

Study looks at risk, family relatedness for Tourette syndrome, tic disorders

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The risk for tic disorders, including Tourette syndrome and chronic tic disorders, increased with the degree of genetic relatedness in a study of families in Sweden, according to an article published online by *JAMA Psychiatry*.

While tic disorders are thought to be strongly familial and heritable, precise estimates of familial risk and heritability are lacking, although gene-searching efforts are under way. Limitations also exist in previous research.

David Mataix-Cols, Ph.D., of the Karolinska Institutet, Stockholm, and coauthors tried to overcome some of those limitations by estimating family clustering and heritability of tic disorders at the population level using data from two Swedish population-based registers. The authors identified 4,826 individuals diagnosed as having Tourette syndrome or chronic tic disorders from 1969 through 2009. Of the patients with tic disorders, 72.8 percent had at least one lifetime psychiatric co-existing condition.

The authors found first-degree relatives of individuals with tic disorders had higher risk of having Tourette syndrome or chronic tic disorders than second- and third-degree relatives. In turn, the odds were higher for second-degree relatives than third-degree relatives.

Full siblings, parents and children of individuals with Tourette syndrome or chronic tic disorder (all with 50 percent [genetic similarity](#) but with

siblings assumed to have more shared environment because they grew up together) had comparable risks. The results also indicate that risks for full siblings (50 percent genetic similarity) were higher than those for maternal half siblings (25 percent genetic similarity) despite similar shared environmental exposures. First cousins (12.5 percent) genetic similarity had a three-fold higher risk of having Tourette syndrome or chronic tic disorders compared with control patients.

The authors note that using study data from registers also has limitations, including that it may only represent a fraction of all the individuals diagnosed with Tourette syndrome and chronic tic disorders in the Swedish population. The results also may not be generalizable to other populations.

"The heritability of tic disorders was estimated to be approximately 77 percent, with the remaining variance being attributable to nonshared environmental influences and measurement error. ... Our heritability estimates place tic disorders among the most heritable neuropsychiatric conditions," the study concludes.

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