

# Prothrombin Time



## Does this test have other names?

Prothrombin time/PT, Pro time, Prothrombin time/International normalized ratio, PT/INR

## What is this test?

The prothrombin time is 1 of several tests that check if your blood is clotting normally. Blood clotting (coagulation) is needed to help stop bleeding. Proteins in the blood called clotting factors (coagulants) help blood become sticky and clot. They change it from a liquid to a solid.

As soon as you start to bleed somewhere in or on your body, platelet cells in the blood collect around the bleeding area. The platelet cells and clotting factors then react to thicken the blood and stop the bleeding. Problems in the blood, such as low levels of clotting factors or platelets, can keep blood from clotting normally and cause too much bleeding.

Clotting factors are usually made by the liver. Prothrombin is one type of clotting factor. When bleeding occurs in the body, prothrombin quickly changes to thrombin. The prothrombin time test measures how quickly prothrombin changes to thrombin to stop the bleeding. If the prothrombin doesn't change as quickly as normal, you may have a blood clotting disorder.

The test may be used to help diagnose inherited disorders and other conditions that may affect blood clotting. These include:

- Vitamin K deficiency
- Deficiency in clotting factor I, II, V, VII, or X
- Diseases of the liver
- Hemophilia
- Problems with the bone marrow
- Von Willebrand disease
- Problems with the immune system
- Some types of cancer, including leukemia

## Why do I need this test?

You may need this test if you have symptoms of a bleeding disorder. These can include:

- Abnormal menstrual periods in women
- Frequent nosebleeds
- Bleeding more easily
- Bruising more easily
- A lot of bleeding
- Blood in the stool

You may need this test regularly if you are taking a blood thinner, such as warfarin. This is to help make sure you are taking the right dose.

You may also need this test before you have surgery or a procedure. This is to help make sure your blood is clotting normally so you don't have problems with bleeding after the surgery or procedure.

## What other tests might I have along with this test?

You may need other tests that measure the ability of your blood to clot normally. These may include:

- Thrombin time test
- Activated partial thromboplastin time
- Other tests that measure aspects of blood clotting, such as platelet function

## 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.

This test result is often reported in seconds. The normal clotting time is typically between 11 and 13 seconds. If your blood does not clot within that normal range, you may have a clotting or bleeding disorder.

If you have this test because you are taking an anticoagulant, such as warfarin, the result is often reported as a number that compares your result with that of a standard value. This is called the International Normalized Ratio (INR). Healthcare providers usually want the INR to be between 2.0 and 3.0 for people on a blood thinner, such as warfarin.

## 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.

## 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?

A number of medicines can affect the test results. These include medicines that are used to help prevent blood clots, such as:

- Warfarin
- Aspirin
- Other blood thinners, such as direct thrombin inhibitors and factor Xa inhibitors
- Heparin

Other medicines that may affect the results include:

- Some steroids
- Antibiotics
- Estrogen medicines

- Antacids

If your blood sample is not collected correctly, your test results may also be affected.

## How do I get ready for this test?

You don't usually need to prepare for this test. Your healthcare provider will tell you if you need to not eat or drink in the hours before the test. Your provider may ask you to stop taking any medicines that may affect your test results, especially those that prevent blood clotting. Be sure your 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.

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