

Navajo County Drug Project

Navajo County Coalition Against Drug Abuse



A Coalition of Concerned Navajo County Residents Joined Together to:

- EDUCATE the Community on the substance abuse crisis
- REHABILITATE those who have fallen into the addiction
- ENFORCE laws pertaining to the spread of substance abuse in our communities

Press Release

DATE: Feb 26, 2009

For Immediate Release

Heavy Marijuana Use Damages Young Minds

Teens and young adults who are heavy marijuana users are more likely than non-users to have disrupted brain development, according to a new study that appeared in the *Journal of Psychiatric Research*.

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Pediatric researchers found abnormalities in areas of the brain that interconnect regions involved in memory, attention, decision-making, language and executive functioning skills. The findings are of particular concern because adolescence is a crucial period for brain development and maturation.

The researchers caution the study is preliminary and does not demonstrate that marijuana use causes the brain abnormalities. However, "Studies of normal brain development reveal critical areas of the brain that develop during late adolescence, and our study shows that heavy cannabis use is associated with damage in those brain regions," said study leader Manzar Ashtari, Ph.D., director of the Diffusion Image Analysis and Brain Morphometry Laboratory in the Radiology Department of The Children's Hospital of Philadelphia.

Working with child psychiatrist Sanjiv Kumra, M.D., Ashtari and colleagues performed imaging studies on 14 young men from a residential drug treatment center in New York, as well as 14 age-matched healthy controls. All the study subjects were males, with an average age of 19. The researchers performed the imaging studies at Long Island Jewish Medical Center.

The 14 subjects from the drug treatment center all had a history of heavy cannabis use during adolescence. Most had smoked marijuana from age 13 until age 18 or 19, and reported smoking nearly six marijuana joints daily in the final year before they stopped using the drug.

The study team performed a type of magnetic resonance imaging scan called diffusion tensor imaging (DTI) that measures water movement through brain tissues. The abnormal patterns of water diffusion that were found among the young adults with histories of marijuana use suggest damage or an arrest in development of the myelin sheath that surrounds brain cells, Ashtari said. Myelin provides a coating around brain cells similar to insulation covering an electrical wire. If myelin does not function properly, signaling within the brain may be slower.

Myelin gives its color to the white matter of the brain, and covers the nerve fibers that connect different brain regions. The study's results suggest early-onset substance use may alter the development of white matter circuits, especially those connections among the frontal, parietal and temporal regions of the brain. Abnormal white matter development could slow information transfer in the brain and affect cognitive functions.

For additional information, go to www.navajocountydrugproject.com.

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Mission Statement:

To develop a diverse community representation, coordinate a sustained effort in educating and preventing the substance abuse through a plan for change in local social norms through prevention, treatment and vigorous enforcement of existing laws.