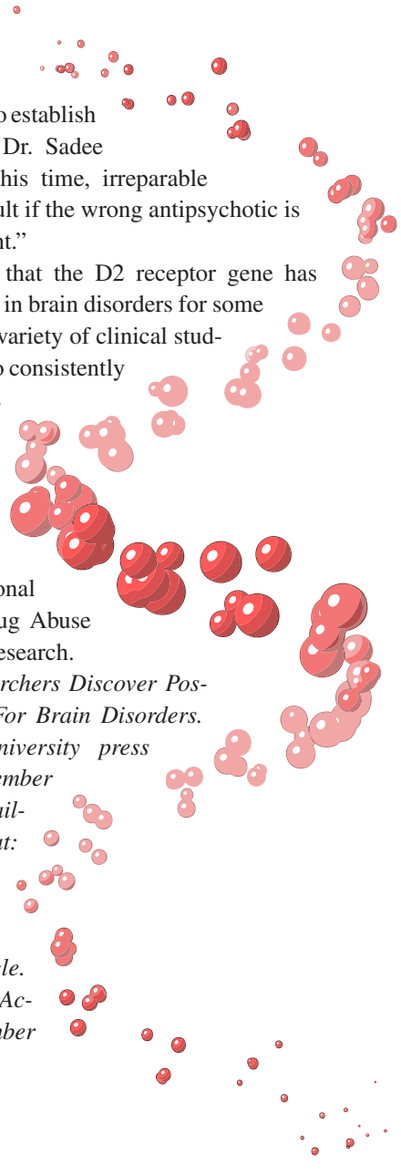
Researchers Discover Possible Markers For Brain Disorders



Researchers have discovered natural genetic differences that might help predict the most effective antipsychotic drugs for particular patients with brain disorders, such as schizophrenia, Parkinson's disease, and drug addiction.

They found the differences in the gene for a molecule called the dopamine D2 receptor (DRD2), a protein present on brain cells that are sensitive to the neurotransmitter dopamine. The receptor is known to play a key role in memory and in a variety of brain disorders. Most antipsychotic drugs work at least in part by blocking this protein, but scientists don't yet understand how this helps patients, nor can they explain why some people respond well to certain antipsychotic drugs and others respond poorly.

"Our study shows that these differences affect normal brain activity and memory processing, and therefore may also be important in mental illness," said principal investigator Wolfgang Sadee, program director in pharmacogenomics at the Ohio State University Medical Center.

The findings could lead to tests that will enable doctors to match patients with certain brain disorders to the most effective therapy, something they cannot do now, Dr. Sadee said.

The study was done in collaboration with Professor Alessandro Bertolino, University of Bari, Italy, who performed the clinical research. It is published online in the *Proceedings of the National Academy of Sciences.*

"Identifying these predictive markers is important because antipsychotic drugs are effective in only a portion of patients upon first treatment, and it takes a month or more to establish their efficacy," Dr. Sadee said. "During this time, irreparable damage can result if the wrong antipsychotic is given to a patient."

Sadee notes that the D2 receptor gene has been implicated in brain disorders for some time, but that a variety of clinical studies have failed to consistently link variations in the gene to disease. These findings may change that.

Funding from the National Institute on Drug Abuse supported this research.

From: Researchers Discover Possible Markers For Brain Disorders. Ohio State University press release. December 3, 2007. Available online at: http://medicalcenter.osu.edu/mediaroom/press/article.cfm?ID=3570. Accessed December 28, 2007.

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Pedophilia may be the Result of Faulty Brain Wiring

Pedophilia might be the result of faulty connections in the brain, according to new research released by the Centre for Addiction and Mental Health (CAMH). The study used MRIs and a sophisticated computer analysis technique to compare a group of pedophiles with a group of non-sexual criminals. The pedophiles had significantly less of a substance called "white matter," which is responsible for wiring the different parts of the brain together.

The study, published in the *Journal of Psychiatric Research*, challenges the commonly-held belief that pedophilia is brought on by childhood trauma or abuse. This finding is the strongest evidence yet that pedophilia is instead the result of a problem in brain development.

Previous research from this team has strongly hinted that the key to understanding pedophilia might be in how the brain develops. Pedophiles have lower IQs, are three times more likely to be left-handed, and even tend to be physically shorter than non-pedophiles.

"There is nothing in this research that says pedophiles shouldn't be held criminally responsible for their actions," said Dr. James Cantor, CAMH psychologist and lead scientist of the study, "Not being able to choose your sexual interests doesn't mean you can't choose what you do."

This discovery suggests that much more research attention should be paid to how the brain governs sexual interests. Such information could potentially yield strategies for preventing the development of pedophilia.

A total of 127 men participated in the study, approximately equal numbers of pedophiles and non-sexual offenders.

From: Pedophilia may be the result of faulty brain wiring. CAMH press release. November 28, 2007. Available online at: http://camh.net/News_events/News_releases_and_media_advisories_and_backgrounders/Pedophile_study_cantor.html. Accessed December 28,2007.

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