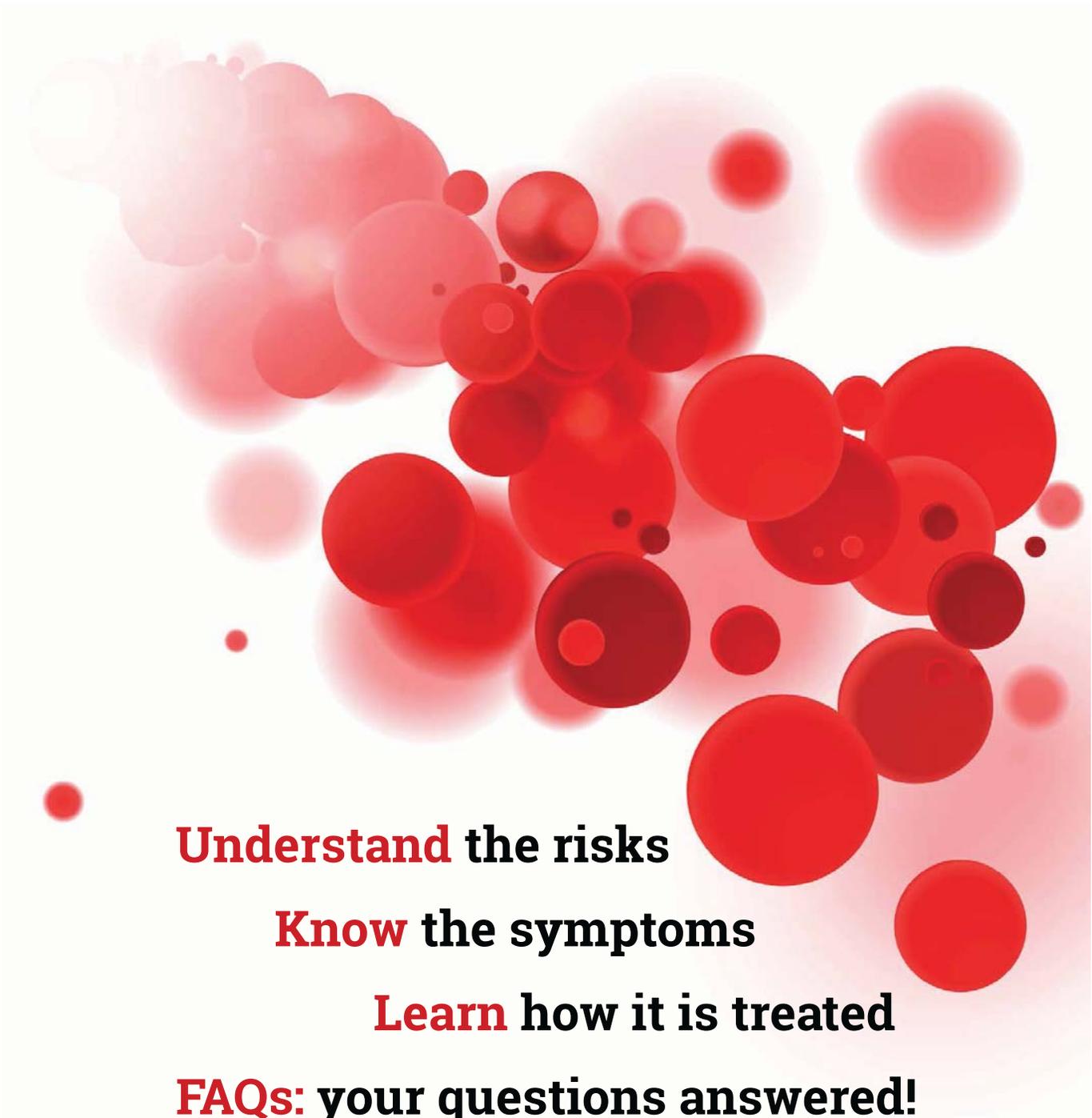


CANCER-ASSOCIATED THROMBOSIS

**What Every Patient With
Cancer Needs to Know**



Understand the risks

Know the symptoms

Learn how it is treated

FAQs: your questions answered!

