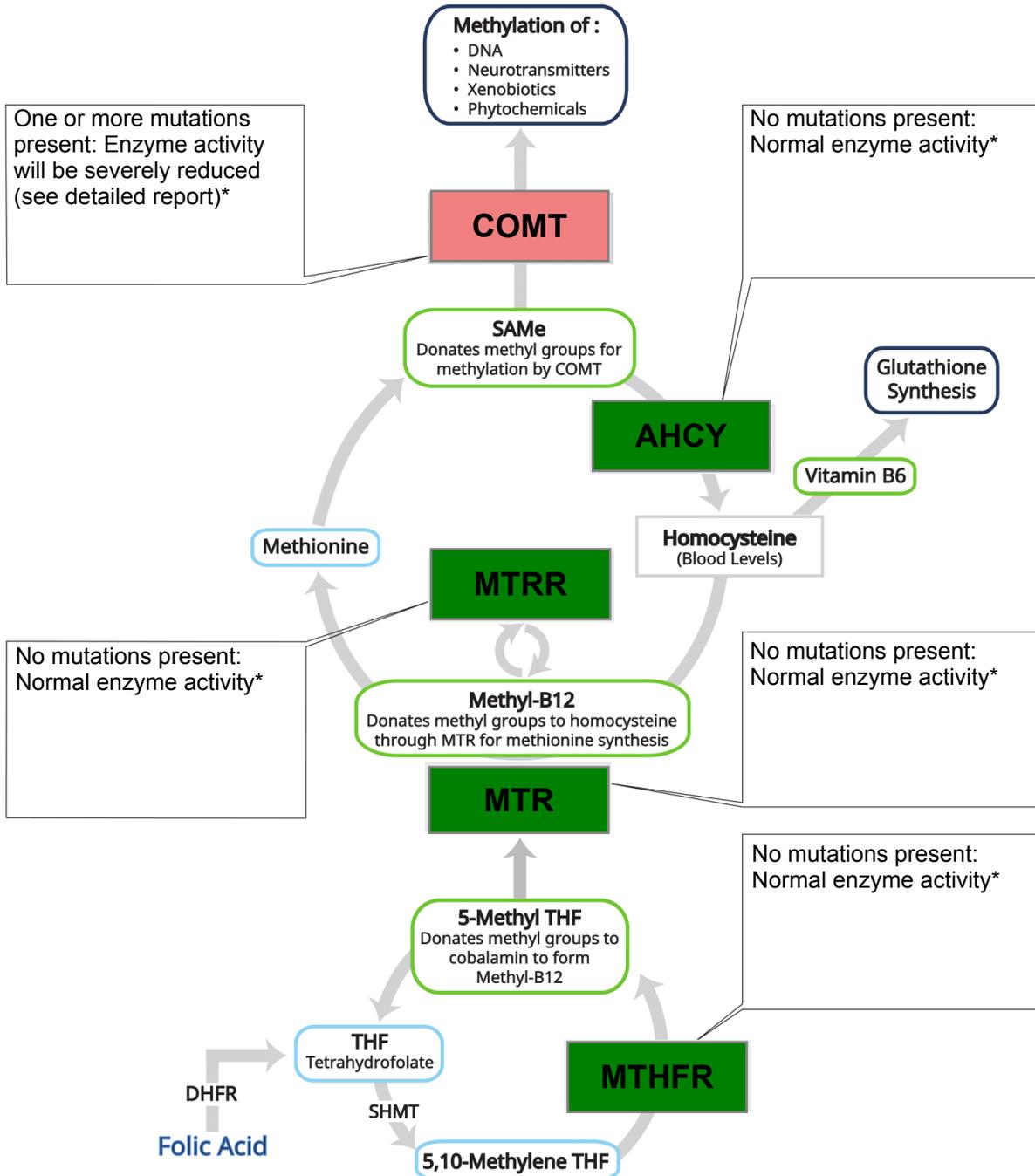


Patient Information		Name: SAMPLE, PATIENT	
Date of Birth: 6/13/2001	Gender: M	Lab ID: 999999	
Date Received: 9/2/2016	Date Collected: 09/01/2016	Date Reported: 10/11/2016	
Physician: Dr. Sample		Clinic ID: 99999	

Methylation Detoxification Cycle:



* Note that mutations other than those tested may contribute to the decrease in the enzyme activity.

Patient Information		Name:	SAMPLE, PATIENT		
Date of Birth:	6/13/2001	Gender:	M	Lab ID:	999999
Date Received:	9/2/2016	Date Collected:	09/01/2016	Date Reported:	10/11/2016
Physician:	DR. SAMPLE	Clinic ID:	99999		

Personalized Genomic Commentary:

MTHFR	C677T	Homozygous Negative	Genes inherited from both parents have no mutations. Enzyme activity tends to be normal regarding the investigated mutation site.
	A1298C	Homozygous Negative	Genes inherited from both parents have no mutations. Enzyme activity tends to be normal regarding the investigated mutation site.

Summary: 1. Enzyme effectiveness tends to be normal.

