Who may benefit from this test?

Individuals with any of the following diagnoses or symptoms, lab data indicating the tendency toward:

Cardiovascular Diseases
e.g. Hypertension, coronary artery disease, stroke [4-10]

Neurological Disorders
e.g. Depression, dementia, Alzheimer's disease, ADD/ADHD, autism spectrum disorder, chronic fatigue syndrome, migraine, insomnia [7, 10-17]

Metabolic Conditions
e.g. metabolic syndrome, diabetes mellitus, kidney diseases, reduced ability to metabolize medications, multiple chemical sensitivity [10, 18-21]

Musculoskeletal Disorders
e.g. Osteoporosis [10, 22]

Eye Diseases
e.g. Macular degeneration [23, 24]

Cancer
e.g. Colorectal, breast, and others [1, 10, 25]

Literature

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For additional literature references, visit **cellsciencesystems.com**

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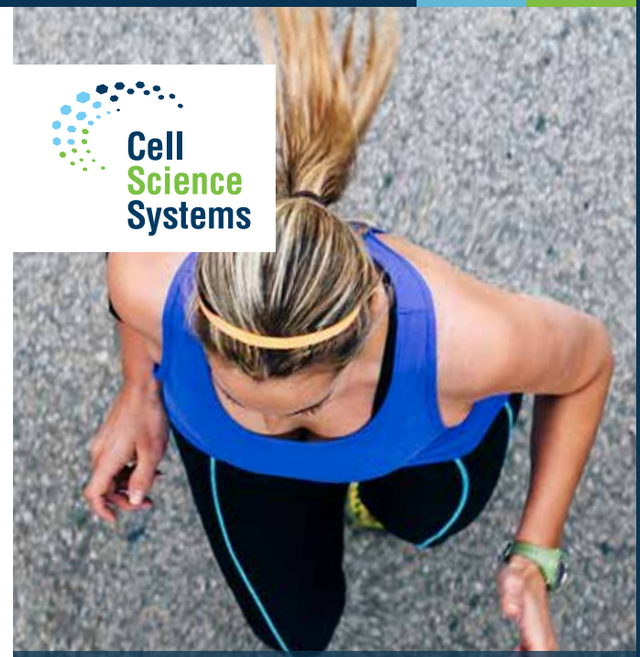


Cell Science Systems

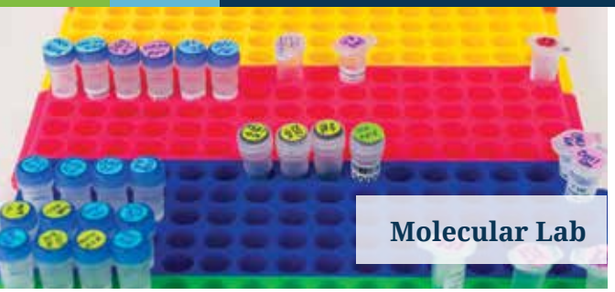
More than 50% of people are affected by **genetic mutations in the methylation pathway.**

Methylation can play an important role in many chronic diseases. By understanding your genetics you can prevent and address these conditions with the right nutrition.

In the 1960's, a profound discovery from Dr. Kilmer McCulley at Harvard, concerning homocysteine metabolism, which is under genetic control, but can be affected by diet, is associated with cardiovascular and neurological disease.

The **MethylDetox Profile**

The **MethylDetox Profile** tests critical genes in the methylation pathway. The methylation pathway is the major part of detoxification and the metabolic cycle. Based on your genetics, this profile enables you to address many important chronic medical conditions by using nutrition and nutrient supplementation.



Molecular Lab

Comprehensive testing for methylation and detoxification

The MethylDetox Profile gives more actionable information than MTHFR testing alone, giving you a more complete picture of your body's methylation and detoxification. The MethylDetox profile includes Smart Commentaries, detailing recommended nutrients based on your genetics.

