

Blood Clots

- Deep Vein Thrombosis (DVT)
- Pulmonary Embolus (PE)
- Superficial Thrombosis



Definitions

Venous thrombosis is a condition in which a blood clot (thrombus) forms in a vein.

This clot limits blood flow through the vein, causing swelling and pain.

Venous thrombosis usually occurs in the "deep veins" of the legs, thighs, or pelvis. This is called a deep vein thrombosis, or DVT.



Pulmonary Embolus



the leg is the
e of venous
can form
enous system.

a clot in the vein
e site where it
it can travel
throughout the venous system.

- If the embolus lodges in the lung, it is called a pulmonary embolus (PE).

Risk Factors for Clot Formation

I. Medical Conditions:

- Pregnancy
- Obesity
- Smoking
- Increased age
- Cancer
- Kidney problems
- Heart conditions (atrial fibrillation, mechanical heart valves)
- Blood disorders such as polycythemia vera
- Medications, especially hormones



Other Risk Factors for Clot Formation



1. Inherited disorders:
 - Deficiencies in blood clotting factors such as protein C and Factor V Leiden.
2. Surgery: especially those involving the hip, pelvis, or knee.
3. Trauma: especially if blood vessels are injured.
4. Inactivity:
 - Prolonged sitting, especially 4 or more hours in a plane or car.
 - Prolonged bed rest.

Symptoms

Swelling:

- When the clot blocks blood flow, it causes the area to swell and ache.

Pain:

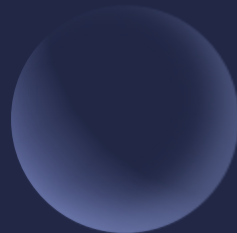
- Pain typically occurs when walking or standing but can happen at other times.
- There may be aches, cramps, or muscle spasms in the affected leg.

Warmth:

- The area may feel warm.

Skin discoloration:

- The skin may appear red or slightly bruised (blue or purple).



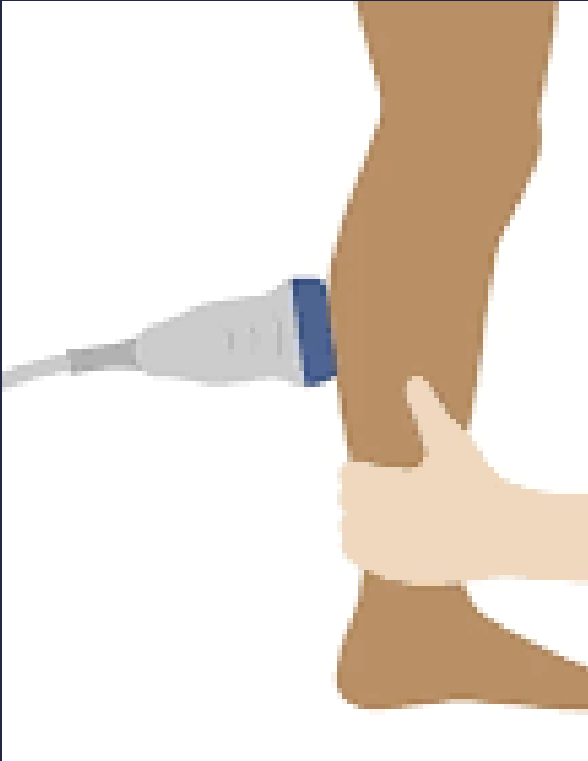
Symptoms of a PE



- Difficulty breathing
- Wheezing
- Coughing up blood
- Fast or irregular heartbeat
- Chest pain that is worse with a deep breath or coughing
- Fainting



Diagnosis of a DVT



If a DVT is suspected, tests are ordered to confirm this.

- A blood test called a D-dimer will often be ordered.
- The other most common test is an ultrasound of the leg or area in question.
- Contrast studies of the veins, CT scans, and MRIs can also be used.

Treatment

The main goal of treatment is to prevent a pulmonary embolus.

- Other goals are to prevent the clot from getting larger or new clots from forming.

