RENEW
WELLNESS

Comprehensive Functional Medicine Lab Testing

- Hormones
- Adrenals
- Neurotransmitters

Dr. Helene Pulnik ND
The Weight Loss & Food Cravings Expert

Adrenal Hormone Report; saliva

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

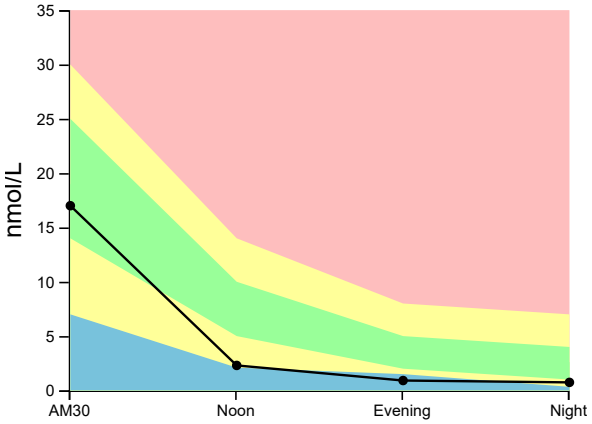
Patient: Sample Patient
Id: P9999999999
Age: 54 **DOB:** 01/01/1964
Sex: Female
Body Mass Index (BMI): 26.1

Menopausal Status: Post-menopausal

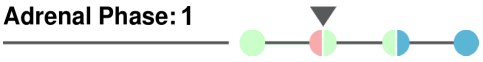
Sample Collection	Date/Time
Date Collected	10/03/2019
AM30	10/03/2019 05:11
Noon	10/03/2019 11:59
Evening	10/03/2019 17:00
Night	10/03/2019 20:30
Date Received	10/07/2019
Date Reported	10/11/2019

Analyte	Result	Unit	L	WRI	H	Optimal Range	Reference Interval
Cortisol AM30	17	nmol/L		◆		14.0 – 25.0	7.0 – 30.0
Cortisol Noon	2.3	nmol/L		◆		5.0 – 10.0	2.1 – 14.0
Cortisol Evening	0.91	nmol/L	↓			2.0 – 5.0	1.5 – 8.0
Cortisol Night	0.74	nmol/L		◆		1.0 – 4.0	0.33 – 7.0
DHEA*	85	pg/mL	↓				106 – 300

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:
RI= Reference Interval, L (blue)= Low (below RI), WRI (green)= Within RI (optimal), WRI (yellow)= Within RI (not optimal), H (red)= High (above RI)
The current samples are routinely held three weeks from receipt for additional testing.

*This test was developed and its performance characteristics determined by Doctor's Data, Inc. The FDA has not approved or cleared this test; however, FDA clearance or approval is not currently required for clinical use. The results are not intended to be used as the sole means for clinical diagnosis or patient management decisions.

Methodology: Enzyme Immunoassay

Hormone Report; saliva

LABRIX By DOCTOR'S DATA

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

Patient: Sample Patient
Id: P9999999999
Age: 54 **DOB:** 01/01/1964
Sex: Female
Body Mass Index (BMI): 26.1

Menopausal Status: Post-menopausal

Sample Collection	Date/Time
Date Collected	10/03/2019
AM30	10/03/2019 05:11
Noon	10/03/2019 11:59
Evening	10/03/2019 17:00
Night	10/03/2019 20:30
Date Received	10/07/2019
Date Reported	10/11/2019

Analyte	Result	Unit	L	WRI	H	Reference Interval	Supplementation Range**
Estrone (E1)*	32.8	pg/mL		◆		< 35	
Estradiol (E2)	0.60	pg/mL		◆		0.5 – 3.2	1.0 – 6.0
Estriol (E3)*	<5.0	pg/mL	↓			7.5 – 66	45 – 680
EQ (E3 / (E1 + E2)) Ratio	0.15		↓			≥ 1.0	
Progesterone (Pg)	30	pg/mL		◆		18 – 130	400 – 4000
Pg/E2 Ratio†	50.0						≥ 200
Testosterone	13	pg/mL		◆		6 – 49	25 – 60
DHEA*	85	pg/mL	↓			106 – 300	

Hormone Comments:

- Estrone and estradiol are within the reference ranges, however the Estrogen Quotient (EQ) is low. Estriol is less potent than the other estrogens and when present in sufficient quantities (as indicated by an optimal EQ) it plays an antagonistic role, and may govern the proliferative effects of estrone and estradiol. Estriol supplementation is a consideration to balance this quotient and reduce associated risks.
- A lack of ovulation in menopause results in a state of progesterone insufficiency. An in range Pg/E2 ratio in this stage is only attainable with progesterone supplementation. Progesterone supplementation is a consideration to benefit breast tissue, mood, cognition, cardiovascular and bone health.
- 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:
Estriol result confirmed via repeat analysis.
RI= Reference Interval, L (blue)= Low (below RI), WRI (green)= Within RI (optimal), WRI (yellow)= Within RI (not optimal), H (red)= High (above RI)
The current samples are routinely held three weeks from receipt for additional testing.

†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.

