Are My Arteries “On Fire”?

Role of Inflammation in Plaque Formation and Rupture

Chronic inflammation in the body is the root cause of many medical conditions, including cardiovascular disease. Other diseases related to inflammation are diabetes, 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. (See ‘How Plaque Causes a Heart Attack or Stroke’ article)

The following three blood tests are independent predictors of risk factors for heart attacks and stroke:

- **CRP-hs** (C-Reactive Protein-highly sensitive) is a simple blood test that measures the amount of inflammation in the body.
- **Lp-PLA2** is a blood enzyme that is released from 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 5X the normal risk.
- **MPO** (myeloperoxidase) is an enzyme in white blood cells that is linked to inflammation and 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.


Obvious causes of inflammation include arthritis, infection and injury. Other causes 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 fats, fruits and vegetables.
- Aerobic Exercise – five days a weeks for 30 minutes/day
- Smoking cessation
- Weight loss – goal of BMI below 25
- Omega 3 fatty acid supplements (EPA & DHA)
- Fruits and vegetables
- Stress management techniques
- Adequate sleep
- Medications & Supplements, including Statins, Fibrates, Niacin, Vitamin D3, fiber

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