Standard MTHFR genotyping only evaluates folic acid metabolism. Scientific research reveals that a variety of genes are involved in maintaining methionine/homocysteine balance. Genetic variations (SNPs) in these important genes influence your methylation potential. Individual methylation is monitored using homocysteine levels. Important SNPs are included to evaluate your ability to methylate neurotransmitters, DNA and toxins.

Test Components

1. MTHFR

The MTHFR gene's purpose is to produce the important MTHFR enzyme in the body. This enzyme is an important part of maintaining optimal health. If the MTHFR gene has a mutation, folate metabolism can be negatively impacted. Improper folate metabolism is implicated in many different diseases. [5, 6, 10, 26-29]

2. MTR

MTR codes for the enzyme, methionine synthase (MS). MS converts homocysteine to methionine using methylated vitamin B12. Mutations in this gene significantly impact homocysteine metabolism, which can increase the risk for a number of chronic conditions such as cardiovascular diseases, metabolic and neurological conditions and certain cancers. [30]

3. MTRR

The MTRR gene codes for the important enzyme, methionine synthase reductase (MSR). Methionine synthase reductase is required for the proper function of methionine synthase (see MTR). Both genes act together to convert homocysteine to methionine. Mutations can be involved with the development of cancers, Parkinson's disease, depression, hypertension and many others .[31-36]

4. COMT

COMT is the major gene involved in methylation. It plays an important role in a variety of disorders, including estrogen-induced cancers, Parkinson's disease, depression, hypertension and many others. COMT is also necessary for maintaining the proper balance of neurotransmitters with SAMe obtained from methionine. Genetic mutations in COMT can result in various neurological problems and has also been associated with Autism. [31-36]

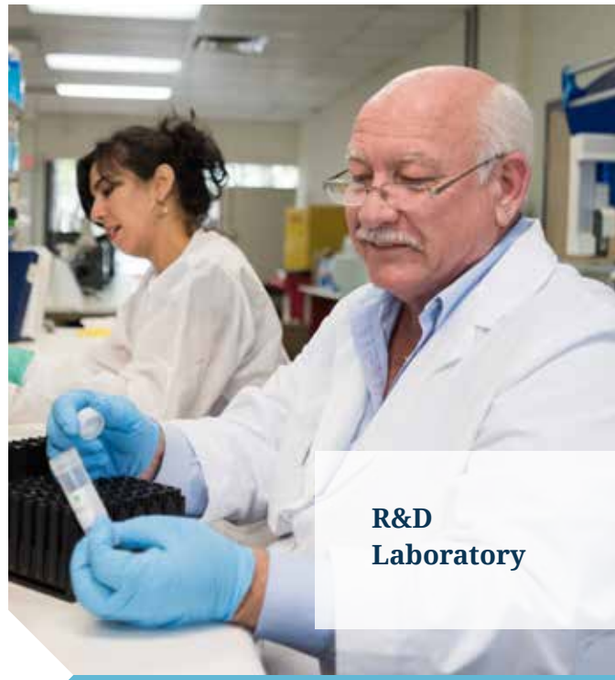
5. AHCY

AHCY is the only enzyme known to convert S-Adenosylhomocysteine (AdoHcy) to homocysteine. It is crucial that AHCY immediately converts AdoHcy to homocysteine and adenine in order to maintain optimal methylation potential. Studies show a link between mutations in this gene with poor methylation potential and severe myopathies, developmental delays and hypermethioninemia.

6. Homocysteine

Homocysteine is an amino acid that is involved in maintaining the methionine cycle. Elevated homocysteine levels are well known risk factors for chronic disease, particularly cardiovascular, diabetes and neurodegenerative disorders. [7, 10, 37]

Ask your physician if this test is right for you.



R&D Laboratory

Test Results

Test results include Smart Commentaries created by clinicians and scientists. Smart Commentaries include personalized recommendations for diet and nutrition supplementation.