What is Lipoprotein a?

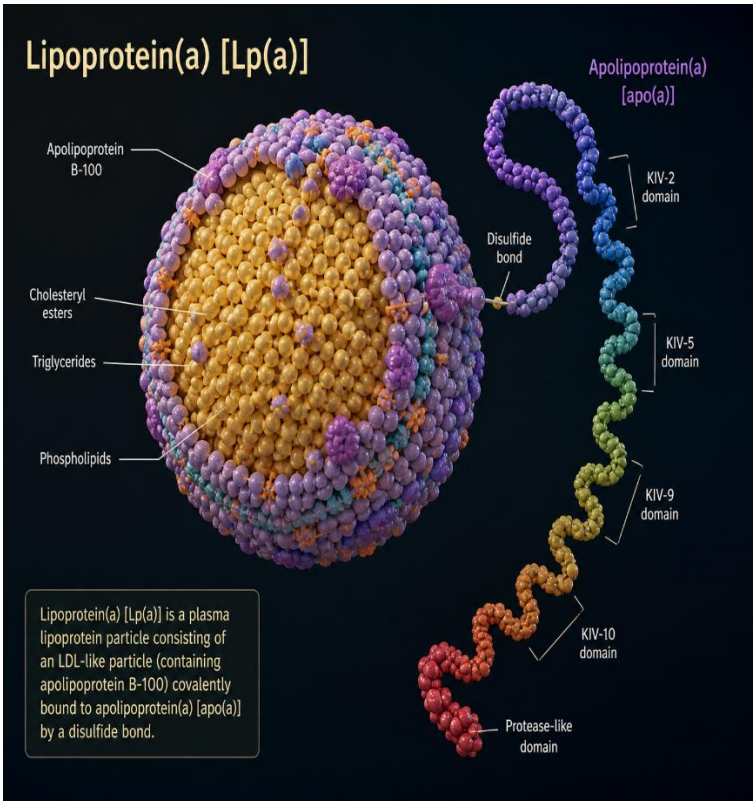
Lp (a) differs from other lipoprotein cardiovascular markers in that it is predominantly a monogenic cardiovascular risk determinant, with approximately 70 to 90% of interindividual heterogeneity in levels being genetically determined.

Of lesser influence are chronic kidney disease, hypothyroidism, menopause which can cause an increase and liver disease which is associated with lower levels.

This marker has 2 major protein components which are apoB100-containing lipoprotein and a highly glycosylated protein called apolipoprotein(a).

The apo(a) component of Lp (a) appears to have prothrombotic or antifibrinolytic activity, and the oxidizing phospholipids bound to Lp (a) play major roles in its pro-inflammatory and plaque-destabilizing actions.

Its levels differ across self-reported racial and ethnic groups with the highest levels in Black persons and in persons of South Asian descent.

