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Blood Clots

About 1 in 10 people with cancer will develop a blood clot at some point. Blood clots are also the second leading cause of death in people with cancer. It's important to understand what increases your risk for blood clots, what the signs and symptoms are, and ways to prevent them.

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What are blood clots?

Blood clots are gel-like masses that form when blood clumps together. When we are hurt or bleeding, coagulation triggers blood cells called platelets and other substances to the area to form a blood clot. This helps stop bleeding. Normally, your body will dissolve the blood clot.

Some blood clots form even when you aren't injured.

- A blood clot that stays in the part of the body where it forms is called a **thrombus**

(thrombi for more than one)

- A blood clot that has broken loose and stuck in another blood vessel somewhere in the body is called an **embolus** (emboli for more than one)

Both thrombi and emboli can block blood flow, causing a **thrombosis** or **embolism**. The problems caused depend on where the clot is.

Types of blood clots

Blood clots can be described by which blood vessel they're in (vein or artery) and how deep in the body they are.

Venous (vein) blood clots include:

- Superficial venous thrombosis (SVT)
- Deep vein thrombosis (DVT)
- Pulmonary embolus (PE)

An arterial thrombosis is a blood clot that happens in an artery instead of a vein. These are less common but also very serious.

Blood clots are often called different names depending on which organ they affect:

- **Brain:** Ischemic stroke or transient ischemic attack (TIA)
- **Heart:** Myocardial infarction (MI) or heart attack
- **Lung:** Pulmonary embolism
- **Bowel:** Intestinal ischemia
- **Liver:** Portal or hepatic vein thrombosis
- **Spleen:** Splenic infarction

Blood clots in people with cancer

People with cancer have a higher risk of developing blood clots. But certain cancers (pancreas, stomach, lung, colon or rectum, kidney, or multiple myeloma) are more likely to cause blood clots than others.

The stage¹ and grade² of cancer also affects the risk of blood clots. People with metastatic cancer³ (stage 3 or 4) and high-grade cancers have a higher risk for blood

clots.

Blood clots from cancer treatments and medicines

Cancer treatments and medicines that can increase your risk for blood clots:

- [Surgery⁴](#) (especially large or long surgeries)
- [Chemotherapy⁵](#) (especially cisplatin and asparaginase)
- [Hormone therapy⁶](#) (especially tamoxifen)
- [Targeted drug therapy⁷](#)
- [Immunomodulatory drugs⁸](#) (especially thalidomide and lenalidomide)
- Immunotherapy (especially [checkpoint inhibitors⁹](#) and [CAR T-cell therapy¹⁰](#))
- Treatments that help the body make more red blood cells (such as epoetin)

Health conditions that can increase your risk for blood clots

Certain non-cancer health conditions can increase a person's risk of developing a blood clot. Some of the most common ones are:

- Heart problems such as vasculitis, heart failure, or atrial fibrillation
- Diabetes
- Excess body fat (especially around the belly)
- Factor V Leiden
- Coronavirus infection (COVID-19)

Other risk factors for blood clots

The more risk factors you have, the higher the chance of developing a blood clot. Your risk goes up even more after age 65.

- Having a personal or family history of blood clots
- Being in the hospital for a long time
- Not getting up and moving around or walking for a long time
- Using tobacco
- Having a [central line¹¹](#)
- Being pregnant

- Birth control pills and hormone replacement therapy (HRT)

Preventing blood clots

If you have a higher risk of having a blood clot and are starting cancer treatment, your doctor might talk to you about taking medicine to prevent them.

The types of medicines most often used to prevent blood clots are **anticoagulants** and **antiplatelets**. Some common ones are aspirin, warfarin, and heparin. Your doctor also might suggest medicine to prevent blood clots during certain times when your risk is higher such as when traveling, after surgery, or during a hospital stay.

Devices to prevent blood clots

IVC filter. An IVC filter is a special medical device placed into the inferior vena cava (IVC), a large vein below the heart. IVC filters stop blood clots from traveling to the lungs and causing a pulmonary embolism (PE).

Compression devices. If you're in the hospital, you might be asked to wear compression devices on your lower legs or feet to prevent blood clots. These inflate and deflate with air to improve blood flow. Compression stockings might also be used.

What are the symptoms of a blood clot?

Blood clots don't always cause symptoms. If you are at risk for a blood clot, you should know the most common signs and symptoms. The signs and symptoms of a blood clot depend on where it is in the body.

