Adrenal Hormone Report

Order: SAMPLE REPORT
Client #: 12345
Doctor: Sample Doctor
Doctor's Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

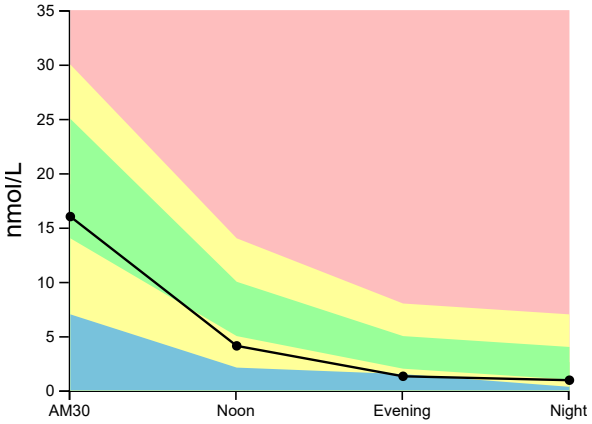
Patient: Sample Patient
Age: 50
Sex: Male

Menopausal Status: Post-menopausal

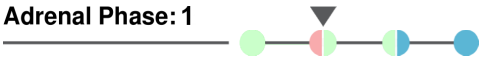
Sample Collection	Date/Time
Date Collected	03/02/2022
AM30	03/02/2022 06:50
Noon	03/02/2022 12:50
Evening	03/02/2022 18:00
Night	03/02/2022 21:30
Date Received	03/03/2022
Date Reported	03/04/2022

Analyte	Result	Unit	L	WRI	H	Optimal Range	Reference Interval
Cortisol AM30	16	nmol/L		◆		14.0 – 25.0	7.0 – 30.0
Cortisol Noon	4.1	nmol/L		◆		5.0 – 10.0	2.1 – 14.0
Cortisol Evening	1.3	nmol/L	↓			2.0 – 5.0	1.5 – 8.0
Cortisol Night	0.94	nmol/L		◆		1.0 – 4.0	0.33 – 7.0
DHEA*	53	pg/mL	↓				137 – 336

Cortisol Graph



Adrenal Phase: 1



Hormone Comments

- AM cortisol level appears adequate, although the suboptimal diurnal cortisol pattern is suggestive of early (Phase 1) HPA axis (adrenal gland) dysfunction.
- DHEA levels typically decline with age and the level measured here is below the reference range. Note: Supplementation with DHEA may increase testosterone and/or estradiol levels.

Notes:
The current samples are routinely held three weeks from receipt for additional testing.
RI= Reference Interval, L (blue)= Low (below RI), WRI (green)= Within RI (optimal), WRI (yellow)= Within RI (not optimal), H (red)= High (above RI)
*This test was developed and its performance characteristics determined by Doctor's Data Laboratories in a manner consistent with CLIA requirements. The U. S. Food and Drug Administration (FDA) has not approved or cleared this test; however, FDA clearance is not currently required for clinical use. The results are not intended to be used as a sole means for clinical diagnosis or patient management decisions.
Methodology: Enzyme Immunoassay

Hormone Report

Order: SAMPLE REPORT
Client #: 12345
Doctor: Sample Doctor
Doctor's Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

Patient: Sample Patient
Age: 50
Sex: Male

Menopausal Status: Post-menopausal

Sample Collection	Date/Time
Date Collected	03/02/2022
AM30	03/02/2022 06:50
Noon	03/02/2022 12:50
Evening	03/02/2022 18:00
Night	03/02/2022 21:30
Date Received	03/03/2022
Date Reported	03/04/2022

Analyte	Result	Unit	L	WRI	H	Reference Interval	Supplementation Range**
Estradiol (E2)	2.2	pg/mL		◆		< 2.5	
Progesterone (Pg)	1630	pg/mL			↑	< 130	130 – 2000
Pg/E2 Ratio†	741						≥ 130
Testosterone	13	pg/mL	↓			30 – 155	95 – 800
DHEA*	53	pg/mL	↓			137 – 336	

