

# Myeloperoxidase

Know your risk™ of a heart attack.



## What is myeloperoxidase?

Myeloperoxidase, or MPO, is an enzyme that is released by white blood cells called macrophages that measures your body's response to damaged artery walls that have become thin, cracked, and ultimately unstable due to cholesterol accumulation and inflammation.

## Why check my MPO levels?

When the walls of your arteries become damaged, cholesterol can enter and build up. Your body tries to remove the cholesterol by sending in immune cells. These cells wrongly think the cholesterol particles are bacteria or viruses that have invaded the body, and try to kill them by releasing MPO which acts like bleach. Instead of killing the cholesterol, MPO damages the cholesterol and contributes to the formation of foam cells, a name for cholesterol-filled immune cells. Instead of removing the cholesterol, these foam cells get stuck in the artery wall and contribute to chronic inflammation. Over time, the artery wall gets filled with plaque - a mixture of cholesterol, immune cells and foam cells - which goes relatively unnoticed until it is too late.

Just as lava in a volcano becomes hot and bursts open through the surface of the earth, plaque buildup inside the artery wall can become inflamed and burst through the wall of the artery to where the blood flows. When the plaque ruptures into the blood, the body responds to this injury by forming a clot. If the clot causes a complete blockage of blood flow, this can cause a heart attack.

Whether you have traditional risk factors for heart or vascular disease, such as abnormal cholesterol levels or high blood pressure, or known heart disease, the MPO test can help your medical provider find out if you have inflammation in your arteries that can add to your risk for a heart attack.

## When should the MPO test be performed?

The MPO test can be performed at the same time your medical provider runs other tests, such as a cholesterol test, to determine if you are at increased risk for a heart attack.

## How should I prepare for the MPO test?

The MPO test does not require any special preparation. You do not need to be fasting, and can be taking medications.

## What can I do to help lower my MPO levels?

There are a number of things you can do to lower your overall risk of heart disease, as well as lowering your MPO levels.

- It is important to maintain a healthy blood pressure because high blood pressure may damage the vessel wall and begin plaque formation.
- A heart-healthy diet is also recommended, as research has shown that weight loss helps decrease inflammation.
- If you are a smoker, the importance of stopping smoking to decrease the chance of plaque rupture and clot formation is even more urgent.
- There are prescription and non-prescription medicines your medical provider can give you that reduce MPO levels.

Your medical provider will work with you to develop a treatment plan that is right for you to help reduce your risk of a heart attack. This may include imaging testing, such as CIMT or coronary artery calcium scoring.



inflammation testing  
from ClevelandHeartLab

## RELATIVE RISK

MPO (pmol/L)

<470 Low

470 - 539 Moderate

≥540 High

