Thrombin Time

Does this test have other names?

Thrombin clotting time, TCT, TT

What is this test?

Thrombin time is one of several tests that check if your blood is clotting normally. Blood clotting (coagulation) is needed to help stop bleeding when you have an injury.

Proteins in the blood called clotting factors help specific blood cells stop bleeding. Thrombin is an enzyme in the liquid part of blood (plasma). It helps a clotting factor called fibrinogen turn into fibrin to create clots. Thrombin time is a measure of how long the blood's plasma takes to form a clot. This test shows how long it takes fibrinogen to turn into fibrin. Problems with fibrinogen turning into fibrin can keep blood from clotting normally and cause too much bleeding. The test may be used to help diagnose problems such as:

- Inherited conditions that lead to low fibrinogen or fibrinogen disorders
- Liver diseases such as cirrhosis, hepatitis, and liver cancer
- Cancers such as kidney cancer (renal carcinoma) and multiple myeloma
- Certain other health conditions, including lupus and ulcerative colitis
- Antibodies against fibrinogen your body may be making, if you had surgery that uses fibrin glue from cow sources
- Disseminated intravascular coagulation, a condition in which your body uses more fibrinogen

Some medicines can also lead to a longer thrombin time. They include these blood-thinning medicines:

- Heparin
- Warfarin
- Bivalirudin
- Argatroban

Why do I need this test?

You may need this test if your blood does not seem to be clotting normally.

Symptoms can include:

- Excessive bleeding or bruising
- Pregnancy problems, such as repeated miscarriages early in pregnancy, and abnormal bleeding after delivery

What other tests might I have along with this test?

You may need other tests to measure your blood's clotting ability, including:

- **Reptilase time.** Like thrombin time, this test measures how long it takes for fibrinogen to turn into fibrin. It shows if a long thrombin time is because of heparin.
- **Prothrombin time.** This test gives information about fibrinogen and other blood parts that help form clots. It's also used to measure the effects of warfarin.
- **Activated partial thromboplastin time.** This test also gives information about factors in blood clotting. And it's used to measure the effects of heparin.

What do my test results mean?

Test results may vary depending on your age, gender, health history, and other things. Your test results may be different depending on the lab used. They may not mean you have a problem. Ask your healthcare provider what your test results mean for you.

A normal thrombin time is about 12 to 19 seconds.

A longer thrombin time can mean low fibrinogen, high fibrinogen, or fibrinogen that's not working normally. It can also be because of medicines that affect blood clotting, such as heparin or argatroban.

A longer thrombin time can be caused by proteins in the blood from multiple myeloma or amyloidosis. Or it could be caused by antibodies to cow thrombin, which is used as part of the testing.

How is this test done?

The test is done with a blood sample. A needle is used to draw blood from a vein in your arm or hand. The sample is placed in a tube containing a chemical that keeps it from clotting.

Does this test pose any risks?

Having a blood test with a needle carries some risks. These include bleeding, infection, bruising, and feeling lightheaded. When the needle pricks your arm or hand, you may feel a slight sting or pain. Afterward, the site may be sore.

What might affect my test results?

Some medicines that alter blood clotting will affect your test results, such as heparin and warfarin.

How do I get ready for this test?

Tell your healthcare provider if you're taking any medicines, especially those that affect your blood's ability to clot. Be sure your healthcare provider knows about all medicines, herbs, vitamins, and supplements you are taking. This includes medicines that don’t need a prescription and any illegal drugs you may use.