Hormone Comments

- In males, the Pg/E2 ratio is a clinical ratio, not a physiological ratio. Thus, the Pg/E2 ratio only has a supplementation range. In males supplementing with progesterone, the Pg/E2 ratio provides a target to minimize risk of prostate gland enlargement and cancer.
- The progesterone level is consistent with supplementation (not reported) or exogenous exposure.
- Low testosterone may be associated with metabolic syndrome (insulin resistance). Serum vitamin D, hemoglobin A1c and insulin levels may be warranted. Boosting the testosterone level is a consideration depending on the clinical picture.
- DHEA levels typically decline with age and the level measured here is below the reference range. Note: Supplementation with DHEA may increase testosterone and/or estradiol levels.
- Supplementation reference ranges are based on adherence to proper dosage interval(s). Please visit https://www.DoctorsData.com/Resources/BestPractices.pdf for more information.

Notes:
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†The Pg/E2 ratio is an optimal range established based on clinical observation. Reference intervals for Pg/E2 ratio have not been established in males and post-menopausal women who are not supplementing with progesterone and/or estrogens.
**If supplementation is reported then the supplementation ranges will be graphed. The supplementation ranges depicted are for informational purposes only and were derived from a cohort of adult men and women utilizing physiologic transdermal bioidentical hormone therapy.
Methodology: Enzyme Immunoassay

Neuro Basic Profile; urine

Order: SAMPLE REPORT
Test: U123456-7890
Client #: 12345
Doctor: Sample Doctor
Doctor's Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

Patient: Sample Patient
Age: 50
Sex: Female
Body Mass Index (BMI): 20.0

Sample Collection	Date/Time
Date Collected	03/02/2022
Wake Up Time	07:30
Collection Period	1st morning void
Date Received	03/03/2022
Date Reported	03/04/2022

Analyte	Result	Unit per Creatinine	L	WRI	H	Reference Interval
Serotonin	132	µg/g				60 – 125
Dopamine	251	µg/g				125 – 250
Norepinephrine	14.6	µg/g				22 – 50
Epinephrine	0.9	µg/g				1.6 – 8.3
Norepinephrine / Epinephrine ratio	16.2					< 13
Glutamate	41	nmol/g				12.0 – 45.0
Gamma-aminobutyrate (GABA)	6	nmol/g				2.0 – 5.6
Glycine	960	nmol/g				450 – 2200
Histamine	12	µg/g				14 – 44
Phenethylamine (PEA)	30	nmol/g				32 – 84
Creatinine	81.0	mg/dL				30 – 225

Neurotransmitter Comments:

