

C-reactive Protein

Definition

C-reactive protein is produced by the liver. The level of CRP rises when there is inflammation throughout the body.

This article discusses the blood test done to measure the amount of CRP in your blood.

Alternative Names

CRP; High-sensitivity C-reactive protein; hs-CRP

Why the Test is Performed

The CRP test is a general test to check for inflammation in the body. It is not a specific test. That means, it can reveal that you have inflammation somewhere in your body, but it cannot pinpoint the exact location.

Your doctor may order this test to:

- Check for flare-ups of inflammatory diseases such as rheumatoid arthritis, lupus, or vasculitis
- Determine if anti-inflammatory medicine is working to treat a disease or condition

However, a low CRP level does not always mean that there is no inflammation present. Levels of CRP may not be increased in people with rheumatoid arthritis and lupus. The reason for this is unknown.

A more sensitive CRP test, called a high-sensitivity C-reactive protein (hs-CRP) assay, is available to determine a person's risk for heart disease. Many consider a high CRP level to be a risk factor for heart disease. However, it is not known whether CRP is merely a sign of cardiovascular disease or if it actually plays a role in causing heart problems.

How the Test is Performed

Blood is typically drawn from a vein, usually from the inside of the elbow or the back of the hand. The site is cleaned with germ-killing medicine (antiseptic). The health care provider wraps an elastic band around the upper arm to apply pressure to the area and make the vein swell with blood.

Next, the health care provider gently inserts a needle into the vein. The blood collects into an airtight vial or tube attached to the needle. The elastic band is removed from your arm.

Once the blood has been collected, the needle is removed, and the puncture site is covered to stop any bleeding.

In infants or young children, a sharp tool called a lancet may be used to puncture the skin and make it bleed. The blood collects into a small glass tube called a pipette, or onto a slide or test strip. A bandage may be placed over the area if there is any bleeding.

At the laboratory, your blood sample is mixed with a liquid called an antiserum, which contains substances that look for the specific protein.

How to Prepare for the Test

No preparation is necessary for this test.

How the Test Will Feel

When the needle is inserted to draw blood, some people feel moderate pain, while others feel only a prick or stinging sensation. Afterward, there may be some throbbing.

Risks

There is very little risk involved with having your blood taken. Veins and arteries vary in size from one patient to another and from one side of the body to the other. Taking blood from some people may be more difficult than from others.

Other risks associated with having blood drawn are slight but may include:

- Excessive bleeding
- Fainting or feeling light-headed
- Hematoma (blood accumulating under the skin)
- Infection (a slight risk any time the skin is broken)

Normal Results

Normal CRP values vary from lab to lab. Generally, there is no CRP detectable in the blood.

Your doctor may also use a highly sensitive test called hs-CRP to help determine your risk of heart disease. According to the American Heart Association:

- You are at low risk of developing cardiovascular disease if your hs-CRP level is lower than 1.0mg/L
- You are at average risk of developing cardiovascular disease if your levels are between 1.0 and 3.0 mg/L
- You are at high risk for cardiovascular disease if your hs-CRP level is higher than 3.0 mg/L

Note: Normal value ranges may vary slightly among different laboratories. Talk to your doctor about the meaning of your specific test results.

What Abnormal Results Mean

A positive test means you have inflammation in the body. This may be due to a variety of different conditions, including:

- Cancer
- Connective tissue disease
- Heart attack
- Infection
- Inflammatory bowel disease (IBD)
- Lupus
- Pneumococcal pneumonia
- Rheumatoid arthritis
- Rheumatic fever
- Tuberculosis

This list is not all inclusive.

Note: Positive CRP results also occur during the last half of pregnancy or with the use of birth control pills (oral contraceptives).