FMD Logo

Summary of Results

Requisition #1518178
Patient NamePia Singh
Date of BirthDec 26, 1970
GenderF Age55
PractitionerDr. Dangs Lab
Collection Time08:30 AM
Collection DateJan 7, 2026
Sample TypeUrine
Report DateJan 21, 2026

Microbial Overgrowth

7Arabinose | **2**5-Hydroxymethyl-2-furoic | **4**Furan-2,5-dicarboxylic | **21**Oxalic

SIGNIFICANT MICROBIAL IMBALANCE

11A

Mitochondrial Health

No imbalances

3B

Neurotransmitter Metabolites

No imbalances

3C

Toxic Exposure

25-Hydroxymethyl-2-furoic | 4Furan-2,5-dicarboxylic | 9Tricarballylic | 58Pyroglutamic | 21Oxalic

SIGNIFICANT TOXIC EXPOSURE

9D

CH?

Methylation/Detoxification

58Pyroglutamic

MARGINAL IMBALANCE

7E

Nutrient Needs

52Pantothenic | 54Ascorbic | 21Oxalic | 48Suberic | 9Tricarballylic | 58Pyroglutamic | 10Hippuric

MARGINAL NUTRIENT NEEDS

2F

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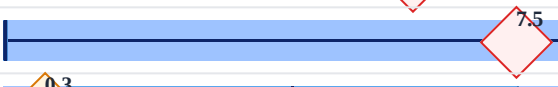
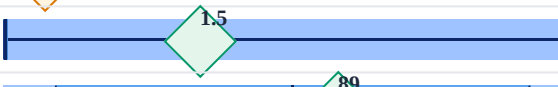
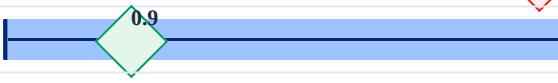
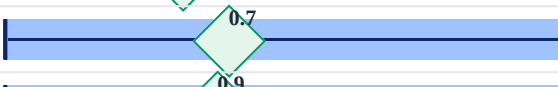
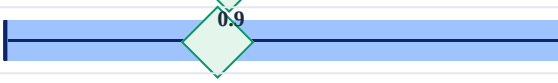
INTESTINAL MICROBIAL OVERGROWTH

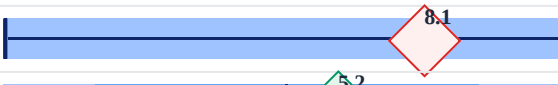
? Yeast & Fungal

1	Citramalic	?3.6	4.2 ?	
2	5-Hydroxymethyl-2-furoic	?1.9	1.2	
3	Furan-2,5-dicarboxylic	?2.1	3.0 ?	
4	Arabinose	?2.8	7.5 ?	
5	Carboxycitric	0.5-4.0	0.3 ?	
6	Tartaric	?2.2	1.5	
7	Citric	12-120	89	
8	Malic	0.8-8.5	11.2 ?	
9	Pyruvic	?2.0	0.9	