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**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

LABRIX By DOCTOR'S DATA

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Doctor: Sample Doctor
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3755 Illinois Ave.
St. Charles, IL 60174 USA

Patient: Sample Patient
Id: P9999999999
Age: 54 **DOB:** 01/01/1964
Sex: Female
Body Mass Index (BMI): 26.1

Sample Collection	Date/Time
Date Collected	10/03/2019
Wake Up Time	04:41
Collection Period	1st morning void
Date Received	10/07/2019
Date Reported	10/11/2019

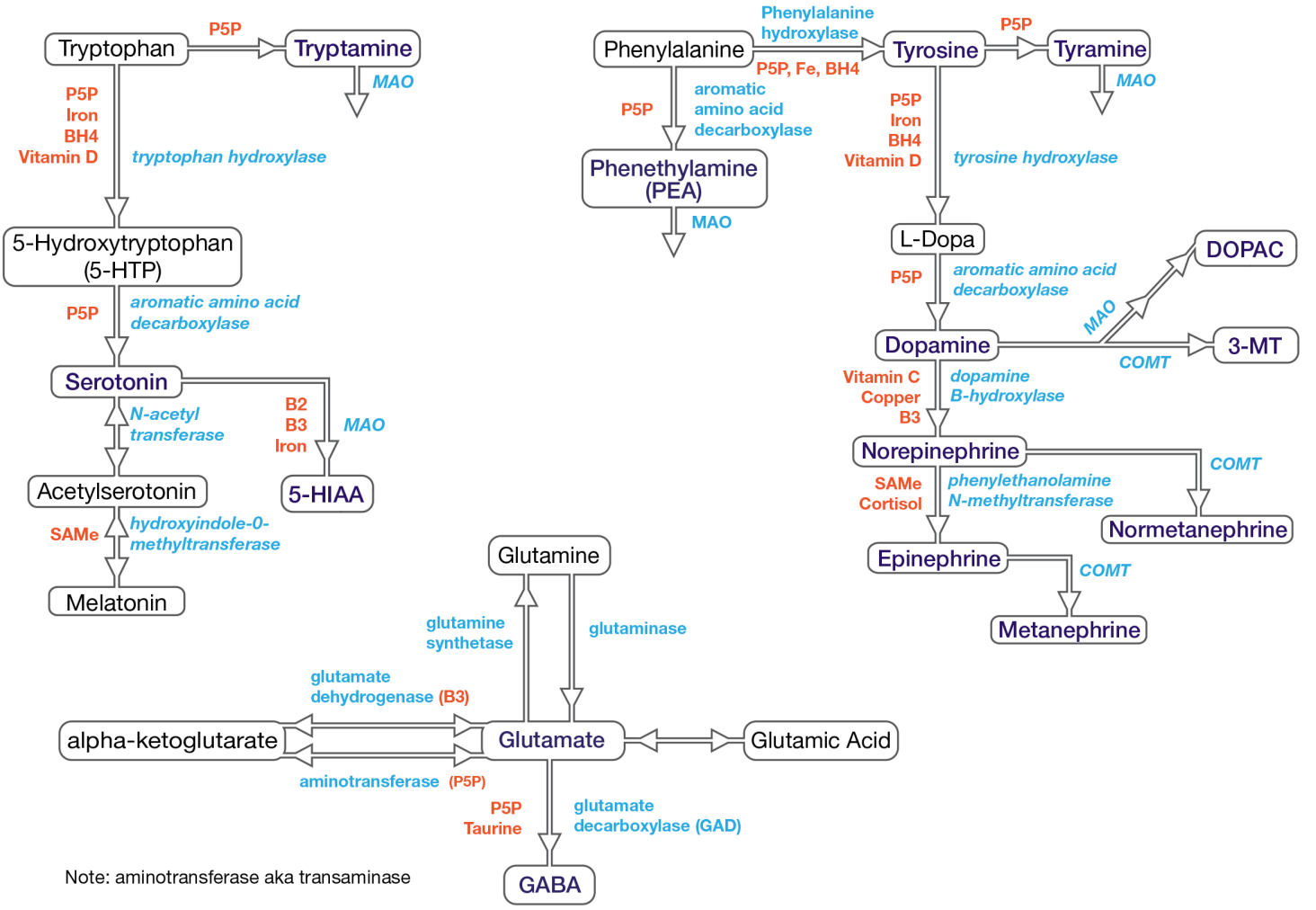
Analyte	Result	Unit per Creatinine	L WRI H	Reference Interval
Serotonin	90.7	µg/g		60 – 125
Dopamine	190	µg/g		125 – 250
Norepinephrine	14.6	µg/g		22 – 50
Epinephrine	0.9	µg/g		1.6 – 8.3
Norepinephrine / Epinephrine ratio	16.2			< 13
Glutamate	15	µmol/g		12.0 – 45.0
Gamma-aminobutyrate (GABA)	6.0	µmol/g		2.0 – 5.6
Glycine	974	µmol/g		450 – 2200
Histamine	12	µg/g		14 – 44
Phenethylamine (PEA)	38	nmol/g		32 – 84
Creatinine	72.3	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.
- 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.
- 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).
- 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.
- 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.

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

Neurotransmitter Pathways



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 = ■