

Should I get a genetic test to determine my risk of stroke?

There is evidence that some inherited genetic variations increase the risk of stroke in families, and especially in young women (ages 15 to 49). A study from the University of Maryland Medical Center examined 224 white and African-American women who had suffered a blocked-vessel stroke. Any one of five variations of a particular gene called phosphodiesterase 4D (PDE4D) was found to increase the risk of stroke by 50% to 100%. The highest risk was observed for one gene variation, which tripled stroke risk—but only in smokers. Current smokers with this variation were 3 times as likely as women in the control group to have a stroke; nonsmokers and former smokers did not have a significantly increased risk of stroke in the presence of the same genetic variation. This illustrates how someone's genes can interact with his or her environment to create a risk that the genes alone may not carry.⁷

For most people, testing for a particular gene variation is not necessary, but if you have close female family members who suffered a stroke at a young age, you should speak with your doctor about your personal risk and what you can do to minimize it.

Why is family history important if I can't change it?

Even though you can't change your family history, it is important for people with a family history of stroke to lower their overall risk by focusing on the risk factors they can change. Risk factors, both genetic and environmental, are often inherited; knowing which ones run in your family can help you target those that place you at the highest risk.

Collecting a detailed family history and sharing it with your doctor is an important step in controlling your risk of stroke: one large survey found that although 96% of people believe that family history is important for their own health, less than 30% have collected health information from their relatives to develop a family health history.⁸

How do I record my family history?

There are several online tools that can help you collect and organize a useful family history. The US Surgeon General's [My Family Health Portrait](#) allows you to create and print a personalized family health history report. See the links below for more information and tips on how to collect your family history.

For More Information

National Society of Genetic Counselors: Family History
www.nsgc.org/consumer/familytree/

US Surgeon General's Family History Initiative
www.hhs.gov/familyhistory/

Centers for Disease Control and Prevention Family History
<http://www.cdc.gov/genomics/famhistory/famhist.htm>

References

1. Jood K, Ladenvall C, Rosengren A, Blomstrand C, Jern C. Family history in ischemic stroke before 70 years of age: the Sahlgrenska Academy Study on Ischemic Stroke. *Stroke*. 2005;36:1383-1387.
2. Jerrard-Dunne P, Cloud G, Hassan A, Markus HS. Evaluating the genetic component of ischemic stroke subtypes: a family history study. *Stroke*. 2003;34:1364-1369.
3. Morrison AC, Fornage M, Liao D, Boerwinkle E. Parental history of stroke predicts subclinical but not clinical stroke: the Atherosclerosis Risk in Communities Study. *Stroke*. 2000;31:2098-2102.
4. Wannamethee SG, Shaper AG, Ebrahim S. History of parental death from stroke or heart trouble and the risk of stroke in middle-aged men. *Stroke*. 1996;27:1492-1498.
5. Kim H, Friedlander Y, Longstreth WT, Jr., Edwards KL, Schwartz SM, Siscovick DS. Family history as a risk factor for stroke in young women. *Am J Prev Med*. 2004;27:391-396.

6. Touze E, Rothwell PM. Heritability of ischaemic stroke in women compared with men: a genetic epidemiological study. *Lancet Neurol*. 2007;6:125-133.
7. Song Q, Cole JW, O'Connell JR, et al. Phosphodiesterase 4D polymorphisms and the risk of cerebral infarction in a biracial population: the Stroke Prevention in Young Women Study. *Hum Mol Genet* . 2006;15:2468-2478.
8. Centers for Disease Control and Prevention. Awareness of family health history as a risk factor for disease - United States 2004.

[SEO](#) by [AceSEF](#)