



Side-Effect Management: Managing Blood Clots and Deep Vein Thrombosis (DVT)

Normal blood clotting (coagulation) controls bleeding and helps injuries heal. When you get a cut, blood cells called platelets, along with proteins in the blood called clotting factors, work together to form a clot. Typically, blood clots stay in place and then fall off or dissolve after the injury heals. But sometimes clots form in places they should not and do not dissolve. These clots can block blood flow, and if untreated, a clot can break away and travel through the bloodstream to the heart, lungs or brain, causing severe damage and possibly death. Cancers and cancer treatments can increase the risk of developing life-threatening blood clots.

DEEP VEIN THROMBOSIS (DVT)

A blood clot that forms in a vein or an artery is called a “thrombus.” When a blood clot forms in a vein deep inside the body, it is called “deep vein thrombosis (DVT).” Deep vein thrombosis usually occurs in a vein in the leg, but it can also develop in the vein of an arm. Symptoms of DVT include:

- Swelling in one leg or arm
- Pain or tenderness in a leg or arm, not from an injury
- Skin that appears slightly red or blue
- Skin on one leg or arm that is warm to the touch or has prominent veins

Blood clots can be diagnosed using blood and imaging tests, such as ultrasound or computed tomography (CT) scan. Early diagnosis of DVT is important to prevent severe complications.

Talk to your healthcare team about your risk for blood clots, how you can prevent them, and signs and symptoms that require emergency assistance.

BLOOD CLOT COMPLICATIONS

When a blood clot breaks away and travels through the bloodstream, it is called an “embolus.” An embolus can cause life-threatening conditions, depending on where it travels:

- Lungs: An embolus that travels to the lungs can block blood flow to the lungs. This is called a “pulmonary embolism (PE).”
 - o Symptoms: sudden shortness of breath; chest pain, especially when breathing; coughing up blood
- Brain: An embolus that creates a blockage in the brain can cause a stroke.
 - o Symptoms: sudden numbness or weakness of face, arm or leg; general confusion or trouble speaking; trouble seeing; dizziness or loss of balance; severe headache
- Heart: An embolus that travels to the heart can cause a blockage in an artery, leading to a heart attack.

- o Symptoms: chest pain or tightness; feeling weak; pain in the jaw, neck, back or arm; shortness of breath. Females are more likely to have fatigue and nausea and/or vomiting.

Call 911 if you experience the symptoms of a pulmonary embolism, stroke or heart attack—all are life-threatening.

RISK FACTORS

People with cancer or receiving cancer treatment are at increased risk for blood clots. Some cancers, including certain blood cancers, are more likely to cause these clots.

Some drugs used in cancer treatment can increase the risk of blood clots:

- Certain chemotherapy drugs
- Some tyrosine kinase inhibitors (TKIs), such as nilotinib (Tasigna®) and ponatinib (Iclusig®)
- Angiogenesis inhibitors, such as lenalidomide (Revlimid®) and thalidomide (Thalomid®)
- Erythropoietin (EPO) therapy to treat severe anemia

Having surgery, being hospitalized, or having a central venous catheter or peripherally inserted central catheter (PICC) line can also increase the risk of blood clots.

Other factors that increase the risk of blood clots include:

- Age—People 65 and older are higher risk.
- History of deep vein thrombosis
- Inherited conditions
- Coronavirus (COVID-19)
- Obesity
- Inactive lifestyle
- Pregnancy
- Birth control pills or hormone replacement therapy
- Smoking
- Race—Black people are at a higher risk than whites and Asians.

PREVENTION AND TREATMENT

The goal in treating DVT is to prevent the clot from getting larger or breaking loose. Prevention and treatment for DVT can include:

- Anticoagulants (blood thinners): medications that help prevent and reduce clotting
- Thrombolytics (clot busters): emergency medications for stroke, heart attack, and pulmonary embolism
- Catheter-directed thrombolysis: a procedure in which a doctor guides a catheter (a long thin tube) into the blood vessel to the clot to deliver medication to help dissolve it
- Inferior Vena Cava (IVC) filter: inserted into the inferior vena cava (large vein that carries blood from the legs to the heart). The IVC filter catches clot fragments so they cannot travel to the heart or lungs.
- Surgery (thrombectomy) to remove a blood clot: this may be done when a clot becomes life-threatening and does not respond to other treatments.
- Daily aspirin therapy: this may help some blood cancer patients prevent blood clots from forming. Before taking daily aspirin, check with your healthcare team.

Blood cancer and treatment can cause a low number of platelets in the blood (thrombocytopenia), which can cause serious bleeding. Medications such as blood thinners and thrombolytics should be carefully considered and monitored. For tips to reduce risk of injury and bleeding, visit www.LLS.org/booklets to view *Side Effect Management: Managing Low Blood Cell Counts*.

Other ways to help prevent DVT:

- Reach and maintain a healthy weight.
- Stay active.
- Avoid staying still for long, and don't cross your legs.
- Elevate your legs when possible.
- Get up and move every hour when traveling on a plane, train or bus.
- Stop and walk around at least every two hours when driving.
- While sitting, point and flex your toes and make circles with your feet to increase circulation.
- Drink a lot of water to stay hydrated.
- Wear loose-fitting clothing when you travel.
- Wear compression (tight-fitting) stockings to help prevent blood clots. Ask your doctor which style and grade of compression stockings you need.

Questions to Ask Your Healthcare Team

- **Am I at high risk for blood clots?**
- **Are blood clots a possible side effect of my cancer treatment?**
- **What can be done to prevent blood clots?**
- **Are there medications that can help?**
- **What signs or symptoms require a trip to the emergency room?**

GET ONE-ON-ONE SUPPORT

The Leukemia & Lymphoma Society's **Information Specialists**, highly trained oncology social workers and health educators, can provide information and support and connect you to our **Clinical Trial Support Center** and **Registered Dietitians**.

- Call **800.955.4572** Mon.-Fri. 9 a.m. to 9 p.m. (ET)
- Visit www.LLS.org/PatientSupport

Acknowledgement

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