



## HOMOCYSTEINE

### BACKGROUND

Most health assessments test for the 'usual suspects': cholesterol, blood pressure, and blood glucose.

**Homocysteine** is a marker that doesn't get enough attention. Keeping this amino acid in check can help lower your risk of heart disease, dementia, and even pregnancy complications. Identifying an issue with it and managing it can be game-changing for your anti-ageing and longevity health plan.

## What Is Homocysteine?

Homocysteine is a byproduct of your body's metabolism. It's part of the process of breaking down an amino acid, methionine. You get this from eating protein-rich foods such as meat, fish, eggs and legumes. Normally, your body uses certain vitamins – **folate (B9), B12, and B6** – to regulate or recycle homocysteine levels.

However, a B12 / Folate deficiency or a genetic quirk, or other underlying conditions can cause homocysteine levels to rise—a situation called **hyperhomocysteinaemia**. Over time, high levels can increase the risk of several health problems.

## Why Does High Homocysteine Matter?

High homocysteine doesn't cause obvious symptoms, so it's often referred to as a "silent risk factor." But —its long-term effects can be serious. Key problems:

### 1. Heart and Blood Vessel Health

High homocysteine can damage blood vessel linings, cause inflammation, and even contribute to arterial plaque buildup (**ASCVD**). It's linked to an increased risk of heart attacks, strokes, and blood clots.

### 2. Brain Health

Research suggests high homocysteine may accelerate brain shrinkage and age-related changes, leading to increased dementia or Alzheimer's disease.

### 3. Pregnancy Outcomes

For women, high homocysteine levels have been linked to complications like preeclampsia, recurrent miscarriages, and low birth weight babies.

### 4. Bone Health

Studies have found that high homocysteine levels can weaken bones, increasing the risk of fractures, especially in older adults.

## Should You Get Tested?

Homocysteine isn't included in most routine health check blood tests. However, we offer it to our patients as part of our Cardiac Risk Factors panel in our Preventative Health Assessments. Testing can be especially valuable if you:

- Have a **family history of heart disease, strokes, or cognitive decline**.
- Have experienced unexplained blood clots or other cardiovascular issues.
- Are planning a pregnancy or have had complications like miscarriages or preeclampsia in the past.
- Live with chronic conditions such as **kidney disease or autoimmune disorders**.
- Are concerned about maintaining strong bones as you age.
- Want to ensure you're doing everything you can to improve **ageing and longevity**.

## What Causes High Homocysteine?

Several factors:

- **Genetics:** Certain genetic mutations e.g. those of the **MTHFR gene**, can make it harder for your body to process homocysteine.
- **Vitamin Deficiencies:** Low folate, B12, and B6 levels.
- **Lifestyle:** Smoking, drinking too much alcohol, and poor diet.
- **Underlying Health Conditions:** Kidney disease, underactive thyroid, or certain medications can contribute to higher levels (e.g. Omeprazole, Anti-epileptics, oral birth control).

## How to Lower Your Homocysteine Levels

Managing high homocysteine is usually straightforward. We may recommend:

### 1. Eat a Nutrient-Rich Diet

Foods packed with folate (like leafy greens, beans, and avocados), vitamin B12 (found in eggs, meat, and dairy), and vitamin B6 (in bananas, potatoes, and fortified cereals).

### 2. Consider Supplements

Diet alone may not be enough - taking supplements containing folate, B12, and B6 can help bring levels back to normal.

### 3. Make Lifestyle Changes

Quitting smoking, reducing alcohol intake, and managing stress can lower homocysteine.

### 4. Monitor Your Progress

Regular blood tests can help you track your homocysteine levels and adjust your plan as needed.

## What's Next for Homocysteine Research?

Scientists are still exploring how homocysteine impacts health. While its role in heart disease and cognitive decline is well-documented, emerging research is uncovering links to other conditions, like some pregnancy complications.

Testing your homocysteine levels could be a vital step your longevity health plan is missing. At our practice, we can easily arrange testing and provide personalised advice tailored to you. Whether your goal is to protect your heart, boost brain health, or simply stay ahead of potential issues, understanding your homocysteine levels is part of the ideal panel of tests.



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