



## What is a Blood Clot?

A blood clot is when your blood changes from a liquid to a solid. This is usually a good thing but sometimes it is a bad thing. A blood clot is a good thing because it stops the bleeding when you cut or hurt yourself. A scab is a type of clot.

Blood clots can develop in your veins (v-ay-n-s) or arteries (art-er-ees) which are the pipes that carry your blood back and forth to your heart. Sometimes blood clots form in places they are not supposed to; this is called a bad blood clot or “throm-bo-sis”.

## How Does Blood Clot?

There are proteins (pro-teens) in your blood that are so small you cannot see them without a special magnifying glass. These proteins work together to make sure your body makes a clot when you need it. Some of these proteins are called factors.

Other proteins prevent your blood from clotting too much and causing a clot when you do not need one.

The proteins work together to balance blood clotting so that your blood does not make a clot when it does not need one.

You may have developed a bad blood clot because one of your proteins may be different. You may have inherited this from your mom or dad.

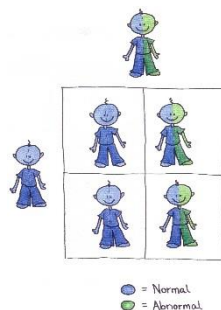
Your doctor can check the proteins in your blood to see if they are different, and may cause you to get another bad blood clot.

This is called a throm-bo-phil-ic work-up.

## Differences in Clotting Proteins that May Increase Risk for Thrombosis

There are many things that can cause a ‘bad’ blood clot (thrombosis). There are 5 main blood components that we can test your blood for. Differences in the amount and action of these proteins may increase your risk for thrombosis.

These differences may be inherited from a parent, both parents, or may occur when you are very ill.



Differences in these, can increase your risk of getting a bad blood clot from very, very, very small to very very small.

$\frac{2}{10}$	$\frac{2}{100}$	$\frac{2}{1000}$
Equal decimals are		
0.2,	0.02,	0.002

We will describe them next.

**The five most common differences are:**

- Factor V Leiden (FVL)

Heterozygous means that the difference is inherited from one parent.

5/100 people have heterozygous FVL which increases your risk of getting a blood clot from 1/1000 per year to 3-10/1000 per year.

With Estrogen therapy, such as oral contraceptive pills, the risk increases to 5/1000 per year.

The risk of getting a blood clot when you are pregnant increases to 21/1000 per year.

- Prothrombin Gene 20210 (PG20210)

Heterozygous:

2-3 /100 people have heterozygous prothrombin gene. If you have it, your risk for thrombosis increases your risk of getting a blood clot from 1/1000 per year to 3-10/1000 per year. With Estrogen therapy, such as oral contraceptive pills, the risk increases to 5/1000 per year and 23/1000 per year with pregnancy.

$\frac{2}{10}$	$\frac{2}{100}$	$\frac{2}{1000}$
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Equal decimals are

0.2,	0.02,	0.002
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- Protein C Deficiency: 3/1000 people have it. If you have it, your risk for thrombosis increases from 1/1000 per year to 5-10/1000 per year and to 40/1000 per year with Estrogen therapy or pregnancy.
- Protein S Deficiency: 3/1000 people have it. If you have it, your risk for thrombosis increases from 1/1000 per year to 5-10/1000 per year and to 40/1000 per year with Estrogen therapy or pregnancy.
- Antithrombin Deficiency: 3/1000 people have it. If you have it, your risk for thrombosis from 1/1000 to 5-10/1000 and to 40/1000 with estrogen therapy or pregnancy.

**Considerations for Thrombophilia Testing**

- If testing is performed and is positive, it may impact the individual’s ability to get life and or mortgage insurance as it requires declaration.
- Testing performed for tests other than DNA (FVL, PG20210) such as protein C, protein S and antithrombin may be influenced by developmental hemostasis until adolescence. As a result, any testing performed prior to age of approximately 10 years may indicate a false positive result.
- It is sufficient for the individual to declare previous personal or family history of thrombosis to demonstrate increased risk for thrombosis.
- Thrombophilia testing rarely alters clinical management.

**If your decision is not to pursue thrombophilia testing at this time, you may contact KIDCLOT at 780-248-5640 or have your family doctor request a consult.**