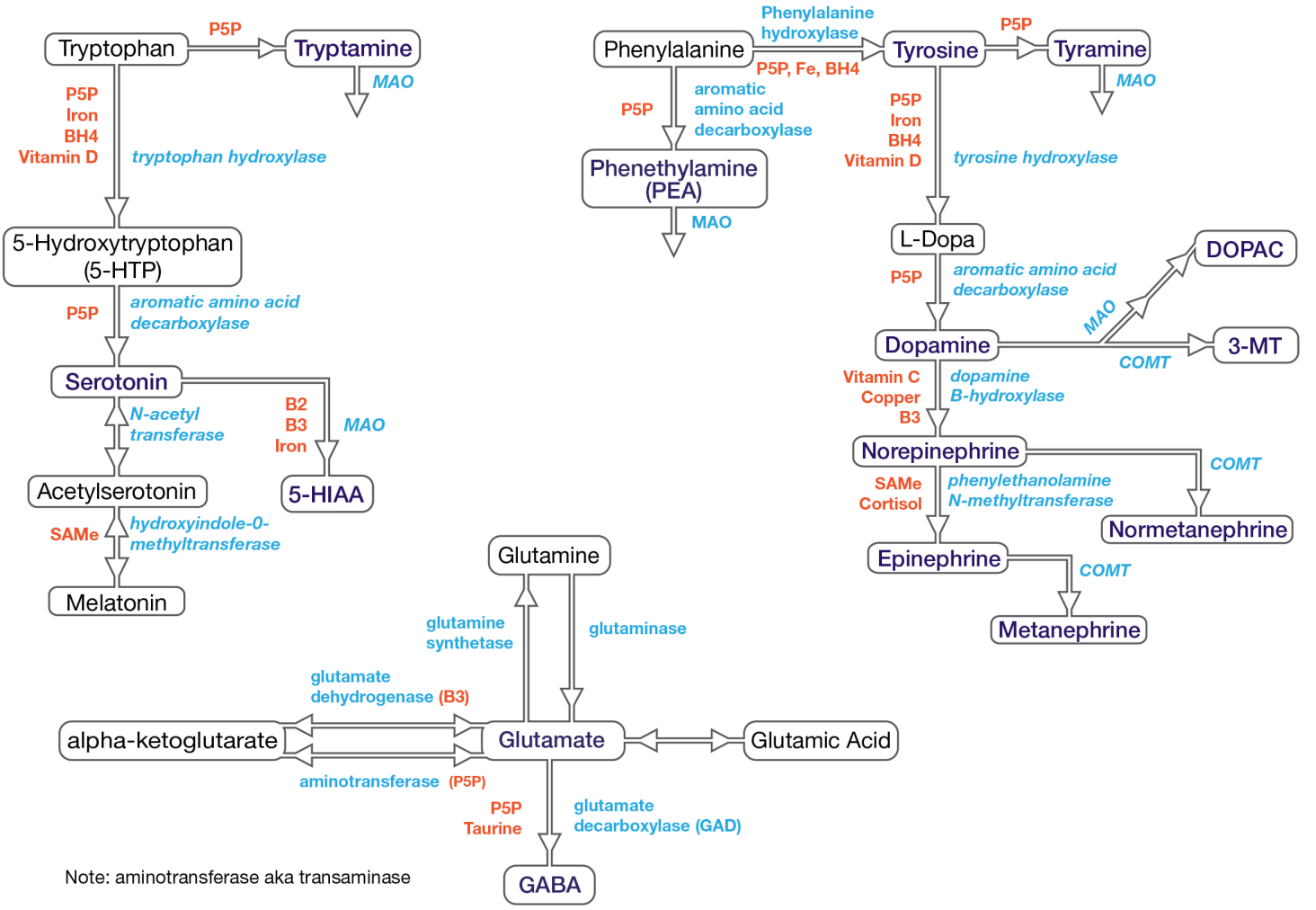
- Urinary neurotransmitter levels provide an overall assessment of the body's ability to make and break down neurotransmitters and are representative of whole body levels. Neurotransmitters are secreted all through the body, in neurons of both the central and peripheral nervous systems. The enzymes, cofactors and precursors in neurotransmitter metabolism in general are the same in the periphery and in the central nervous system. Therefore, alterations in urinary neurotransmitter levels assessed in urine provide important clinical information, and may be associated with many symptoms including cognitive and mood concerns, diminished drive, fatigue and sleep difficulties, cravings, addictions and pain.
- Elevated serotonin may be associated with symptoms of, increased anxiety, agitation and diarrhea (IBS-like symptoms). Serotonin levels may be increased by low protein or high-carbohydrate meals, insulin, and tryptophan or 5-HTP supplementation. Many mood altering medications, including SSRIs and SNRIs, may influence serotonin levels. L-theanine may affect serotonin function.
- Elevated dopamine may be associated with increased worry, distrust of others and decreased ability to interact socially and is often found in patients with attention deficits and hyperactivity. Medications that may increase dopamine levels include L-dopa, methyldopa, select antidepressants and some ADD/ADHD medications. L-theanine may modulate catecholamine effects. Metabolism requires vitamins B2, B3, SAMe, magnesium, and iron, while conversion to norepinephrine requires vitamin C, copper and vitamin B3.
- Low norepinephrine and low epinephrine may be associated with depression and mood changes as well as fatigue, difficulty concentrating, decreased ability to stay focused on tasks and diminished sense of personal/professional drive. Norepinephrine is converted from dopamine requiring vitamin C, copper and niacin (B3). L-tyrosine, L-theanine and Mucuna pruriens influence this pathway.
- Elevated N/E ratio is consistent with poor conversion of norepinephrine to epinephrine. This conversion is driven by the phenylethanolamine N-methyltransferase (PNMT) enzyme that requires SAMe, magnesium and cortisol (adequate HPA axis function) as cofactors. Suggest interpretation in context of cortisol levels/HPA axis function, with subsequent optimization of HPA axis function when clinically warranted.
- Upper range glutamate may contribute to anxiety, poor concentration, attention deficits and hyperactive tendencies as well as poor sleep and nighttime awakening. Glutamate may be increased in association with hypoglycemia, Alzheimer's, ALS and chronic compromised blood flow to the brain. Possible sources of increased glutamate include MSG, yeast extract and other hidden sources of free glutamic acid. L-theanine may modulate elevated glutamate levels and attenuate glutamate signaling, and taurine may provide protection from excitotoxicity and neuroinflammation.
- Elevated GABA may contribute to difficulty concentrating, diminished memory, dampened mood and decreased cognitive processing as well as fatigue, decreased exercise endurance, sleepiness and an inability to feel alert. Elevated GABA levels may be compensatory in the presence of elevated excitatory neurotransmitters, and may result with gabapentin use. L-theanine may modulate the effects of elevated GABA levels. Elevated GABA levels may be associated with bacterial overgrowth (i.e. urinary tract infection or gastrointestinal dysbiosis).

