

A study published this month in the British Medical Journal (Wouter de Ruijter et al, British Medical Journal, 9th January, 2008) shows that your homocysteine level, a simple blood test, predicts risk of death from cardiovascular disease in older people better than any conventional measure of risk including cholesterol, blood pressure or smoking.

Conventional wisdom uses a mixture of risk factors (*sex, blood pressure, cholesterol, ECG, diabetes, smoking*) known as the Framingham risk score to predict risk of cardiovascular disease. This study in Holland of several hundred elderly people with no history of cardiovascular disease measured these conventional risk factors, and also potential new indicators namely folic acid, homocysteine, C reactive protein and interleukin 6, over a five year period. Quoting the study *“Classic risk factors did not predict cardiovascular mortality when used in the Framingham risk score. Of the new biomarkers studied, homocysteine had most predictive power.*



*Entering any additional risk factor or combination of factors into the homocysteine prediction model did not increase its discriminative power.”* Two thirds of cardiovascular deaths were predicted by a high homocysteine level alone. That’s in comparison to a recent survey that found that 75% of those that had a heart attack didn’t have high cholesterol.

Bear in mind that the fact that homocysteine is an excellent predictor of cardiovascular disease, as this study confirms, doesn’t necessarily mean it causes cardiovascular disease. For example, people who smoke, have a bad diet and don’t exercise tend to have higher homocysteine levels. Theoretically homocysteine could just reflect an unhealthy lifestyle, which then raises risk. But high homocysteine in the blood does actually damage arteries. This led to a series of studies in which people have been given B6, B12 and folic acid, singly or in combination, to lower homocysteine. Overall, these studies have shown a reduction in strokes, but not a reduction in heart attacks. This has led some medics to dismiss raised homocysteine as a primary cause of cardiovascular disease.

But this conclusion may be premature for three reasons. Most studies have not looked specifically at those with high homocysteine levels (eg a person with a homocysteine of 15 may have a different response to homocysteine lowering B vitamins than a person with a homocysteine level of 9). In this Dutch study the homocysteine level that predicted high risk was above 13. Secondly, only modest reductions of homocysteine have been reported with combinations of B6, B12 and folic acid (usually 5-20% reduction). To put this in perspective, using a combination of B6, B12, folic acid, TMG and zinc, plus diet and modest lifestyle changes, I have often seen 50% reductions in three months. Thirdly, most studies have given homocysteine lowering nutrients to people with cardiovascular disease who were also on a combination of up to five drugs. We don’t yet know if drugs such as statins interfere with the potential benefit of the nutrients, perhaps by lessening room for improvement.

What is needed to find the maximum effect of lowering homocysteine is studies

giving those with high homocysteine levels and not on medication, a more effective combination of nutrients, plus lifestyle changes that achieve the homocysteine reductions that would appear to predict low risk. No study has yet done this, nor studied a group of drug-free high homocysteine individuals, with or without cardiovascular disease, given either appropriate homocysteine-lowering nutrients or placebos.

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