response could be assessed (winning points in a game). The results of the simulated MRI confirms the scientists' hypothesis—that adolescents with depression or occasional symptoms of depression have reduced activity in a specific area of the brain, the ventral striatum, which is involved in the reward circuit. It is significant that the response in this region is even weaker than the depressed person's lack of interest.

"*The low activity in this region detected in healthy adolescents at 14 years old is correlated with the onset of depression or symptoms of depression at age 16*", explains Jean-Luc Martinot, Research Director at Inserm.

This study shows that impaired reward circuitry function is a factor that renders adolescents vulnerable to depression. The detection of symptoms involving loss of interest in adolescents and taking them into account in the early stages may help predict the onset of the disease or relapse and, as such, enable targeted early intervention well in advance.

Sources

The Brain's Response to Reward Anticipation and Depression in Adolescence: Dimensionality, Specificity, and Longitudinal Predictions in a Community-Based Sample
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Am J Psychiatry, 18 June 2015

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