

### What is Deep Venous Thrombosis?

Deep Venous Thrombosis (DVT) is a blood clot that forms in the large vessels of the body including areas such as arms, legs, lungs, and heart.

### What are the symptoms of DVT?

DVT most often presents as swelling in an arm or leg that is painful, red and may be warm to touch. These can occur for no apparent reason, or may occur following an injury, surgery, immobility, or with a central venous line or access device.

**Pulmonary embolism (PE)** is when a blood clot occurs in the vessels of the lung. The symptoms of (PE) are difficulty breathing and pain when breathing in and sometimes coughing up blood.



### How many people develop Deep Venous Thrombosis?

1/1000 adults per year will develop thrombosis (0.1%).

### Children are not little adults

Thrombosis in children is rare compared to adults. Less than 1% of children are hospitalized and of those only 3-6 children per 1,000 **hospital admissions** will develop thrombosis. (0.3-0.6% of hospitalized children).

**Because**, children have unique physiologic differences in hemostasis (balance of bleeding and clotting), which exist across the pediatric age spectrum. These differences influence the incidence, epidemiology, and outcomes of thrombosis in children. These differences progress towards normal adult hemostasis throughout the teenage years.

How does clotting happen within my body?

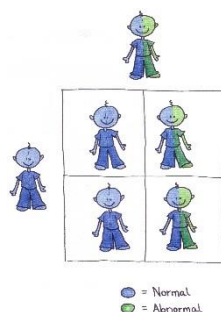
Good blood clots occur after you have injured yourself and a scab develops and allows healing.

There are a number of proteins within our blood that either promote or deter clotting. These proteins work together to balance the risk between bleeding and clotting.

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

There are 5 main blood components that we can test 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 with illness.



Differences in these, can increase your risk for DVT.

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

**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 your health provider to request a thrombosis consult.**