Do moderately raised blood levels of homocysteine increase the risks of coronary heart disease and stroke? Only intervention studies with homocysteine-lowering agents such as folate and vitamin B₁₂ can show whether hyperhomocystinemia is a risk factor and not merely a risk marker. Meanwhile, several lines of evidence indicate that, in the short-term, a raised homocysteine concentration in blood causes endothelial dysfunction via oxidative stress. For example, Chambers and coworkers gave oral methionine to healthy volunteers and found that flow-mediated dilatation declined as plasma homocysteine rose—an effect that was abolished by pretreatment with the antioxidant vitamin C (Circulation. 1999;99:1156–1160).

This same research group has now explored the hypothesis that hyperhomocysteinaemia accounts for part of the unexplained excess of coronary heart disease that affects immigrants to the United Kingdom from the Indian subcontinent (Indian Asians); they reported the results of this study at the 72nd Scientific Sessions of the American Heart Association, which were held in Atlanta, Georgia. The group recruited 551 men with proven coronary heart disease and 1025 healthy controls. About half of each group consisted of Indian Asians, and the other half was made up of Europeans; all participants lived in West London. In both racial groups, fasting homocysteine concentrations were 8% higher in cases than in controls.

As in several previous studies, the association of homocysteine levels with coronary heart disease was independent of conventional risk factors. Post-methionine-load homocysteine concentrations were only 4% higher in those with coronary disease; this finding was not influenced by race. The key finding was that, among the controls, mean fasting homocysteine concentrations were 0.6 μmol/L higher in Indian Asians than in Europeans—a difference that could explain ~20% of the excess liability of this racial group to coronary heart disease. The reason for the difference was that the Indian Asians had lower blood levels of vitamin B₁₂ and folate. But why should this be? If there is a simple explanation, such as overcooking food, other micronutrients (vitamin C, for example) deserve examination.

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Homocysteine Levels in London Indian Asians
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