? Bacterial

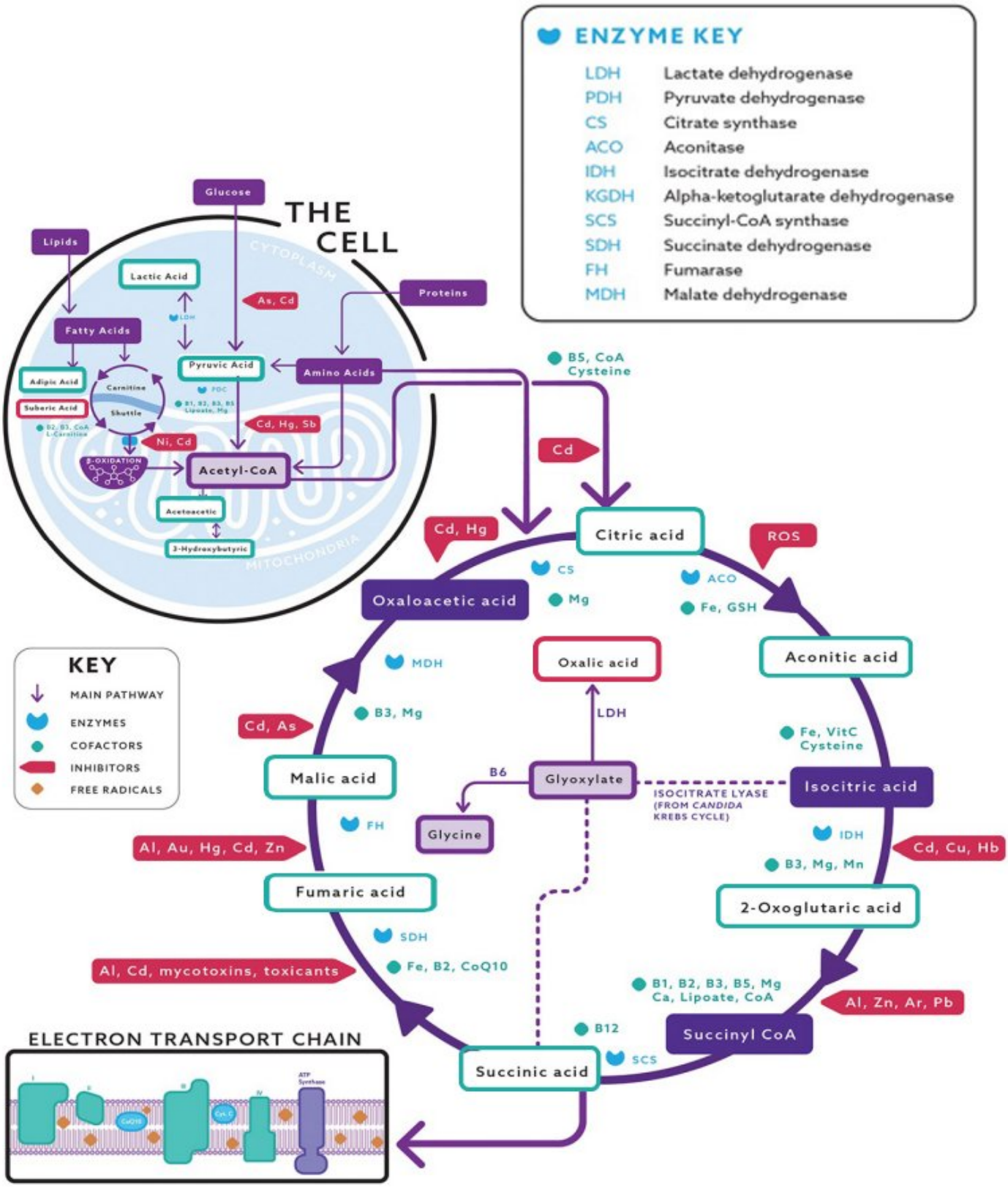
10	Benzoic	?2.0	3.4 ?	
11	Hippuric	40-350	280	
12	4-Hydroxybenzoic	?0.8	0.5	
13	3,4-Dihydroxybenzoic	?0.9	0.7	
14	3-Hydroxyhippuric	?1.2	0.9	

? Clostrida Bacterial

15	4-Cresol	?5.5	8.1 ?	
16	3-Indoleacetic	1.4-7.0	5.2	
17	Indole-3-propionic	?1.2	0.8	
18	Indole-3-lactic	?2.8	3.9 ?	

Mosaic Diagnostics|9221 Quivira Road, Overland Park, KS 66215|MosaicDX.com
Sean Agger PhD, MS, MBA, DABCC, DABMM, Lab Director|CLIA 17D0919496|

MEDICAL DIAGRAM



ORGANIC ACID METABOLITES (CONTINUED)

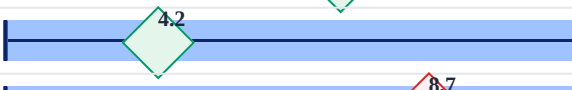
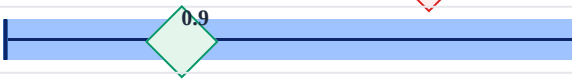
? OXALATE METABOLITES

19	Oxalic	10-60	82 ?	
20	Glyceric	?2.5	1.8	
21	Glycolic	5-35	28	

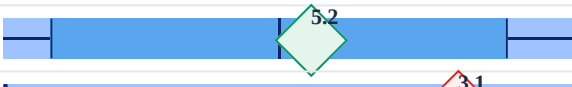
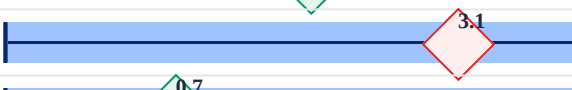
? GLYCOLYTIC METABOLITES