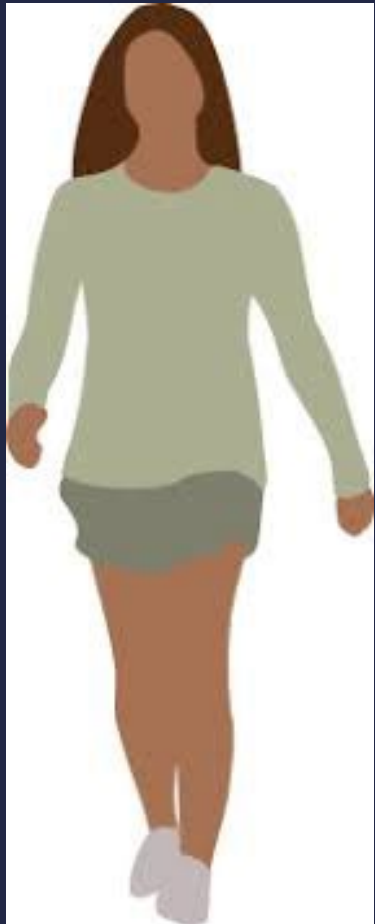
Anticoagulant medications are the main treatment.

- Anticoagulants work to prevent clots from forming.
- These are often called “blood thinners” but they DO NOT thin the blood, they simply reduce clot formation.
- Oral anticoagulants include warfarin, Eliquis, Pradaxa, Savaysa, and Xarelto.
- Injectable anticoagulants are also used at times.

Embolus



Prevention of blood clots



- Get regular exercise - keep muscles strong and blood flowing.
- Maintain a healthy body weight - extra fat around the belly can slow down the flow of the blood through the veins.
- Don't be a couch potato - get up frequently, stretch legs and get blood moving.
- Keep active when pregnant.
- Be sure to keep moving after surgery – wiggle toes, do toe lifts, and take short walks.
- Stop smoking.

Prevention during travel

Take frequent breaks on long road trips – stop every 60-90 minutes to stretch legs or take a short walk to get blood flowing.

Stay hydrated on long flights and exercise legs frequently – walk the aisles, do toe lifts, avoid dehydration.



Superficial vein phlebitis and thrombosis

Superficial veins, as the name implies, are closer to the surface of the skin than the "deep" veins. They are found throughout the body. Problems can include:

- Superficial vein **phlebitis** – This is when the veins get inflamed.
- Superficial vein **thrombosis** – This is when blood clots form in the veins.
- If both problems happen together, it is called **superficial vein thrombophlebitis**.

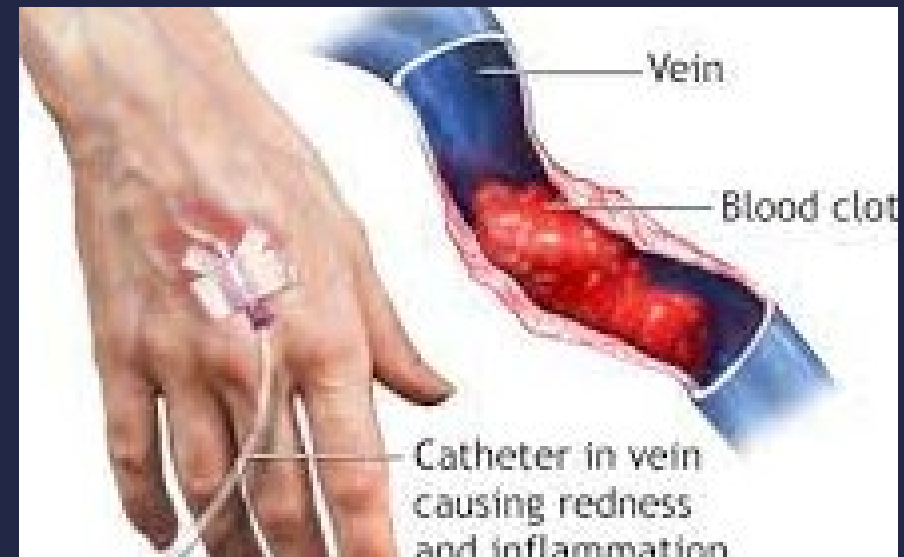
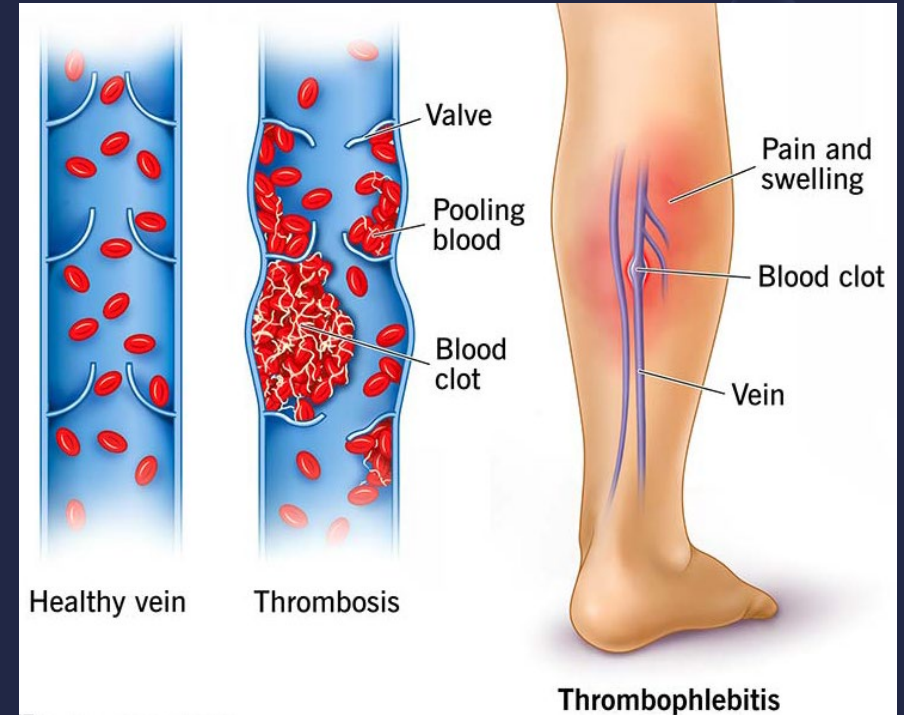