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Medical personnel should take into account the individual patient's condition and consult officially approved monographs before making the diagnosis, beginning treatment, or following any procedures based on suggestions made in this document.

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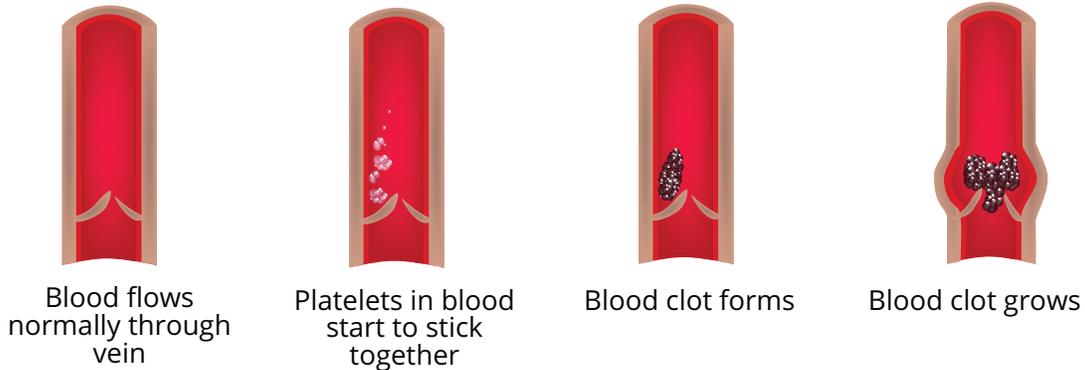
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What is a **blood clot**?

A blood clot is a gel-like clump of blood that forms in a vein. Normally, a blood clot is one of your body's responses to an injury. The technical name for a blood clot is "thrombosis." When a blood clot occurs in the context of cancer, it is called cancer-associated thrombosis (also known as CAT).

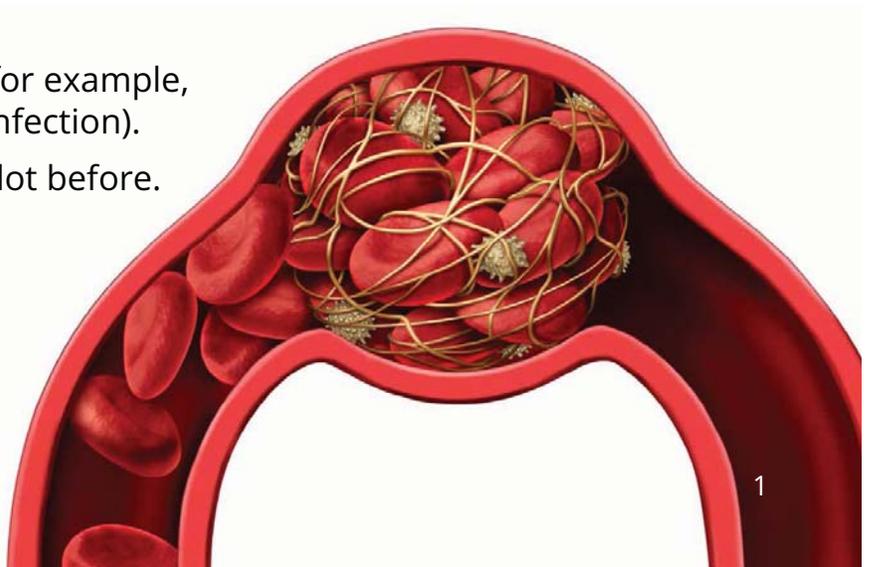


What are the **risk factors** for **cancer-associated thrombosis**?

Blood clots are a common problem for people who have cancer: about 1 in 200 cancer patients will develop cancer-associated thrombosis.