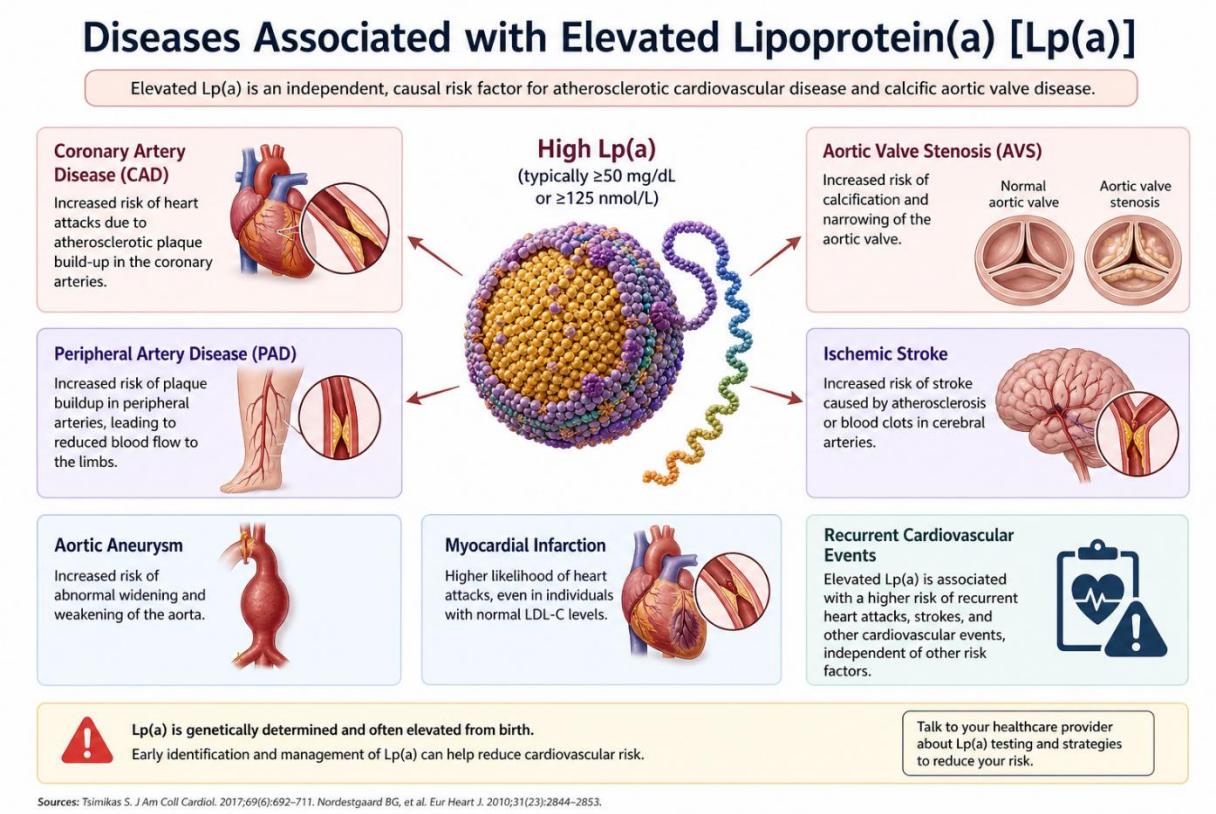


What is the association between lipoprotein (a) and cardiovascular disease?

It is estimated that increased Lp (a) affects 20% of the world's population and many people are unaware that their Lp (a) levels are elevated.

High levels are associated with accelerated progression of low-attenuation atherosclerotic plaques in patients with coronary artery disease.

Elevated Lp (a) levels are associated. These individuals also have a higher risk of atrial fibrillation, aortic valve calcification and aortic valve stenosis compared with individuals with normal Lp (a) levels. Patients with elevated Lp (a) are potentially less likely to respond to statins and will have residual ASCVD risk while on treatment with statins, regardless of LDL-C and apoB100 status



When should testing for lipoprotein (a) be conducted?

Lp (a) testing provides the opportunity to better define and classify ASCVD risk and therefore direct intensive cardiovascular risk factor management in individuals with elevated Lp (a) values. It would also allow physicians to identify patients who are potentially less likely to respond to statins. Moreover, cascade screening can help to identify elevated Lp(a) levels in relatives of individuals with a personal or family history of premature ASCVD, this is recommended by multiple medical societies.

Typically, Lp (a) levels do not fluctuate significantly over time; this means that most individuals need to undergo Lp (a) testing via non-fasting blood sample only once in their lifetime, unless Lp (a) is elevated. At least once in a lifetime testing has been suggested independent of a family history positive for cardiovascular disease or risk.

Given the ramifications of elevated Lp(a), there is a clear rationale to include an Lp(a) test for all patients undergoing lipid testing at least once.

Adult levels of Lp (a) can be found in children, in some cases by the time the children are 2 years old; this means that it can be evaluated in young people, especially in childhood, as a possible mechanism that may help to positively modify ASCVD risk when compared to testing people when older.