

The official newsletter of The Genomical Connection (TGC), formerly the Guilford Genomic Medicine Initiative (GGMI)

Blood clots: Breaking down the risk factors

Did you know...

- About 200,000 people die each year of blood clots. This is more than breast cancer, AIDS, and car accidents combined.
- During a 3-year study at London's Heathrow airport, 18% of the 61 sudden deaths in long-distance passengers were caused by blood clots in the legs.
- 5-7% of Caucasians of European descent are carriers of factor V Leiden.
- 1.2% of African Americans are carriers of factor V Leiden.
- Famous people who have been diagnosed with blood clots:

V.P. Dick Cheney

David Bloom*

V.P. Dan Quayle

*Died from a pulmonary embolism (PE)



"Over the river and through the wood, to grandmother's house we go..."

The holidays are the time of year when families travel to see each other. Since sitting for long periods of time, such as in a car or on a plane, can make getting a blood clot more likely, it is a good time to learn about your risk factors.

About 1 in 1000 people in the United States will have a blood clot in their veins, called a venous thrombosis.

The most common type of clot is a deep vein thrombosis (DVT). A DVT is a blood clot that forms in the large veins of the body, most commonly in the leg. Blood clots can slow or stop the flow of blood which can cause pain and swelling.

Sometimes the clot breaks off and travels to the lung. This is called a pulmonary embolism (PE). PE's can cause shortness of breath, chest pain, and in about 30% of cases, sudden death.

Risk factors that make you more likely to get a blood clot include:

- Inheriting gene changes
- Family history of blood clots
- Being older than 60
- Smoking
- Leg or pelvic surgery
- Pregnancy
- Varicose veins
- Cancer
- Congestive heart failure
- Periods of immobility
- Obesity
- Taking hormone replacement therapy or oral contraceptives

About 1 in 1000 people will get a blood clot every year. However, your actual risk depends on your personal and family history. Almost 33% of people with blood clots have inherited a change in a gene.

The two most common inherited blood clotting disorders are *factor V Leiden (FVL)* and *prothrombin G20210A*. *FVL* is seen in 5-7% of the Caucasian population and in about 1.2% of the African American population. *Prothrombin G20210A* is seen in about 2-3% of the Caucasian population. This means about one in 10 to 14 people have inherited a

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Blood clots: Breaking down the risk factors (continued)

predisposition for getting a blood clot. Most of the time, people never know that they are more likely to get blood clots.

If you inherit a genetic change it does not mean you will definitely get the disease. For example, individuals who inherit one *FVL* gene change have a 10% chance of getting a blood clot in their lifetime. Those with two gene changes in the *FVL* gene have a 50-60% chance of getting a blood clot sometime during their life.

Because the chance of getting a blood clot is low, only people who meet certain criteria should get genetic testing. People who may want to get genetic testing for inherited blood clots include:

- ✓ Those who have a blood clot under the age of 50.
- ✓ Those who have two or more close relatives with a blood clot under the age of 50.
- ✓ Those who have a family member with a known gene change.
- ✓ Women who have a blood clot during pregnancy or while on oral contraceptives.
- ✓ Women smokers who have had a heart attack under the age of 50.
- ✓ Women with three or more miscarriages.

People who test positive for an inherited blood



clotting disorder can make informed decisions on the use of oral contraceptives, hormone replacement therapy, pregnancy and elective surgery. They can be treated before they get into situations that would make them more likely to have a blood clot. They may also be able to change their lifestyle

habits to lower their risk for clotting. Individuals can be given information on the signs and symptoms of clots so they can get early treatment.

The frustrating aspect of this condition is that there is no long-term treatment to prevent blood clots. This could cause emotional stress and possibly affect the decision on whether to have children.

If you have a family history of blood clots, talk with your doctor. It may help save your life! The key is to:

- ✓ Be aware of your risk factors.
- ✓ Know your family history.
- ✓ Talk to your doctor.

Knowing your risk factors now, will help make sure you have a healthy future!



On the Web...

The Genomedical Connection
www.genomic-medicine.org

National Alliance for Thrombosis and Thrombophilia
www.nattinfo.org

Factor V Leiden
www.fvleiden.org