All people who are living with cancer are at risk for getting a blood clot. The risk is greatest within the first three months after the cancer is diagnosed. However, the risk can vary among patients and depends on many factors. For example, the risk is higher if:

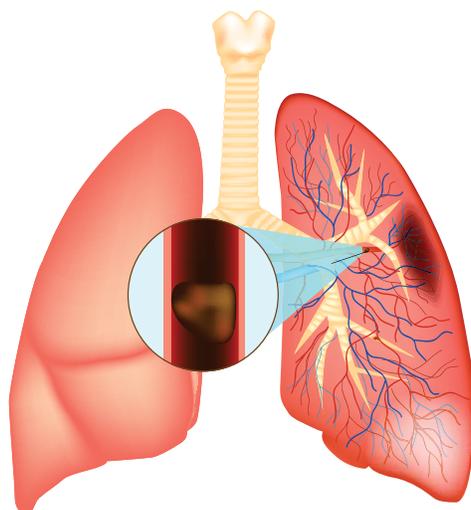
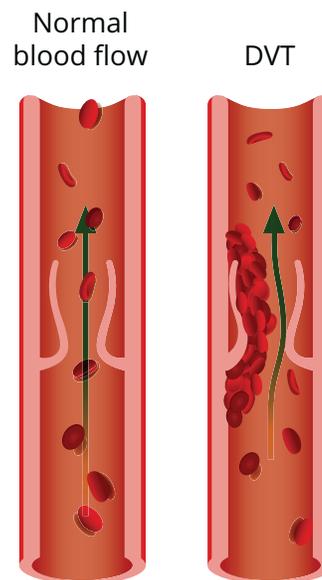
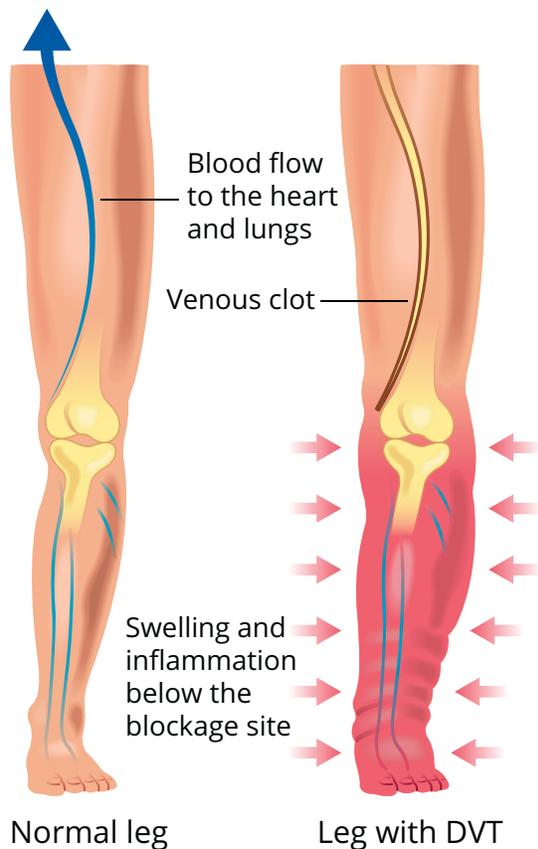
- You have certain types of cancers, such as lung, kidney, ovarian, brain or blood cancer (for example, leukemia or lymphoma).
- The cancer is growing or has spread to multiple areas in the body.
- You are being treated with chemotherapy for your cancer.
- Your treatment is delivered via a central venous catheter.
- You have surgery.
- You have an infection (for example, a lung or urinary tract infection).
- You have had a blood clot before.



Where does cancer-associated thrombosis occur in the body?

Blood clots in people with cancer can form in different locations in the body:

- Blood clots commonly develop in the deep veins of the legs. This is called **deep vein thrombosis** (or **DVT** for short).
- Blood clots sometimes develop in the arms, especially if a catheter is in place for giving chemotherapy or taking blood. This is called upper extremity DVT. It is not as common as DVT in the legs.



- Blood clots can also develop in the blood vessels in the lungs, or a DVT can travel from the legs to the lungs. When a clot is in the lungs, it is called **pulmonary embolism** (or **PE** for short).

What are the **signs and symptoms** of **cancer-associated thrombosis**?