Risk factors

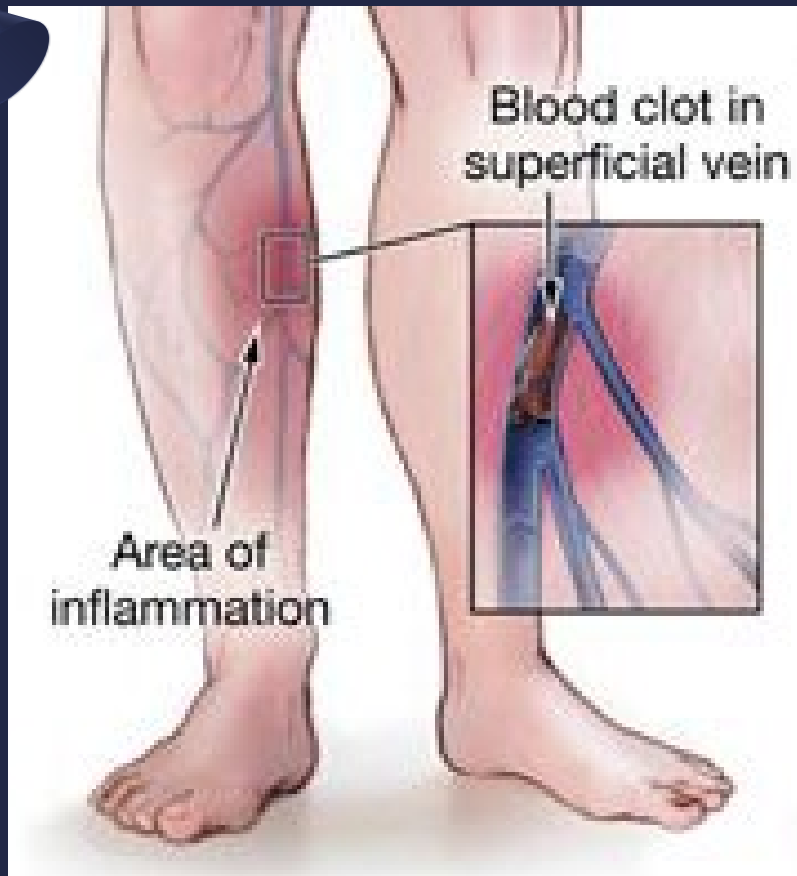
Venous insufficiency, a problem with blood flow, is the main risk factor.

- Normally, veins have valves that open to keep blood flowing toward the heart, and close to keep blood from flowing backward.
- With venous insufficiency, the valves are damaged and do not work well - allowing blood to flow backward and collect in the veins.

Other risk factors include varicose veins, venous catheters, cancer, and blood clotting problems.