2. No tendency towards elevated homocysteine levels due to the investigated mutation sites.

Important: 1. If individual is being treated with antifolates and homocysteine levels are elevated, supporting literature strongly suggests supplementation with 5-MTHF. Examples of antifolates include: Methotrexate (Rheumatrex, Trexal), Pyrimethanine (Daraprim), Premetrezed (Alimta), Trimethoprim, Proguani.
2. Use caution with individuals previously diagnosed with serotonin syndrome.

MTR	A2756G (Asp856Gly)	Homozygous Negative	Genes inherited from both parents have no mutations. Enzyme activity tends to be normal regarding the investigated mutation site.
	C3518T (Pro1173Leu)	Homozygous Negative	Genes inherited from both parents have no mutations. Enzyme activity tends to be normal regarding the investigated mutation site.

Summary: 1. Enzyme effectiveness tends to be normal.

2. No tendency towards elevated homocysteine levels due to the investigated mutation site.

MTRR	A66G (Ile49Met)	Homozygous Negative	Genes inherited from both parents have no mutations. Enzyme activity tends to be normal regarding the investigated mutation site.
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Summary: Enzyme effectiveness tends to be normal.

Important: In combination with the C677T polymorphism in MTHFR, MTRR genotypes AG (heterozygous) and GG (homozygous positive) influence total plasma homocysteine levels. Additionally, the combination of the genetic polymorphisms in MTRR and MTHFR is linked to an increase in DNA damage as measured by micronucleus frequency (MN). Use caution with individuals previously diagnosed with serotonin syndrome.

AHCY	C112T (Arg10Trp)	Homozygous Negative	Genes inherited from both parents have no mutations. Enzyme activity tends to be normal regarding the investigated mutation site.
	G367A (Gly95Arg)	Homozygous Negative	Genes inherited from both parents have no mutations. Enzyme activity tends to be normal regarding the investigated mutation site.
	g.G32878481C	Homozygous Negative	Genes inherited from both parents have no mutations. Enzyme activity tends to be normal regarding the investigated mutation site.

Summary: Enzyme effectiveness tends to be normal.

Important: Relevant mutations are associated with decreased enzyme presence and/or impaired function leading to elevated AdoHcy (s-adenosylhomocysteine) concentrations which may impair methylation potential. Studies show that association between mutations resulting in poor methylation potential may lead to severe myopathies, developmental delays, and hypermethionemia.

COMT	G304A (Ala52/102Thr)	Homozygous Negative	Genes inherited from both parents have no mutations. Enzyme activity tends to be normal regarding the investigated mutation site.
	G472A (Val108/158Met)	Homozygous Positive	Genes inherited from both mother and father have mutations. Enzyme activity tends to be reduced regarding the investigated mutation site.

Summary: 1. Enzyme effectiveness tends to be significantly reduced (see page 4 for genomic recommendations)

2. Degradation of the following substances by methylation tends to be poor:

Important: 1. Physician should be aware of this genetic test result should the patient be taking COMT inhibitors such as: entacapone (Comtan) tolcapone (Tasmar) nitecapone
2. Use CAUTION when providing supplemental nutrients for those :
a. who have a history of serotonin
b. who take medication for Parkinson's disease
c. who take COMT inhibitors like Entacapone, Tolcapone in connection with L-Dopa (Dopamine).



Advanced Methylation Detoxification Profile

GENOMIC INSIGHTS™

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Genomic Recommendations:

Gene	Address Need For	Nutrient Applications	RDA	Consider Supplementation With Practitioner Guidance
COMT	Precursors for body to make SAME (cofactor for COMT enzyme): L-methionine Cofactor:: magnesium	Food sources of methionine: eggs, fish, turkey, cheese, legumes, nuts/seeds. Green tea and quercetin are COMT inhibitors. Attention to amount consumed may be necessary. Avoid quercetin in supplementation. (**see quercetin content of foods chart included in report)	mg of methionine and cysteine per kg body weight: 4-8 years 22 mg 9-13 years boys 22 mg 9-13 years girls 21 mg 14-18 years boys 21 mg 14-18 years girls 19 mg 19+ years 19 mg Pregnancy 25 mg Lactation 26 mg	Clinical experience suggests an oral dose of 500 mg methionine 1-2 times per day, ** Address dietary intake.

***Limitations of the Recommended Dietary Allowances** The RDA is defined by The Food and Nutrition Board of the Institute of Medicine as "the average daily dietary nutrient intake level sufficient to meet the nutrient requirement of nearly all (97 to 98 percent) healthy individuals in a particular life stage and gender group." This does not mean that additional nutrients provided via supplementation would not be beneficial. The RDAs are not meant to apply to those managing inherited metabolic disorders, medical conditions, or those using nutrient depleting medications. It is generally well accepted by nutrition professionals, that higher levels of nutrient intake can help prevent chronic disease and promote optimal health.