It is important for people living with cancer to know the signs and symptoms of cancer-associated thrombosis because they might not be obvious. You might think the symptoms are related to the cancer itself or to your cancer treatment.

If not managed quickly, cancer-associated thrombosis can cause serious complications. It may also cause a lengthy delay in your cancer treatment, or your treatment may be stopped. If left untreated, cancer-associated thrombosis may cause death.

Symptoms of **DVT** include:

- Swelling or a sense of heaviness in the leg or arm
- Pain, tenderness or cramping in the calf
- Redness or brownness around the area where the clot forms
- A feeling of warmth in the leg or arm

Symptoms of **PE** include:

- Shortness of breath
- Pain in the chest when breathing
- Feeling faint, light-headed or dizzy
- Coughing up blood

An easy way to remember the most common symptoms of a blood clot is to think about the acronym "**CLOTS**":

- **C**hest Pain
- **L**ight-headedness
- **O**ut of Breath
- Leg **T**enderness
- Leg **S**welling

IF YOU HAVE ANY SIGNS OF BLOOD CLOTS...



GO SEE A DOCTOR RIGHT AWAY!

If you experience any of these symptoms, contact your healthcare team or go to a hospital emergency room right away. These conditions must be diagnosed and treated immediately.

Can the risk of cancer-associated thrombosis be reduced?

There are a few steps you can take to reduce your risk of blood clots. These include:



1. DRINKING PLENTY OF FLUIDS.

Dehydration (a harmful reduction in the amount of water in the body) is one of the main causes of DVT, as it can cause your blood to thicken and clot. Aim to drink 235 mL (8 ounces) of water every two hours during the day. Water is important for a number of reasons, including helping nutrients circulate and move throughout the body.



2. STAYING ACTIVE.

Whenever you are not sleeping, avoid sitting or lying down for long periods of time. It may be difficult to stay active while you are ill with cancer, but try to take frequent breaks to walk and move around, even if it's just a few laps around the kitchen.



3. QUITTING SMOKING.

Smoking can cause damage to your blood vessels. If you smoke, try to quit. Your healthcare team can help you find a quitting program that is right for you.

What are the **treatments** for cancer-associated thrombosis?

There are several types of medications available to treat cancer-associated thrombosis. They are known as “anticoagulants” or blood thinners. (“Anti” means against and “coagulant” refers to blood clotting.) An anticoagulant helps stop clots from forming in the blood, and stops existing clots from getting any bigger and travelling elsewhere in the body.

Your healthcare team will help you decide which anticoagulant medication is best for you. Some factors that might affect which medication you take include the type of cancer you have, your risk of bleeding, and other drugs you are taking. Medications that relieve pain (such as Aspirin[®], ibuprofen or acetaminophen), and some antibiotic and anti-fungal drugs should not be taken by people who are on anticoagulant medications.

In Canada, there are three types of anticoagulant medications used to treat cancer-associated thrombosis:

LOW-MOLECULAR-WEIGHT HEPARIN is an anticoagulant that is injected under the skin. There are four heparin medications available in Canada: dalteparin (Fragmin[®]), enoxaparin (Lovenox[®]), nadroparin (Fraxiparine[®]) and tinzaparin (Innohep[®]). They are injected either once or twice daily; the dose is based on your body weight and how well your kidneys are working. Your healthcare team will teach you how to inject the medicine properly and safely, so that you can do it at home. It might sound scary, but it is actually quite easy to do.



The most common side effects of heparin are pain, redness, bruising, swelling, or a burning feeling where the injection is given. These side effects can usually be prevented or lessened by rotating the injection site between different places on your abdomen and thighs.

WARFARIN is an anticoagulant that is available as a pill that you swallow. The brand name of warfarin is Coumadin®. Warfarin must be carefully dosed: taking too much of the drug may cause you to bleed more, but taking too little may cause another clot to form.

To figure out the dosage of warfarin that you need, your healthcare team will regularly take a small amount of your blood. This blood test helps to find out how fast your blood clots, and is referred to as an INR (this means International Normalized Ratio). INR tests are very important because they help your healthcare team decide what dosage of warfarin is right for you.