Notes:
Results are creatinine corrected to account for urine dilution variations. Creatinine is not meant to be used as an indicator of renal function.
RI= Reference Interval, L (blue)= Low (below RI), WRI (green)= Within RI (optimal), WRI (yellow)= Within RI (not optimal), H (red)= High (above RI)
Methodology: LCMS QQQ, Creatinine by Jaffe Reaction

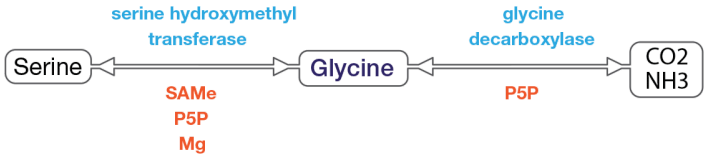
- Low histamine may affect digestion and appetite control, learning, memory, and mood, and may result in drowsiness. Histamine has been noted to modulate neurotransmitter release from neurons. Histamine levels may be supported by consumption of high-protein foods and whole grains, as well as L-histidine supplementation. Vitamin B6 is a cofactor for histamine synthesis.
- Low phenethylamine (PEA) may be associated with depression, attention deficits and hyperactivity (ADHD), Parkinson's disease and bipolar disorder. Phenylalanine is the precursor amino acid to PEA, and vitamin B6 is a required co-factor in the conversion to this primary trace amine. Use of Reserpine can result in depletion of PEA.
- Considerations to address the demonstrated imbalances beyond the identified co-factors and amino acid precursors may include dosage adjustments if indicated, as well as nervine and adaptogenic herbs, methylation support, vitamin D, and gastrointestinal health optimization.

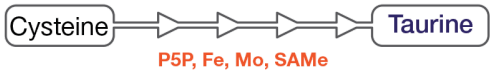
Analyzed by DOCTOR'S DATA, INC. • 3755 Illinois Avenue, St. Charles, IL 60174-2420 USA • LAB DIR: Erlo Roth, MD • CLIA ID: 14D0646470

Neurotransmitter Pathways



"glycine cleavage system"





KEY

MAO = monoamine oxidase
Cofactors for *MAO*: **B2, B3, P5P, Fe, Mg**
COMT = catechol-o-methyl-transferase
Cofactors for *COMT*: **SAMe, Mg**
P5P = (pyridoxal-5-phosphate) activated form of vitamin B6
BH4 = (tetrahydrobiopterin)
Endogenous levels can be supported with SAMe, vitamin B3, C, Mo, Zn
MTHF = (methyltetrahydrofolate) active form of folate.
SAMe = endogenous levels can be supported with Mg, MTHF, and methylcobalamin supplementation.

Cofactors = Enzymes =