# Blood Clots, Cancer, and Chemotherapy



### What is a blood clot?

A blood clot, also known as a deep vein thrombosis (DVT) or thrombus, is a jelly-like collection of specific blood cells called platelets and other substances in the blood circulation called coagulation factors that block blood flow in veins. Under normal conditions, blood clots in response to damage to a vessel to prevent significant blood loss, but regulatory systems in the body prevent the clot from blocking blood flow through the damaged area.

## Why should I be aware of blood clots?

In cancer and other medical conditions, blood can be more prone to clotting inappropriately, causing blood flow to be impaired and potentially resulting in damage to veins and the surrounding body parts. Cancer cells can produce chemicals that make the blood more able to clot. Starting chemotherapy increases the risk of the blood clotting either due to the medication itself or the effect of chemotherapy on the cancer cells. Being immobilized due to surgery or infection can also increase blood clotting risk because moving the muscles in your legs and arms helps push the blood from the veins back toward the heart, preventing the blood from pooling in areas that can increase its tendency to form clots.

#### What are the risk factors for blood clots?

- Cancer, especially in the brain, digestive system, lung, kidney, female reproductive system (uterine, ovarian, cervical), and blood (leukemia, lymphoma, myeloma)
- Metastatic cancer, which is cancer that spread from the original tumor site to other parts of the body
- Cancer treatment, including surgery lasting longer than one hour, chemotherapy, radiation therapy, and hormone therapy
- Treatment with erythropoiesis stimulating agents that help the body make more red blood cells, including epoetin (Epogen, Eprex, Procrit) and darbepoetin (Aranesp)
- Immobilization due to hospitalization, surgery, and/or pain
- A history of blood clots
- Having other diseases or conditions such as obesity, infection, kidney disease, lung disease, or coronary or peripheral artery disease in addition to cancer
- Age greater than 40
- A condition that is genetic or inherited (passed down in a family), such as sickle cell disease, or a blood clotting disorder such as factor V Leiden mutation that makes blood more prone to clotting

## What are the signs and symptoms of a blood clot?

Blood clots generally cause swelling, pain, warmth, and/or redness in the arms or legs. They usually only form on one side of the body. They can also break off from the original vein where they formed and travel to the lungs, called a pulmonary embolism, that results in chest pain, shortness of breath, coughing up blood, and/or passing out.



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## How can I prevent blood clots?

The best way to prevent blood clot is to remain as active as possible. Smoking also increases the risk of clotting, so quitting can help prevent them, as well.

### What should I do if I think I have a clot?

Call the nurse case manager to be seen and evaluated. If the symptoms include chest pain and shortness of breath, seek emergency assistance immediately.

## References

- 1. Blood Clots and Chemotherapy. In: Chemocare. Cleveland, Ohio: Cleveland Clinic Health System.
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