Your warfarin dose may change from time to time, depending on your INR. Warfarin is easily affected by other medications and what you eat. Close monitoring of your INR helps to make sure you are getting the right dose of warfarin.

DIRECT ORAL ANTICOAGULANTS are tablets that are taken by mouth either once or twice a day (you might hear your healthcare team refer to them as “DOACs”). They do not require regular blood test monitoring and are easier to manage than warfarin. There are four direct oral anticoagulants available in Canada: edoxaban (Lixiana®), rivaroxaban (Xarelto®), apixaban (Eliquis®) and dabigatran (Pradaxa®). These medications work more quickly than other anticoagulant medications: within a few hours after the first dose, a direct oral anticoagulant thins the blood and gives full blood clot protection.

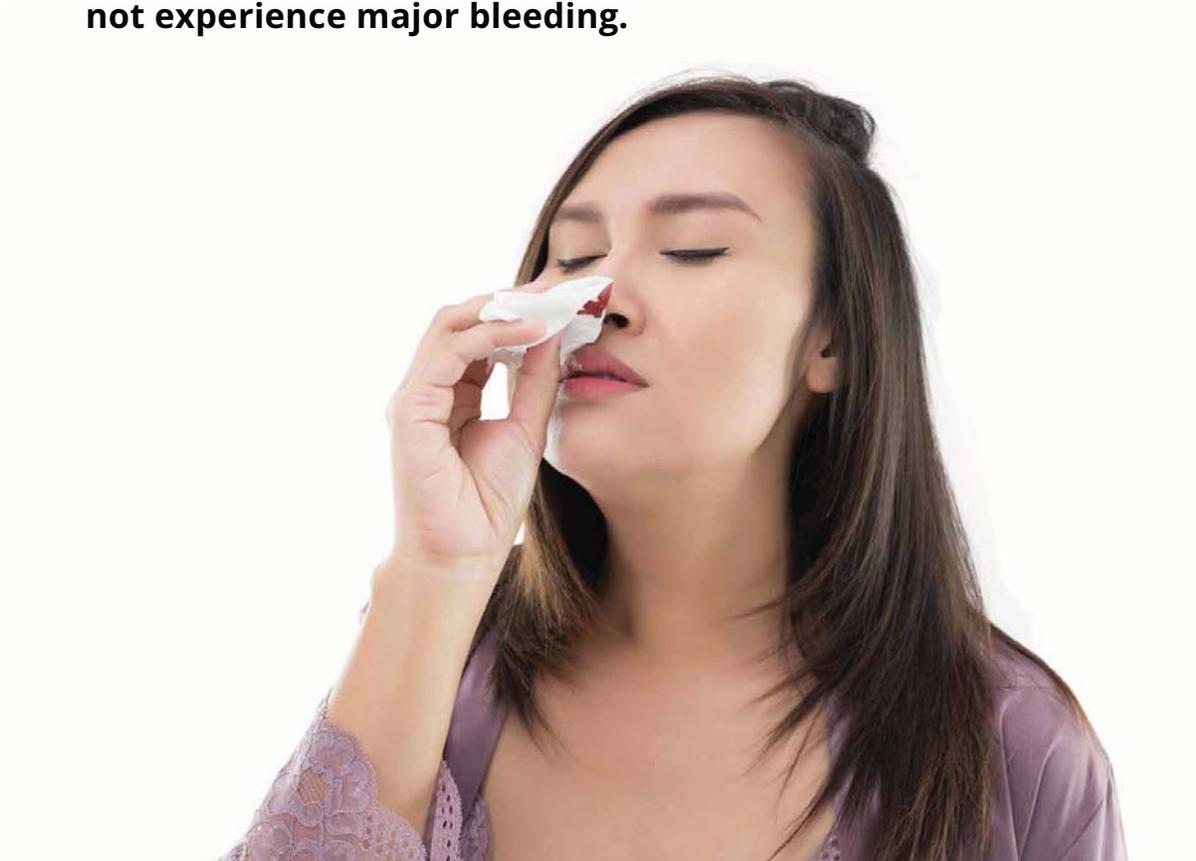


All anticoagulant medications work by quickly stopping blood from clotting. You should expect to take anticoagulants for at least three to six months, but the treatment time will vary depending on your individual situation.