- **Brain:** Headache, dizziness, blurred vision, face drooping, arm or leg weakness, and difficulty speaking or slurring words
- **Heart:** Chest pain or discomfort, fast or irregular heartbeat, trouble breathing, heartburn or indigestion, sweating, nausea, extreme tiredness, dizziness, pain in the jaw, shoulder, arm, abdomen, or back, anxiety
- **Lung:** Chest pain or discomfort, trouble breathing, fast or irregular heartbeat, sweating, fever, coughing up blood, feeling of panic
- **Arm or leg:** Pain, redness, swelling, warmth (especially if it is in only one arm or leg)
- **Abdomen, liver, or spleen:** Belly pain, bloating, fever, nausea, vomiting, or

diarrhea

Some blood clots can be life-threatening. Get medical help immediately if you think you might have a blood clot.

Testing for blood clots

If your doctor thinks you have a blood clot, they will order certain tests that can help confirm it:

- A [CT scan¹²](#) or other [imaging \(x-ray\) test¹³](#)
- A [ultrasound scan¹⁴](#) (called a Doppler)
- [Lab tests¹⁵](#) such as a D-dimer, platelet count, or other lab tests that show how your blood clots
- A lung ventilation/perfusion (VQ) test checks airflow and blood flow to the lungs

Treatment for blood clots

Some blood clots are treated with the same medicines used to prevent them. These medicines don't get rid of a clot that's already there. But they prevent clots from growing and new ones from forming. The body naturally breaks down blood clots over time.

Medicines used to break down a clot are called thrombolytics or fibrinolytics. These medicines are usually only used for large, life-threatening blood clots such as strokes, heart attacks, and some pulmonary emboli. These medicines can have severe side effects, like heavy bleeding that won't stop, so are only used in certain situations.

Any medicine that affects the blood has risks. Talk to your doctor about what the possible risks and benefits are for you. You might have to decide if the risk of having a blood clot is higher than the risk of bleeding from medicines that prevent blood clots. You and your doctor should make this decision together after you've talked about all the risks and benefits.

Procedures to treat blood clots

Some people might need to have a blood clot removed if they can't take blood thinners. A thrombectomy or embolectomy is a procedure that removes a blood clot that is causing major problems.

Tips for preventing and managing blood clots

There are some things you can do on your own to help lower your risk of developing a blood clot:

- If you spend a lot of time sitting, get up and stretch every 1 to 2 hours
- If you can't get out of bed, stretch and bend your legs, knees, and ankles every 1 to 2 hours
- Try to avoid crossing your legs (it can block blood flow and damage veins over time)
- Wearing compression stockings can help improve blood flow in your legs
- Don't smoke or use tobacco

Ask your cancer care team:

- What is my risk for getting a blood clot?
- Does my type of cancer or cancer treatment increase my risk?
- What can I do to lower my risk of developing a blood clot?
- Will I need to take medicine to prevent blood clots?

If you are being treated for a blood clot, you might want to ask:

- Is this a life-threatening blood clot?
- What should I not do while I am taking this medicine?
- Should I avoid any medicines, supplements, or foods while taking this medicine?
- How long do I have to be on this medicine?
- What side effects can I expect from this medicine?
- Does my insurance cover this medicine? If not, are there any less expensive options?

Talk to your cancer care team **if you take medicines or supplements that can affect how your blood clots.** They might suggest you avoid them while you're being treated for a blood clot. Some common ones are:

- Over-the counter nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and naproxen
- Aspirin
- Certain medicines used to treat infections

- Supplements such as vitamin K, garlic, ginkgo biloba, and St. John's Wort

If you are taking medicine to prevent or to treat a blood clot, take care to not injure yourself. Even minor injuries can make you bleed more than you usually would. Learn more about [how to protect yourself if you are at risk for bleeding.](#)¹⁶

Talk to your doctor or cancer care team if you

- Have unusual bleeding or bleeding that won't stop
- Cough up blood
- Vomit (throw up) something that looks like coffee grounds or has blood in it
- Have severe headaches that don't go away
- Have red or black stools
- Have dark or bright red urine

Hyperlinks

1. www.cancer.org/cancer/diagnosis-staging/staging.html
2. www.cancer.org/cancer/diagnosis-staging/tests/biopsy-and-cytology-tests.html
3. www.cancer.org/cancer/managing-cancer/advanced-cancer.html
4. www.cancer.org/cancer/managing-cancer/treatment-types/surgery/risks-of-cancer-surgery.html
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