



Are My Arteries “On Fire”?

Role of Inflammation in Plaque Formation and Rupture

Chronic inflammation in the body is the underlying cause of many medical conditions, including cardiovascular disease. Other diseases related to inflammation are diabetes, rheumatoid arthritis, depression, hypertension and Alzheimer’s disease. Inflammation attacks the walls of the arteries and increases risk of plaque **formation** and plaque **rupture**: the cause of heart attacks and strokes. Inflammation is the body’s natural defense mechanism to fight off infection and toxins. If the natural balance of our immune system is disrupted, it can shift into a chronic state of inflammation, adversely affecting our entire body, including our arteries, where cholesterol is then deposited and plaque buildup begins.

The following four blood tests are independent predictors of risk for heart attacks and stroke.

- **Fibrinogen**, or Factor I, is produced by the liver and is an essential for normal blood clotting. Elevated levels are associated with inflammation and increased risk of cardio-vascular disease.
- **CRP-hs** (C-Reactive Protein-highly sensitive) is a simple blood test that measures the amount of inflammation in the body.
- **Lp-PLA2** is an enzyme that is produced in white blood cells and released from soft, active, vulnerable, rupture-prone plaque in the arteries. Elevated levels of both Lp-PLA2 and CRP-hs increases the risk for a heart or stroke event of up to **11-fold**.
- **MPO** (myeloperoxidase) is an enzyme found in white blood cells that is linked to inflammation and unstable plaque activity. MPO is a marker for vulnerable rupture-prone plaque. Elevated blood levels of MPO predict an early risk of heart attack in patients with chest pain.

For more information: www.clevelandheartlab.com/wp-content/uploads/.../MPO-Practice.pdf

Other causes of inflammation include:

- ❑ Diet high in sugars, refined flour, trans fats, saturated fats and processed foods
- ❑ Overweight, especially abdominal fat (Waist: Women - 35” and Men - 40”)
- ❑ Smoking
- ❑ Lack of exercise
- ❑ Stress, physical and emotional
- ❑ Sleep deprivation of less than 7 hours per night (possible Sleep Apnea)
- ❑ Toxins (mercury, lead)
- ❑ Food allergies, such as gluten and dairy
- ❑ Nutritional deficiencies including Vitamins D, B, C and Omega-3 fatty acids

How can inflammation be lowered?

- ❑ Diet: **LOW** in trans/saturated and low glycemic index carbohydrates, **HIGH** in monounsaturated fat
- ❑ Aerobic Exercise – 2 ½ hours/ week
- ❑ Smoking cessation
- ❑ Weight loss – goal of BMI below 25
- ❑ Omega 3 fatty acid supplements (EPA & DHA plus ALA)
- ❑ Fruits and vegetables
- ❑ Stress management techniques
- ❑ Adequate sleep
- ❑ Medications & Supplements, including Statins, Fibrates, Niacin, Vitamin D3, fiber