What are the **side effects of medications** used to treat **cancer-associated thrombosis**?

The most important side effect of anticoagulant medications you should know about is bleeding. All anticoagulant drugs increase the risk of bleeding, which can be minor or major:

- **Minor bleeding** does not last long, and stops on its own. Examples of minor bleeding include a nose bleed or bleeding from the gums.
- **Major bleeding** is more serious. Examples of major bleeding include red or black bowel movements (blood loss from your gastrointestinal tract), bright red blood in your urine, significant menstrual bleeding, coughing or vomiting bright red blood, or bleeding in the brain (as a result of a serious fall or hit on the head). **It's important to know, though, that most people taking anticoagulant medications do not experience major bleeding.**



It is important to recognize the symptoms of a clot, as it can happen at any time. If you think you have symptoms of a blood clot in your arms or legs (DVT) or in your lungs (PE), seek medical attention immediately: call your healthcare team or go to the emergency room. Even though having cancer may increase your risk of developing a blood clot, it can be treated effectively if it is caught early.



FREQUENTLY ASKED QUESTIONS

1 HOW LONG DO I NEED TO TAKE ANTICOAGULANT MEDICATION? WILL I HAVE TO TAKE IT FOR THE REST OF MY LIFE?

Your healthcare team will determine how long you need to take anticoagulant medication. Usually, people with cancer-associated thrombosis will need to take the medication for at least three to six months. If you aren't likely to have another blood clot, you may be able to stop taking anticoagulant medication after that time. However, people with a higher risk may need to stay on this medication longer. Your healthcare team will monitor your situation, and determine how long you should continue to take anticoagulant medication

2 HOW LONG DOES IT TAKE FOR THE BLOOD CLOT TO GO AWAY?

Once you start taking anticoagulant medication, it can take weeks or even months for your body to break down or dissolve a DVT or PE. Your medication doesn't actually dissolve the clot. It stops it from getting any bigger, and also stops new clots from forming. If you have a DVT or a PE, you'll start to feel relief as the clot gets smaller. The pain and swelling from a DVT usually starts to get better within days of treatment; with a PE, you'll start feeling better within a few weeks.

3 SHOULD I STOP TAKING BLOOD THINNERS FOR MEDICAL PROCEDURES?

Anticoagulant medications may not need to be stopped for minor procedures or surgeries. However, if you are having a major procedure or surgery, your medication may need to be stopped, either a few hours or a few days beforehand, depending on the type of drug you are taking. Your healthcare team will determine whether and when you should stop taking anticoagulant medication before a procedure or surgery. Always inform your healthcare team that you are on an anticoagulant when you book a procedure or surgery.

4 WHY DIDN'T I EXPERIENCE ANY SYMPTOMS OF DVT OR PE?

The symptoms of DVT and PE often depend on the size of the blood clot. If you have a smaller clot, you might not have any symptoms at first. With a DVT, you might have only minor calf swelling without feeling any pain. With a PE, you might have shortness of breath. You may think these symptoms are happening because you're feeling tired, or because of your cancer treatment.

Unfortunately, many people with DVT or PE have no symptoms at all. In fact, the Centers for Disease Control in the United States estimates that about 50 percent of people who were diagnosed with DVT had no symptoms before they were diagnosed.

5 I CAN'T AFFORD THIS MEDICATION. IS THERE ANY HELP TO PAY WITH DRUG COSTS?

Some anticoagulant medications are covered by provincial healthcare plans. If you don't have a private insurance plan, or if your plan doesn't cover the anticoagulant medication that you have been prescribed, help may be available. Many drug companies have patient assistance programs to help with drug costs. Your healthcare team can put you in touch with program administrators to apply for payment assistance.



Visit www.thrombosiscanada.ca for more patient and family educational resources.



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