****Consult with ordering health care practitioner to assess need for supplementation and proper dosage. Therapeutic dose to be determined by ordering health care provider. (the level of nutrient intake to optimize methylation status varies from individual to individual)**

FOOD and LIFESTYLE FIRST

An individual's nutrient status depends on many factors. Digestion, absorption, and assimilation impacts the availability of nutrients supporting methylation, so issues potentially interfering with that availability need to be addressed. Further laboratory assessment may be indicated.

For food and lifestyle based support of methylation:

- Address GI function, intestinal permeability, dysbiosis, and food sensitivities. Avoid offending foods and ingredients.
- Consume a variety of organic, whole, colorful plant foods providing fiber, anti-inflammatory and anti-oxidant benefit. Include omega 3 fatty acids. Consume enough protein from lean- antibiotic/hormone free animal sources and/or plant sources- legumes, nuts/seeds.
- Manage weight and regulate blood glucose.
- Hydrate well with filtered water. Overall fluid need = 1 ounce/kg body weight (~½ body weight in fluid ounces, unless fluid restriction prescribed by physician)
- Avoid sugar, refined/fortified grains, conventionally raised animal products, trans fats, charbroiled foods (avoid grilling and deep frying) .
- Avoid air pollutants, pesticides, bisphenol A, phthalates, automobile fumes, jet fuel, benzene, heavy metals, plastic food/beverage containers. Avoid high mercury fish- tuna, shark, swordfish, King mackerel.
- Avoid excessive alcohol consumption.
- Don't smoke.
- Work with a nutrition expert who can tailor the eating pattern to meet individual requirements.
- Lead an active lifestyle. Adopt a moderate exercise routine. Consult an exercise specialist to individualize routine. Avoid over-training.
- Reduce and manage stress. Consider meditation, yoga, prayer, positive thinking, acupuncture, social interaction, journaling. Get adequate sleep.

Patient Information		Name: SAMPLE, PATIENT	
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Dietary sources of key methylation nutrients

Folate - leafy greens- spinach, turnip greens, mustard greens, collard greens, legumes- mung beans, chickpeas , pinto beans, great northern beans, lentils, black beans, fava beans, kidney beans, soybeans, navy beans, pinto beans, black eye peas , split peas, peanuts, leeks, asparagus, broccoli, Brussels sprouts, avocado, citrus fruit, beets, spearmint, rosemary, daikon radishes, basil, cilantro (coriander leaf), marjoram, oregano, sage, tarragon, thyme, peanuts, sunflower seeds, wakame seaweed, quinoa, kelp seaweed, bay leaf, parsley, shitake mushrooms, dill, okra, egg, artichokes.

Magnesium - Agar seaweed, herbs, spices, bran, pumpkin seeds cocoa flaxseed, Brazil nuts, sunflower seeds, sesame seeds, poppy seeds, almonds, cashews, buckwheat, amaranth, rye, molasses, walnuts, quinoa, great northern beans, mung beans, teff, tofu, chickpeas, oats, daikon radish, bulgur, lambsquarters, hazelnuts, leeks, black beans, kidney beans, horseradish.

Methionine - Egg, cod, whitefish, sesame seeds, spirulina, parmesan cheese, sunflower seeds, Brazil nuts, chicken, beef, lamb, salmon, buffalo, turkey, halibut, anchovy, Romano cheese, game meats, gruyere cheese, goat cheese, goose, duck, snapper, tilapia, mackerel, haddock, lobster, pumpkin seeds, sardine, herring, bison.

Quercetin

(Quantity -- Quercetin content mg/100 grams)

Food	Quantity	Food	Quantity	Food	Quantity
Capers, canned	173	Carob fiber	58	Elderberry juice concentrate	108
Dock, Rumex spp., raw	86	Dill weed, fresh	55	Fennel leaves, raw (Fennel bulb raw 0.23)	49
Radicchio	32	Onions, red, raw	39	Radish leaves, raw (radishes raw 0)	70
Watercress, raw	30	Elderberry, raw	27	Kale, raw	23
Okra, raw	21	Bee pollen	21	Onions, raw	20

Dietary Sources of Key Methylation Nutrients adapted from: USDA, [USDA National Nutrient Database for Standard Reference, Release 27 (revised)].*US Department of Agriculture, Agricultural Research Service, Nutrient Data Laboratory. 2015.

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Advanced Methylation Detoxification Profile

GENOMIC INSIGHTS™

Patient Information

Name: SAMPLE, PATIENT

Date of Birth: 6/13/2001

Gender: M

Lab ID:

999999

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Homocysteine (serum) : (µmol/L)

Age: 15

Reference Ranges*:

Normal (µmol/L)	Mildly Elevated (µmol/L)	Moderately Elevated (µmol/L)	Severely Elevated (µmol/L)
< 15	15 - 30	30 - 60	> 60

* The reference ranges represent a mean value based on recommendations in literature (see references).

Result Comment:

Elevated homocysteine levels are associated with coronary artery disease, stroke, aortic aneurym, atherosclerosis, deep vein thrombosis, schizophrenia, depression, dementia, autoimmune diseases, hypothyroidism, kidney diseases, and others.

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