22	Pyruvic	?2.5	3.9 ?	
23	Lactic	?4.0	2.3	

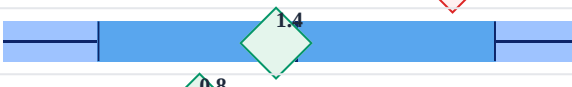
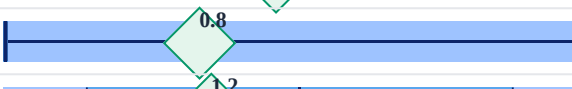
? MITOCHONDRIAL MARKERS

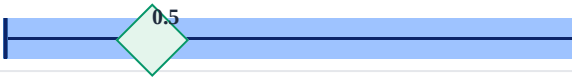
24	Citric	12-120	98	
25	cis-Aconitic	2-15	8	
26	Isocitric	3-25	16	
27	?-Ketoglutaric	?8	4.2	
28	Succinic	?6	8.7 ?	
29	Fumaric	?1.5	0.9	

? MITOCHONDRIAL MARKERS (cont.)

30	Malic	0.8-8.5	5.2	
31	Hydroxyglutaric	?2.0	3.1 ?	
32	Glutaric	?1.2	0.7	

? NEUROTRANSMITTER METABOLITES

33	Homovanillic (HVA)	2-12	7.5	
34	Vanillylmandelic (VMA)	1-8	4.2	
35	5-HIAA	1-9	5.1	
36	Quinolinic	?2.5	3.8 ?	
37	Kynurenic	0.5-2.5	1.4	
38	3-Hydroxykynurenine	?1.2	0.8	
39	Picolinic	0.5-2.8	1.2	

40	Xanthurenic	?1.0	**0.5**	

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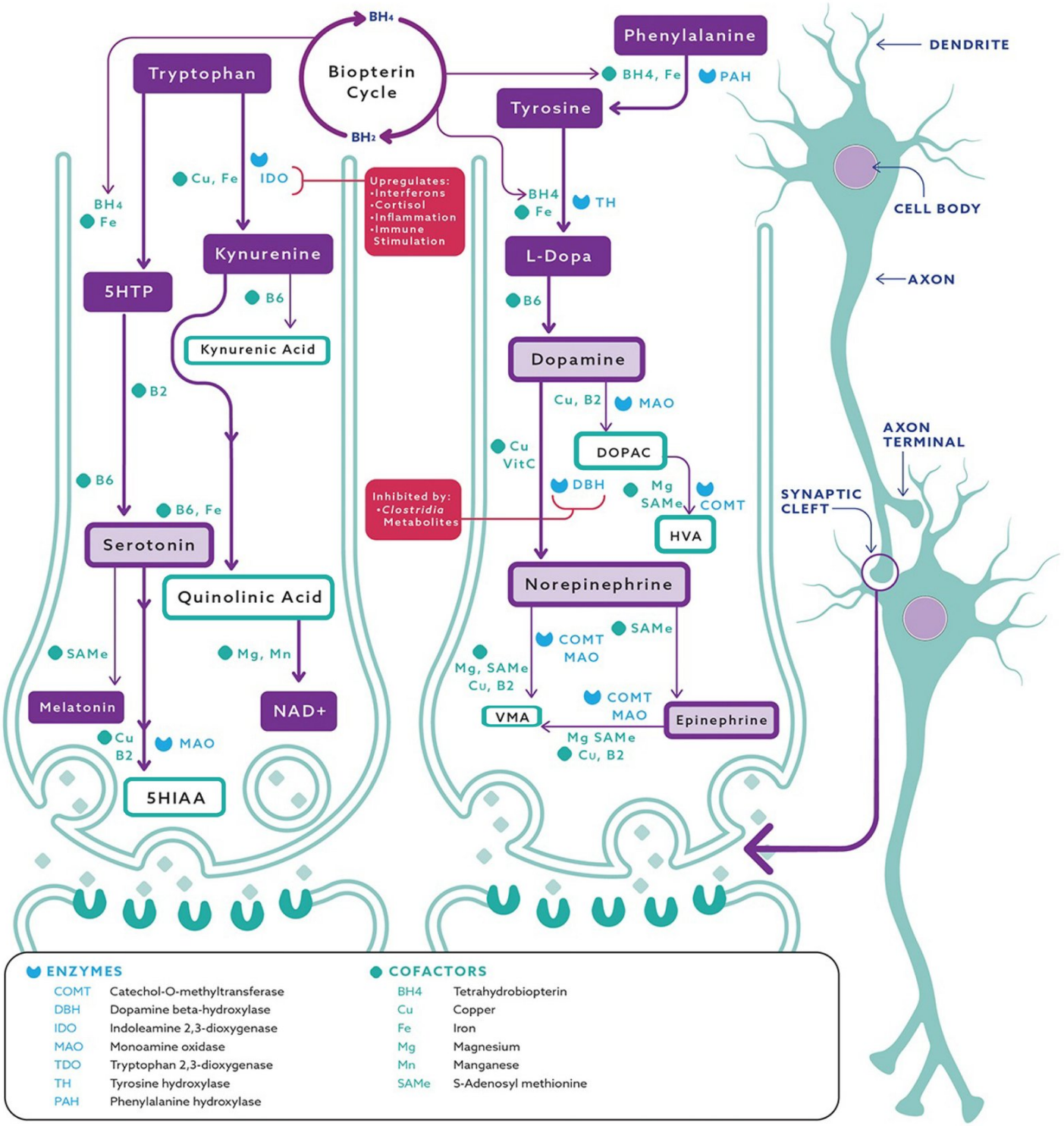
MEDICAL DIAGRAM


