

# BLOOD CLOTS AND CHRONIC KIDNEY DISEASE (VTE AND CKD)

## WHAT YOU NEED TO KNOW



### WHAT ARE VTE AND CKD?

- **VTE (Venous ThromboEmbolism)** includes these two diseases that are related but that are not the same:
  - **DVT (Deep Vein Thrombosis)** is a blood clot (thrombosis) in a deep vein, usually in your leg. You can get a DVT when sitting or lying down for a long time, such as during a long plane ride or a hospital stay. When you don't move a lot, the blood flow in your legs slows down. Blood clots can then form where the blood flows slowly.
  - **PE (Pulmonary Embolism)** happens if the blood clot that formed in your leg breaks off and moves through your blood and into your lungs ("pulmonary" refers to the lungs). That blood clot can then block a blood vessel in your lungs. This vessel block (embolism) can hurt your lungs and heart, and can cause death.
- **CKD (Chronic Kidney Disease)** means that your kidneys have not been working at a normal level for at least 3 months. This loss of function usually cannot be reversed. The good news is that there are many things you can do to slow down more loss of your kidney function.

### HOW ARE VTE AND CKD CONNECTED?

- CKD may put you at higher risk for VTE. The reasons for this are not well understood. The connection may depend on what caused your CKD and how much kidney damage you have. No matter the reason, CKD may make it easier for your body to form blood clots. The risk for VTE is seen more often in people with nephrotic syndrome (a kidney problem that causes swelling, usually of the ankles, a high level of protein in the urine, and a low level of a protein called albumin in the blood).

### WHAT ARE SIGNS AND SYMPTOMS OF VTE?

- **DVT:** Only about half of the people with DVT have signs and symptoms. Signs and symptoms usually happen in the leg with DVT. Clots most often happen in one of your legs, but they can also happen in other parts of your body, such as your arm. Here are some common signs and symptoms of DVT:
  - Swelling in the leg
  - Pain or tenderness. If it is in your leg, you may only feel it when walking or standing.
  - Warmth in the part of the leg that has swelling or pain
  - Skin over the area of the clot that is red or with changes in color
- **PE:** Some people don't know they have a DVT until they have these signs and symptoms of PE:
  - Can't catch your breath
  - Pain when breathing
  - Blood comes up when coughing
  - Your heartbeat is rapid
  - Sometimes there are no signs or symptoms

### HOW DOES MY DOCTOR TEST ME FOR VTE?

- Medical history that includes risk factors for DVT and PE
- Physical exam, including blood pressure and checking your heart and lungs
- Tests:
  - Pictures from ultrasounds, CT scans, and MRIs to find blood clots
  - Blood tests
    - D-dimer measures a substance that is released when a blood clot breaks down
    - Tests for inherited diseases that cause increased blood clotting
  - Venography for DVT: an x-ray using dye to show how blood is moving through your veins

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- Lung ventilation/perfusion scan for PE: shows how well air and blood is flowing throughout your lungs
- Pulmonary angiography for PE: x-ray pictures of blood flowing through blood vessels in your lungs
- Echo (echocardiogram) for PE: sound waves make a moving picture of the heart to help find blood clots
- EKG (electrocardiogram) for PE: shows problems in how the heart is beating
- Chest x-ray and chest MRI for PE: shows heart, lungs, and other areas that might have clots

### HOW DOES MY DOCTOR TEST ME FOR CKD?

- CKD is diagnosed by two simple tests: 1) Glomerular filtration rate (GFR) is a blood test that checks how well the kidneys are filtering. 2) Albumin-to-creatinine ratio (ACR) is a urine test that measures the amount of protein (albumin) that is not normally in the urine. If needed, a kidney biopsy can help determine the cause of CKD.

### HOW IS VTE TREATED?

- Anticoagulants, also known as blood thinners, are the most common medicines used to treat VTE (DVT and PE). They stop the clots you already have from getting bigger. They cannot break up clots that have already formed.
- Thrombin inhibitors help stop the blood clotting process.
- Thrombolytics quickly break down large blood clots that cause very bad symptoms. They can cause sudden bleeding, so they are used only when your life is in danger.
- A vena cava filter can be placed inside the vena cava, the largest vein in the body that is deep in the abdomen. The filter catches blood clots before they move to the lungs. This prevents PE. The filter does not stop new clots from forming.
- Compression stockings reduce the leg swelling caused by a blood clot.
- Rarely, your doctor may need to remove the clot with surgery or with a long thin tube placed in your vein.

### HOW CAN I PROTECT MY KIDNEYS AND LOWER MY RISK FOR VTE?

- Eat healthy. Limit portion sizes, but don't skip meals. Be more active. Talk to your healthcare provider about how to safely improve diet and exercise.
- Control high blood pressure and high blood sugar.
- Lose weight if needed. Extra weight can lead to high blood pressure and diabetes, which can hurt the kidneys.
- Avoid non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen, and naproxen, which can harm kidneys.
- Don't take herbal supplements. Many herbal products can harm the kidneys.
- Don't smoke. Smoking increases the chance of heart and lung disease, and stroke.
- If you need a test such as an MRI with contrast dye, make sure your doctor measures your kidney function first.
- Know the risks and benefits of all treatments. Anticoagulants can make it harder for you to form the good clots that help stop bleeding. Your doctor will order the right amount of drug based on how well your kidneys work. If you have less kidney function, the dose may be less. The right type of anticoagulant depends on what other drugs can be used if the anticoagulant makes your blood too thin and puts your life in danger. Certain drugs may require getting your blood tested more often and avoiding great changes in your usual food choices. Talk with your doctor about the treatments that are best for you.
- Know your GFR and ACR.
- **IF YOU HAVE ANY SIGNS OR SYMPTOMS OF DVT OR PE, SEE YOUR HEALTHCARE PROVIDER RIGHT AWAY! IF YOU HAVE TROUBLE BREATHING OR COUGH UP BLOOD AND CAN'T GET TO A DOCTOR OR HOSPITAL AT ONCE, CALL 911!**