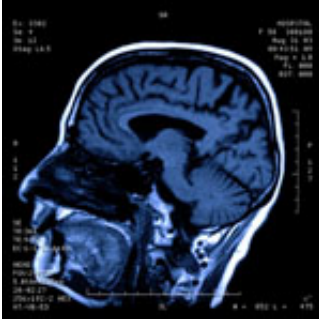


# GABA link to impulsive males

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(Medical Xpress) -- The reason why some men are more impulsive, act aggressively, drink and take drugs could lie in the fact that they have lower levels of a naturally occurring substance in a specific part of their brain, University research has uncovered.

Using the latest brain imaging techniques scientists from Cardiff University's Brain Imaging Research Imaging Center (CUBRIC) and University College London have identified a new link between impulsiveness and levels of GABA, a very common neurotransmitter, in a very specific part of the brain.

"Advances in brain imaging techniques mean we are able to investigate different and specific areas of the human brain and see how they regulate people's behavior," according to Dr. Frederic Boy, School of Psychology, who led the research published in the journal *Biological*

*Psychiatry* and funded by the Wellcome Trust.

"What is clear is that the way people behave results from a complex interaction between a number of genetic, social and environmental factors, what we've found is that one of the reasons why some men act impulsively may be related to the lower concentration of GABA in a specific part of men's brains."

The scientists studied male undergraduate students with no history of [psychiatric disorders](#) or substance dependence.

They underwent a specialized magnetic resonance spectroscopy brain scan, an imaging technique that allows measuring the amount of GABA in small regions of the brain followed by a questionnaire which helped assess different aspects of impulsivity, an important component of self-control.

The team found that individuals with more prefrontal GABA had lower scores in one aspect of impulsivity called the "feeling of urgency", the tendency to act rashly in response to distress or other strong emotions and urges. Inversely individuals with lower GABA tended to have higher urgency ratings.

The link with GABA was specific to the dorsolateral prefrontal cortex, a region previously implicated in higher cognitive functions.

The team hope that their research helps show a specific relationship between the brain's basic physiology, such as GABA-mediated signalling, and complex behavioral regulation can be uncovered.

Dr. Boy adds: "The ability to regulate our behaviour in response to a constantly changing physical and social world is key to adapted life.

"Failure in this finely tuned mechanism is particularly important in most psychiatric disorders, where impulsivity is the second most common symptom. We hope this research will lead to further studies and help bridge the gap between recent genetic studies and imaging studies of psychiatric disorders. "

Provided by Cardiff University

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