**Category:** Genetics

**Title:** Illicit Psychoactive Substance Use, Heavy Use, Abuse, and Dependence in a US Population-Based Sample of Male Twins

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**Background:** In order to develop an informed approach to prevention and treatment of illicit psychoactive substance use. Physicians need to understand an individual’s risk for developing a disorder involving an illicit psychoactive substance.

**Objective:** To assess twin resemblance with the use and abuse of psychoactive illicit substances.

**Type of Article:** Study

**Design:** Structured interviews were obtained from twins in the Virginia Twin Registry, now part of the Mid-Atlantic Twin Registry.

**Patients:** US population-based twin population in the state of Virginia and the Mid-Atlantic area of the United States.

**Intervention:** Twin personal interviews to assess lifetime use, heavy use, and dependence for certain categories of substances using a structured clinical interview for the DSM-III-R.

**Outcomes Measured:** The prevalence and patterns of twin resemblance and the concordance between monozygotic and dizygotic twins were compared.

**Main results or findings:** In regard to substance use, environmental factors seem to play a significant role in twin resemblance in some point in substance use in men. Twin resemblance for heavy use, abuse, and dependence, however, is largely caused by genetic factors and heritability estimates are high. For the use of any drug, cannabis or hallucinogen a model suggesting both environmental and genetic was indicated. However, for use of sedatives, stimulants, cocaine or opiates, a model solely based on genetic factors was indicated.

**Conclusion/Limitations:** The study evolves a large US population-based registry. It is limited in that despite its size, (1) the study is still insufficient in size to make conclusions with high precision; (2) the sample is restricted to whites; and lastly (3) a twin study is a quasi-experimental method and cannot approach the methodological rigor possible with controlled genetic experiments.

**Commentary (Impact on Internal Medicine).** These results add to a growing body of family, twin, and adoption studies that suggest that the risk for psychoactive substance use and misuse is
substantially influenced by genetic factors. For the internist this means that assessing a patient’s family history for potential genetic risk is on par with assessing family history on assessing risk for coronary artery disease or certain malignancies. Also, this study supports placing substance abuse into the medical model of disease. Hopefully, this will continue to decrease the stigma associated with these disorders.