BH4
Biopterin Cycle
BH2
Tryptophan
Phenylalanine
BH4, Fe
PAH
Tyrosine
DENDRITE
CELL BODY
AXON
Cu, Fe
IDO
Upregulates:
•Interferons
•Cortisol
•Inflammation
•Immune Stimulation
BH4
Fe
TH
L-Dopa
Kynurenine
5HTP
B6
Kynurenic Acid
Dopamine
B2
Cu, B2
MAO
AXON TERMINAL
Cu
VitC
DOPAC
B6
DBH
Mg
SAMe
COMT
SYNAPTIC CLEFT
B6, Fe
Inhibited by:
•Clostridia Metabolites
HVA
Serotonin
Norepinephrine
Quinolinic Acid
SAMe
COMT
MAO
Mg, Mn
Mg, SAMe
Cu, B2
Melatonin
NAD+
VMA
Epinephrine
Cu
B2
MAO
Mg SAMe
Cu, B2
5HIAA
ENZYMES
COMT Catechol-O-methyltransferase
DBH Dopamine beta-hydroxylase
IDO Indoleamine 2,3-dioxygenase
MAO Monoamine oxidase
TDO Tryptophan 2,3-dioxygenase
TH Tyrosine hydroxylase
PAH Phenylalanine hydroxylase
COFACTORS
BH4 Tetrahydrobiopterin
Cu Copper
Fe Iron
Mg Magnesium
Mn Manganese
SAMe S-Adenosyl methionine

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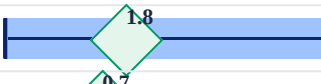
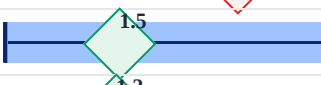
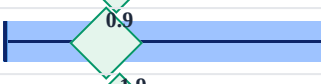
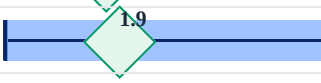
ORGANIC ACID METABOLITES (CONTINUED)

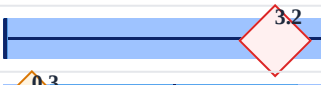
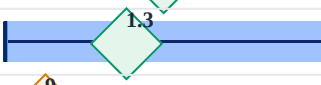
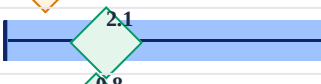
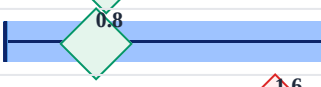
? PYRIMIDINE METABOLITES - FOLATE METABOLISM

