

## THE NEW MARKERS OF HEART DISEASE

We all know that elevated cholesterol increases your risk of heart disease, but did you know that more than 50% of people who have heart attacks DO NOT have excessively high levels of cholesterol or other commonly identified risk factors? Because of this, doctors have been searching for other risk factors to explain the high incidence of heart disease in our country. Among these “New Markers” or risk factors, three stand out as being especially important: Homocysteine, High Sensitivity C-Reactive Protein and Lipoprotein(a). These may help explain how seemingly healthy people can suddenly die of unidentified heart disease.

### Homocysteine

Homocysteine is a toxic amino acid. It accelerates the aging of your circulatory system by disrupting cell membranes in your blood vessels and causing premature heart disease. Researchers believe that excess levels of homocysteine may set the stage for cholesterol to penetrate blood vessel walls and start plaque formation. In effect, homocysteine is like cholesterol, so the lower the homocysteine, the better. Both Homocysteine and C-Reactive Protein have also been identified as risk factors for Alzheimer’s Disease.

Homocysteine can be treated successfully with high doses of Folic Acid and B-Vitamins.

### C-Reactive Protein

C-reactive protein is a blood protein that -- when found in elevated levels -- indicates the arteries are inflamed. Inflammation can stimulate white blood cells and cause deposits of cholesterol to break off and clog arteries. Later, it may weaken an unstable plaque and trigger a full-fledged heart attack or stroke.

Data from the *Physicians Health Study* has shown that people with high levels of this protein are at risk for stroke and heart attack even if they don't have traditional risk factors like smoking, high cholesterol and obesity.

Some researchers believe you should take antibiotics to inhibit inflammation that can lead to heart disease. Others believe aspirin is the way to go because of its anti-blood-clotting and anti-inflammatory properties. ‘Statin’ drugs such as Pravachol and Zocor may also help.

### Lipoprotein (a)

Lp(a) is a cholesterol particle that regulates clot formation and inhibits blood thinning. It also causes inflammation and clogging of blood vessels. Lp(a) is made up of a small portion of LDL cholesterol, with an adhesive protein (*apoprotein a*) surrounding it. This gives Lp(a) its "sticky" properties. There is a very clear association between Lp(a) and heart disease—research shows that people with high levels of Lp(a) have a 70% higher risk of developing heart disease over a period of ten years.

Unlike other components of your cholesterol count, the amount of Lp(a) in your blood isn't affected by your habits—dietary or otherwise. Elevated Lp(a) is entirely hereditary.

High Lipoprotein (a) can be difficult to treat. Many physicians will try a combination of diet modification and nutritional supplements such as Vitamin C, Co-Enzyme Q10 and Niacin.

Estrogen has also been shown to lower Lipoprotein (a) levels.