

Homocysteine (Hcy) Defined

Homocysteine (Hcy) is a sulphur-containing amino acid that is formed in the metabolism of methionine, an essential amino acid. If this metabolism is disturbed, Hcy accumulates in the cell and is then transported to the circulation where levels rise. Elevated Hcy is associated with cardiac disease, independent of other risk factors. Hcy has also been linked to Alzheimer's disease, risk of neural tube defects in children from mothers with high levels of Hcy, and some cancers.

Hcy generates superoxide and hydrogen peroxide, both of which have been linked to damage of the lining of arterial vessels.

Hcy changes coagulation factor levels encouraging blood clot formation. It prevents small arteries from dilating, making them more vulnerable to obstruction by clot or plaque.

It causes the smooth muscle cells that support the arterial wall to multiply - part of the atherogenic process

In its reactive form, Hcy thiolactone, it causes platelets to aggregate – part of the clotting process.

Homocysteine Test

A pinprick sample of blood is required. YORKTEST have developed a 'plasma separator' whereby customers can take their own blood sample at home using our unique kit. A small amount of blood (c50µl) is dropped onto a card and the membrane within the card then separates the plasma from the red blood cells. This blood sample is then sent back to the laboratory and tested using an enzyme immunoassay

The assay requires a pre-column derivatisation to release the Hcy bound to proteins, followed by fluorescent labelling with a thiol-specific dye.