Symptoms of superficial thrombophlebitis



- Pain, tenderness, or redness along the length of a vein
- Thickening of the vein
- Fever
- Pus draining from the area where a catheter was put in
- Swelling of the affected arm or leg

Treatment of superficial phlebitis/thrombosis

Use heating or cooling pads on the area.

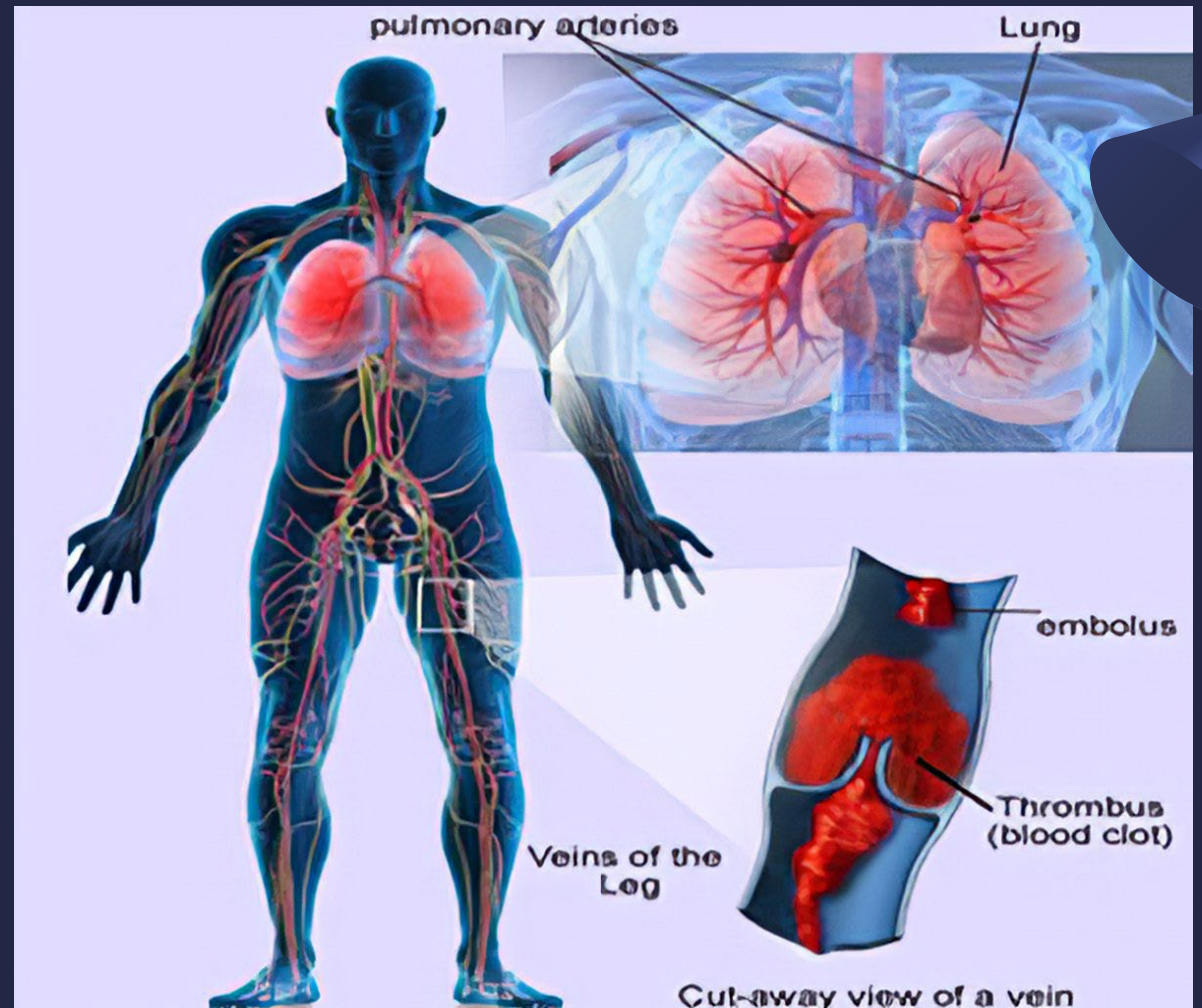
Raise the arm or leg –prop up on pillows or a chair when resting.

Take NSAIDs such as ibuprofen, Naprosyn.

Compression stockings may help.



Thank You



Jean Justad, MD

Medical Director, DDP

2023