dna health®

optimal health for life

methylation panel report

Name:
Date of Birth:
Sample Number:
Referring Practitioner:
Date Reported:

Welcome to your methylation panel report

From your buccal swab sample we have used a process called the Polymerase Chain Reaction (PCR), which copies the DNA of your genes many times over so that we can generate sufficient quantities to analyse your genetic material. We then identify unique DNA sequences in some of your genes. Certain changes (polymorphisms) in these genes have been studied in detail, with evidence that correlates these polymorphisms with an individual's risk of developing certain chronic disease conditions or altered metabolic processes. Having identified the presence or absence of these polymorphisms, we are able to qualitatively assess particular areas of health risk related to the specific genes. To make a holistic assessment of health risks, environmental factors (diet and lifestyle) need to be considered in conjunction with the accompanying genetic profile.

How to read your results

You will find your genetic results in the following pages. On the left side you will see the gene name and description. On the right side you will find your specific result and an explanation of the results, associated risks, and diet and lifestyle recommendations. The impact can be identified by the colour of the circle (please see the key below).

No impact: 

Mild impact: 

Moderate impact: 

High impact: 

Beneficial impact: 

Methylation

B vitamins provide building blocks for growing cells, which are constantly being renewed, and play an important role in many physiological processes. B vitamins also sup ls necessary for protecting our genes, so that our DNA doesn't accumulate damage from the wear and tear in the daily lives of our cells. These vitamins – including folate, vitamins B6 and B12 – help make new DNA for cells that are constantly growing and renewing themselves. Folate is also involved in turning many genes on and off, and also helps repair DNA. The process of DNA repair is called methylation. Although B vitamins are only required in small amounts, they are crucial for methylation and in producing new DNA.

Gene Name	Genetic Variation	Your Result	Gene Impact
MTHFR	677 C>T	TT	
	1298 A>C	AA	
MTR	2576 A>G	AA	
MTRR	66 A>G	GG	
CBS	699 C>T	TT	
COMT	472 G>A	AA	

MTHFR 677 C>T

Methylenetetrahyrdofolate Reductase is a key enzyme in the folate metabolism pathway – directing folate from the diet either to DNA synthesis or homocysteine remethylation.

YOUR RESULT: **TT** 

The T allele lowers activity of the MTHFR enzyme, which results in an increase in homocysteine levels, a decrease in DNA methylation and thus an increase in DNA adducts. T allele carriers have increased folate, vitamin B2, B6 & B12 requirements. – Enzyme function is only 40% of optimal in TT individuals. In addition to folate-rich foods, a supplement may be recommended. In TT individuals as much as 800ug folate may be required.

MTHFR 1298 A>C

Methylenetetrahyrdofolate Reductase is a key enzyme in the folate metabolism pathway – directing folate from the diet either to DNA synthesis or homocysteine remethylation.

YOUR RESULT: **AA** 

No genetic variation was detected at the 1298 A>C locus.

Methylation continued

MTR 2576 A>G

Methionine Synthase encodes the enzyme that catalyses the remethylation of homocysteine to methionine.

YOUR RESULT: **AA**

No variation was detected at the 25776 A>G locus.

MTRR 66 A>G

Methionine Synthase Reductase catalyses methylcobalamin, an essential cofactor of methionine synthase (MTR), which is essential for maintaining adequate intracellular pools of methionine and is also responsible for maintaining homocysteine concentrations at non-toxic levels.

YOUR RESULT: **GG**

The G allele is associated with increased risk for premature CAD and the GG genotype is a significant risk factor for the development of premature CAD and Neural Tube Defects (NTDs) when cobalamin (Vitamin B12) status is low. Ensure adequate intake of folate, vitamin B12 and vitamin B6.

CBS 699 C>T

Cystathionine beta synthase catalyses the conversion of homocysteine to cystathione and is directly involved in the removal of homocysteine from the methionine cycle, thus any alterations in its activity could affect homocysteine levels.

YOUR RESULT: **TT**

The variant 699T allele is associated with decreased risk of CAD and an increased responsiveness to the homocysteine lowering effects of folic acid. Check dietary folate intake and homocysteine levels and supplement if necessary.

COMT 472 G>A

Soluble catechol-O-methyltransferase (S-COMT) helps control the levels of certain hormones and is involved in the inactivation of the catecholamine neurotransmitters (dopamine, epinephrine, and norepinephrine). The enzyme introduces a methyl group to the catecholamine, which is donated by S-adenosyl methionine (SAM). Any compound having a catechol structure, like catecholestrogens and catechol-containing flavonoids, are substrates of COMT.

YOUR RESULT: **AA**

The A allele is associated with a 3-4 fold reduction in the methylation activity of the COMT enzyme and is associated with increased risk for breast cancer. Key interventions for beneficial modulation of oestrogen metabolism can be accomplished by increasing insoluble fibre, managing the quality of dietary fat intake, losing weight, and increasing exercise. In addition, ensure sufficient anti-oxidant and magnesium intake.

Notes for practitioners

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