41	Uracil	?2.5	1.8	
42	Thymine	?1.2	0.7	

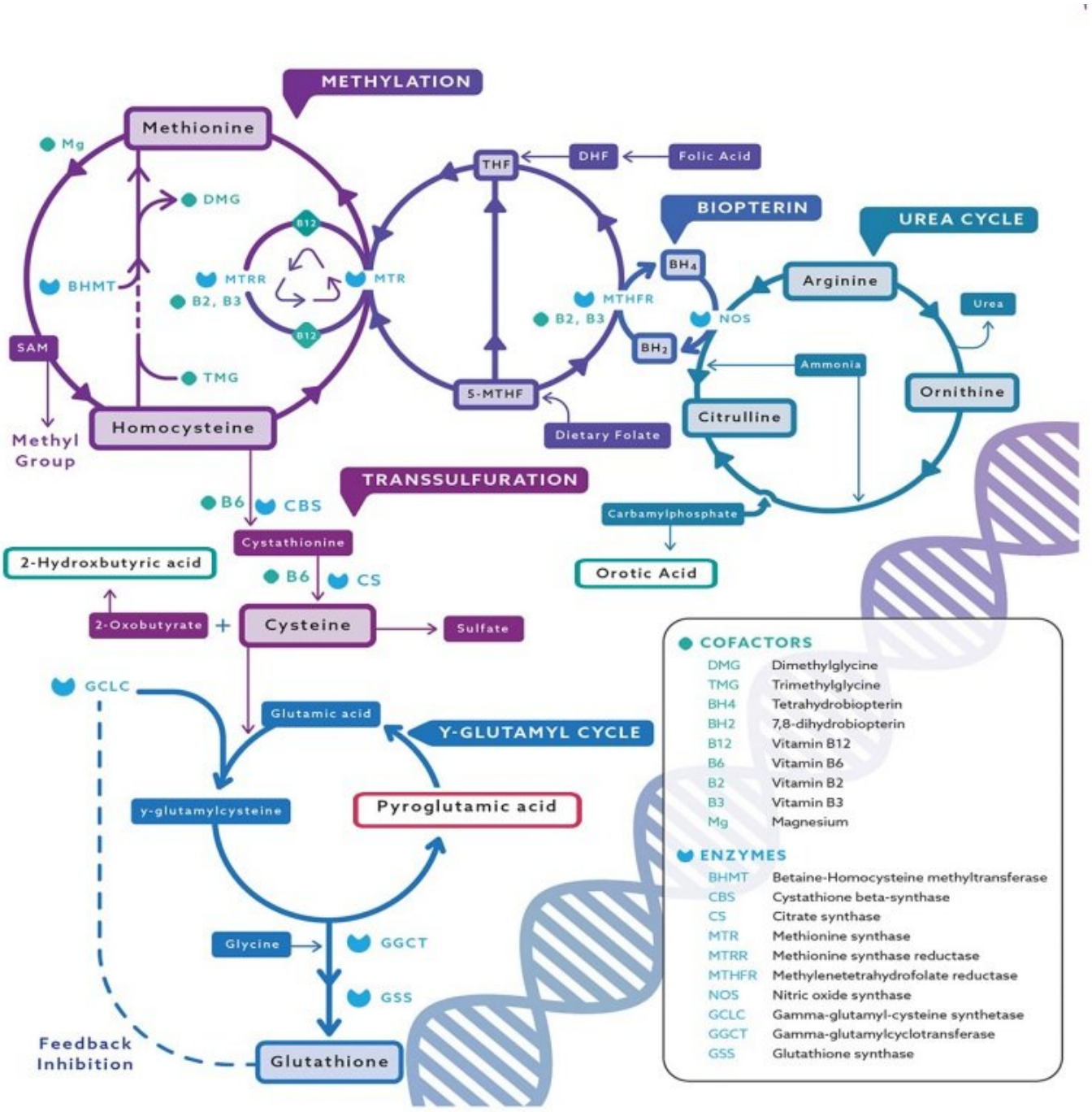
? KETONE AND FATTY ACID OXIDATION

43	3-Hydroxybutyric	?4.0	2.3	
44	Acetoacetic	?2.0	1.1	
45	Ethylmalonic	?3.5	4.8 ?	
46	Methylsuccinic	?2.2	1.5	
47	Glutaric	?1.8	1.2	
48	3-Methylglutaric	?1.5	0.9	
49	Adipic	?2.8	1.9	

? NUTRITIONAL MARKERS

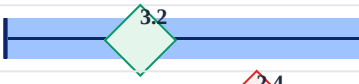
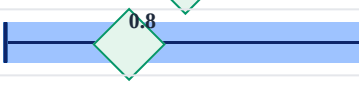
50	Methylmalonic (Vitamin B12)	?2.0	3.2 ?	
51	Pyridoxic (Vitamin B6)	0.5-3.0	0.3 ?	
52	Pantothenic (Vitamin B5)	2.5-12	6.8	
53	Glutaric (Vitamin B2)	?1.8	1.3	
54	Ascorbic (Vitamin C)	15-60	9 ?	
55	3-Hydroxy-3-methylglutaric (CoQ10)	?3.5	2.1	
56	N-Acetylcysteine (NAC)	?1.5	0.8	
57	Methylcitric (Biotin)	?1.0	1.6 ?	

