

### What is CRP?

C-reactive protein (CRP) is a substance that is released into the blood in response to inflammation, the process by which the body responds to injury. Elevated levels of CRP in the blood mean that there is inflammation somewhere in the body, but other tests are needed to determine the cause and location of the inflammation.

Physicians now believe that [atherosclerosis](#), hardening of the arteries that can lead to a stroke or heart attack, is an inflammatory process. Atherosclerosis causes only a small amount of CRP to be released into the blood. Therefore, a very sensitive test called a [high-sensitivity CRP test](#) (hs-CRP) is used to measure CRP levels. A CRP test may be performed to help determine your risk of heart disease or stroke, or if you are hospitalized for heart attack or unstable chest pain.

### CRP Levels

CRP Risk Levels	
Risk Category	CRP (mg/L)
Low	Less than 1.0
Average	1.0 to 3.0
High	Above 3.0

CRP is measured in milligrams per liter of blood (mg/L). The risk categories above were established by the American Heart Association (AHA) and the Centers for Disease Control and Prevention (CDC) in 2003 using information drawn from largely white populations. In people whose CRP is tested for heart attack or unstable chest pain, a higher cutoff is used—a level above 10 mg/L is considered high in these cases. CRP is affected by some drugs—for example, [hormone therapy](#) increases CRP levels.

### Are CRP levels higher in women?

When the AHA and CDC set cutoffs for high and low CRP, it was assumed that levels were similar in men and women. Research now shows that women have higher levels of CRP than

men. A Dallas study of nearly 2750 people aged 30 to 65 years (more than half were women) found that on average CRP levels were almost twice as high in women as in men (3.3 vs. 1.8 mg/L). Even after accounting for traditional heart disease risk factors and the use of hormone therapy or the cholesterol-lowering [statin drugs](#) (both are closely tied to CRP levels), white women were 60% and African-American women were 70% more likely to have high CRP than white men. Being [overweight or obese](#) is also very strongly associated with high CRP, and excess weight appears to raise women's CRP levels more than men's.

Aside from being naturally higher in women, many other medical conditions can raise CRP levels, including arthritis, [diabetes](#), [high blood pressure](#), bacterial and viral infections, sleep disturbance, too much or too little physical activity, drinking too much alcohol, and depression.

### **Are CRP levels higher in certain races/ethnicities?**

An analysis of the Women's Health Study that included more than 25,000 female health professionals older than 45 years showed that CRP levels vary by race. African-American women had higher CRP levels (2.96 mg/L) than Hispanic (2.06 mg/L), white (2.02 mg/L), or Asian (1.12 mg/L) women. Among Asians, South Asians (2.59 mg/L) appear to have higher levels compared with Chinese men and women (1.18 mg/L).

CRP testing of more than 3200 Native Americans aged 45 to 74 years (64% were women) found that levels were much higher than those reported for other populations. The AHA and CDC cutoffs were not useful for predicting the risk of heart attack or dying from heart disease in this population. The authors suggested an alternative upper cutoff (above 4.0 mg/L) for Native Americans.

[Next: CRP & Stroke Risk](#)

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