Deep Vein Thrombosis (DVT) & Pulmonary Embolism (PE)

What are blood clots?

When a clot forms in the deep veins of the body, it is called deep vein thrombosis, often referred to as DVT for short. DVT occurs most commonly in the leg; although it can occur anywhere in the body, such as the veins in the arm, abdomen, or around the brain.

Blood clots may form when either the flow of blood in a vein slows, damage to a vein occurs, or the blood is more clotable. Many factors can increase a person’s risk for developing a blood clot in a vein. Common risk factors for developing a blood clot include:

Symptoms of Deep Vein Thrombosis (DVT):
- Pain
- Swelling
- Discoloration (bluish, purplish or reddish skin color)
- Warmth

Symptoms of Pulmonary Embolism (PE):
- Shortness of breath
- Chest pain (which may be worse with deep breath)
- Unexplained cough (may cough up blood)
- Unexplained rapid heart rate

What causes blood clots?

A potentially life-threatening complication of deep vein thrombosis (DVT) is pulmonary embolism, often referred to as PE for short. A PE occurs when a blood clot breaks off, travels through the blood stream and lodges in the lung.

Increased estrogens:
- Birth control pills, patches, rings
- Pregnancy, including up to 6 weeks after giving birth
- Estrogen and progestin hormone therapy

Medical conditions:
- Cancer and chemotherapy
- Heart failure
- Inflammatory disorders (lupus, rheumatoid arthritis, inflammatory bowel disease)
- The kidney disorder called nephrotic syndrome

Other risk factors:
- Previous blood clot
- Family history of clots
- Clotting disorder (inherited or acquired)
- Obesity
- Older age
- Cigarette smoking
- Varicose veins
How are blood clots diagnosed?

DVT is generally diagnosed using:

- Doppler ultrasound (Duplex), a painless and noninvasive test. During a Doppler ultrasound, sound waves are used to generate pictures of the blood vessels.

PE is generally diagnosed using:

- CT scan (Computed tomography), which uses a combination of x-rays taken from many different angles to produce detailed pictures of inside the body.
- V/Q scan (Ventilation/perfusion lung scan) is a nuclear medicine scan that uses a small amount of radioactive material to study the airflow (ventilation) and blood flow (perfusion) in the lungs.

How are blood clots treated?

The primary treatment for blood clots is blood-thinning medication, known as an anticoagulant or ‘blood-thinner’.

- Blood-thinners increase the time it takes for blood to clot. They prevent new clots from forming and existing clots from growing larger.
- Blood-thinners do not dissolve a clot. Over time, the body absorbs a clot.
- Blood-thinners may be given as:
  - an oral pill
  - an injection (shot) into the skin
  - by injection into a vein (IV)

The treatment of DVT and PE is similar. The goals of treatment are:

- To prevent an existing clot from growing in size
- To prevent the formation of new clots
- To prevent a DVT from breaking off, traveling through the blood stream and becoming a PE
- To prevent or minimize long-term complications.

The length of time you will need to take a blood-thinner will depend upon a number of factors such as:

- The location of the clot
- Why the clot formed (what risk factors contributed to your clot)
- How well you have tolerated the blood thinner
- Your risk for bleeding

How can blood clots be prevented?

- Stay active. Immobility increases the risk of developing clots. If you’ve been sitting for a long period of time (such as long-distance travel) stop and take a break to stretch your legs.
- Maintain an ideal body weight.
- Know your risk factors for developing a clot (above) and discuss these with your doctor.
- Know your family medical history. Make sure your doctor knows about any history of blood clots.
- If you are hospitalized or planning for surgery, ask your doctor: ‘What will be done to prevent blood clots?’ You may be given a blood-thinning medication (anticoagulant) or special stockings designed to prevent blood clots. These blood clot prevention measures are called 'DVT prophylaxis'.