MEDICAL DIAGRAM

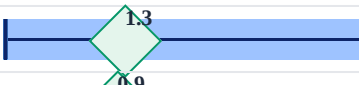
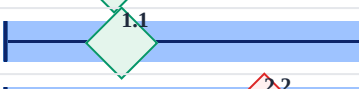
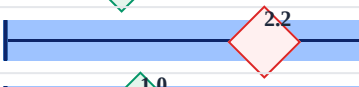
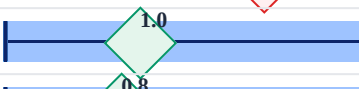
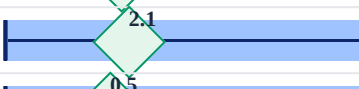


ADDITIONAL METABOLITE MARKERS

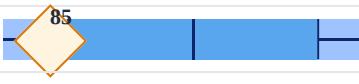
? INDICATORS OF DETOXIFICATION

58	Glucaric acid	?4.5	3.2	
59	Mandelic acid	?1.8	2.4 ?	
60	Phenylacetic acid	20-180	95	
61	2-Hydroxyhippuric	?1.2	0.8	

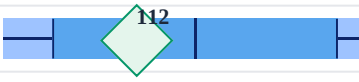
? AMINO ACID METABOLITES

62	2-Hydroxyisovaleric	?2.0	1.3	
63	2-Hydroxyisocaproic	?1.5	0.9	
64	2-Hydroxyvaleric	?1.2	0.7	
65	2-Oxoisovaleric	?1.8	1.1	
66	2-Oxoisocaproic	?1.6	2.2 ?	
67	2-Oxo-3-methylvaleric	?1.4	1.0	
68	3-Methyl-2-oxovaleric	?1.3	0.8	
69	4-Hydroxyphenylacetic	?3.2	2.1	
70	4-Hydroxybenzoic	?0.9	0.5	
71	3,4-Dihydroxyphenylacetic	?1.8	1.2	
72	Homovanillic acid	?2.4	1.8	
73	Vanillylmandelic acid	?2.8	2.1	
74	5-Hydroxyindoleacetic	?3.5	2.8	
75	Kynurenic acid	?2.0	1.4	

?? MINERAL METABOLISM

76	Citric acid	120-600	85 ?	

? INDICATOR OF FLUID INTAKE

77	Creatinine (urine)	40-280 mg/dL	112	

Organic Acids Test – Graph Explanation & Examples

Reference ranges are derived from a healthy population (age 13+). Results are displayed as mmol/mol creatinine. The graphical representation shows the patient's value relative to the reference population: the shaded band represents the optimal range. The diamond marker indicates the patient result. Interpretation follows standard laboratory rules: values above the upper limit are flagged as high (H) in red.

EXAMPLE OF VALUE WITHIN REFERENCE RANGE

METABOLITE
REFERENCE RANGE
RESULTS
REFERENCE POPULATION

INTESTINAL MICROBIAL OVERGROWTH

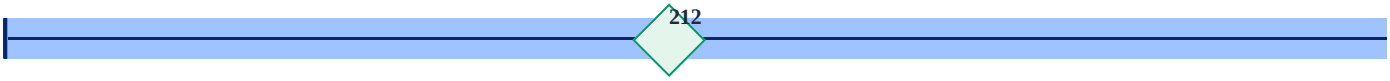
16

HPPHA

(C. sporogenes, C. botulinum & others)

? 219.9

212



EXAMPLE OF ELEVATED VALUE

INTESTINAL MICROBIAL OVERGROWTH

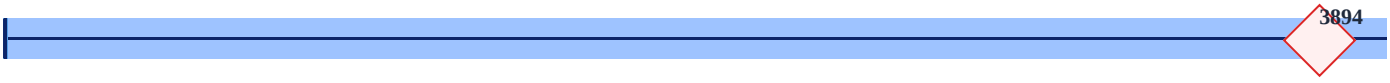
16

HPPHA

(C. sporogenes, C. botulinum & others)

? 219.9

H 3894



? Organic acids quantified by LC-MS/MS. Reference population: females 13+. Shaded band represents optimal range. Diamond = patient result. Red = high.