

Adolescent depression: early signs and changes in brain development underscore the need for new preventive approaches

Teams of AP-HP, Inserm and Université Paris Sud, studied as part of an international research group, depressions called "subsyndromal" among young teenagers as they have a high risk to progress to depression in adolescence and later in adulthood.

This research demonstrates the existence of deviations of the microstructure of white matter in the prefrontal beams that provide connections between brain regions. The study in nearly 100 adolescents from 14 years of school, with only some depressive symptoms without apparent seriousness, and compared to a control population of more than 300 adolescents without symptoms recruited at the same time is published in the journal *The American Journal of Psychiatry*.

This variation of the normal maturation individual predictive value of a diagnosis of depression two years later. The identification of these adolescents at risk could improve the prevention of depression.

Adolescence is a particularly vulnerable period for the onset of depressive disorders. Authentic depressive episodes can occur, affecting about 12% of teenagers, but about 20% of teens will present depressions called subclinical or subsyndromal, that is to say that do not have visible symptoms.

Brain areas rearrangements such as cerebral cortex and white matter occur at this age, but the predictive factors of cerebral transition to depression in adolescents are not known.

Recently changes in prefrontal gray matter associated with the risk of depression in adolescence have been reported. The Child Psychiatry Service of the research teams and Adolescent to Pitié-Salpêtrière Hospital, AP-HP, INSERM, Université Paris Descartes and Paris-Sud University (unit Neuroimaging and psychiatry 1000) have investigated the changes in the white matter underlying the subsyndromal emotional states, commonly observed in young characterized without psychiatric disorders.

Comparing a group of teenagers from 14 years of school, with only some depressive symptoms without apparent gravity (96 individuals) to a control group (336 individuals), the researchers demonstrate the existence of deviations of the microstructure of white matter bundles prefrontal among teenagers in the first group.

These deviations relate to areas usually involved in major depressive episodes involved in the regulation of emotions and motivation.

In detail, the results suggest a delayed development of the myelin and a different maturation in these adolescents compared to control teenagers.

In addition, the research team found that these deviations have individual predictive value of a diagnosis of depression two years later.

These deviations from normal adolescent development constitute a vulnerability factor. Through these results, the authors encourage the development of preventive strategies for adolescents at risk.

Sources

Early Variations in White Matter Microstructure and Depression Outcome in Adolescents With Subthreshold Depression

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