

# Emotion disorders in adolescents: brain structure and behaviour correlates

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## Laboratory

Neuroimaging and Psychiatry INSERM - CEA Unit 1000  
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## Subjects / Tools-Methodologies

- 1 : Brain imaging / Magnetic resonance imaging
- 2 : Psychopathology / Neuropsychology
- 3 : Image processing / softwares

## Summary of lab's interests

The Inserm-CEA Unit 1000 affiliated to both Universities Paris Sud and Paris Descartes, has research facilities located within the Institute of Biomedical Imaging of the Atomic Energy Commission (CEA, at Service Hospitalier Frédéric Joliot, Orsay, and Neurospin, Saclay, France) which are devoted to the application of brain imaging techniques to the study of brain physiology and pathology, with Magnetic Resonance and PET scanners (1,5 GE MR scanner, high field Siemens 3T trio magnet, HRRT positron tomography) available full time for research. A computer maintenance team and a research team are involved in the support and development of image analysis and secure storage, and a hospitalisation ward with physicians and nurses is also available to assess healthy subjects and patients. The Inserm-CEA Unit 1000 team involves physicians, researchers, and engineers who have been trained to investigate juvenile or adult healthy subjects and patients with psychiatric conditions involving affect disorders or addictions, for more than fifteen years.

## Summary of project

Abstract of PhD project Emotion disorders will become the leading cause of disability during the next decade; over 30% of these cases begin in adolescence, being a risk factor for mental disorders in adults. Therefore, intensive research is needed to assess brain factors in juveniles. This period is characterized by increased structural brain changes, notably the white matter of the subjects. These changes will be examined by magnetic resonance imaging techniques (MRI), and diffusion-tensor MRI (DTI), that can examine in vivo grey and white matter architecture. Hypotheses will be tested regarding networks involved in emotion regulation. Subjects data will be provided through the IMAGEN European study database (<http://www.imagen-europe.com>) stored in Neurospin (CEA Saclay). Brain vulnerability for juvenile-onset affective symptoms will be approached using 3Teslas imaging techniques in adolescent subjects, and compared with their psychometric and behavioural characteristics, assessed both quantitatively and qualitatively. Statistical comparisons between patients and healthy controls, and correlation with psychosocial variables, will be undertaken.