

MTHFR GENE

The MTHFR gene encodes the enzyme methylenetetrahydrofolate reductase (MTHFR), which plays a crucial role in the folate metabolism pathway. This pathway is essential for various biochemical processes, including DNA synthesis, repair, and methylation. Variations within this gene can impact its function and lead to a variety of health challenges.

There are two main common variants of the MTHFR gene that are frequently studied: C677T and A1298C. These variations can lead to decreased enzyme activity and altered folate metabolism. Variants in the MTHFR gene have been associated with various health conditions, although the impact of these variants can vary widely among individuals. Some potential health implications include:

Neural Tube Defects (NTDs): Reduced enzyme activity due to MTHFR variants has been linked to an increased risk of NTDs, which are birth defects affecting the brain and spinal cord development in fetuses. Research is ongoing also on the link with miscarriage and stillbirth and this gene.

Cardiovascular Disease: MTHFR variants, particularly C677T, have been studied in relation to increased risk of cardiovascular diseases, including blood clotting disorders, DVT, stroke and high homocysteine levels.

Mental Health: Many studies have explored the connection between MTHFR variants and mental health conditions such as depression, anxiety, and schizophrenia. The brain and many hormones

rely on B12 and folate and a deficiency can contribute to many mental health issues.

Fatigue and Brain Fog: There is ongoing research into the role a defect on this gene and mitochondrial function and energy cycle is impacted. Many people using appropriate supplementation for MTHFR gene note increase in concentration, memory recall, clarity and brain fog lifting. There is also ongoing research into dementia and several neurological diseases and their connection with MTHFR gene defect.

Migraines and headaches: Many sufferers of migraines and headaches who have gone years with not ever discovering the source of their symptoms often test positive to a defect on one of the MTHFR genes, usually the 677C gene. Appropriate supplementation long term has been proven clinically over and over as a viable treatment. It is an important gene to check if you are a sufferer.

Folate is crucial for individuals with MTHFR gene variants to support optimal folate metabolism. Dietary sources of folate include leafy greens, legumes, citrus fruits, and fortified cereals. Folic acid supplementation is not recommended as it is a synthetic form of folate and won't be absorbed properly in anyone carrying this gene defect. Pregnant women should be very careful in dosage making sure they are on the correct forms of folate and B12 in the lead up and during their pregnancy.

Genetic testing can identify MTHFR gene variants, providing individuals and healthcare professionals with information about potential future health risks. However, it's important to note that having a variant does not necessarily guarantee the development of health issues. The average cost of this test is around \$ 50 your GP or natural health

practitioner can send you for the test. Understanding an individual's MTHFR gene status can enable personalized healthcare recommendations, including dietary adjustments and potential supplementation, to optimize folate metabolism and reduce associated health risks.

The MTHFR gene is a key player in the folate metabolism pathway, with variants potentially impacting various health outcomes. Genetic testing and personalized healthcare strategies can help individuals with MTHFR gene variants make informed choices for their well-being. It's important to work with healthcare professionals to interpret genetic information and develop appropriate health management plans.

It is very important to not purchase just any brand folate or B12 this gene needs specific treatments and, in many cases, not mega dosages, so proper assessment and monitoring of homocysteine levels is essential.