



Date of Birth: 08-Jan-1985  
 Sex: M  
 Collected: 31/Oct/2019  
 Received: 31/Oct/2019  
 INTERNATIONAL PATIENT 1000  
 Lab id: **3640442** UR#:

International  
 Psychology Centre 11-  
 1 Wisma Laxton Jalan  
 Desa KUALA LUMPUR  
 MALAYSIA 58100 1000

## INTEGRATIVE MEDICINE

URINE, SPOT	Result	Range	Units	
<b>EXTENSIVE NEUROTRANSMITTER PROFILE</b>				
<b>Inhibitory Neurotransmitters</b>				
SEROTONIN Urine	91.5	50.0 - 250.0	ug/gCR	
GABA, Urine	247.3	150.0 - 700.0	ug/gCR	
<b>Excitatory Neurotransmitters</b>				
DOPAMINE, Urine	145.2	100.0 - 350.0	ug/gCR	
NORADRENALIN (Nor-Epinephrine)	29.8	13.0 - 70.0	ug/gCR	
ADRENALIN (Epinephrine)	16.0	3.0 - 20.0	ug/gCR	
GLUTAMATE Urine	2.1	2.0 - 12.0	ug/gCR	
<b>Adrenal Adaptation Index</b>				
Noradrenalin/Adrenalin Ratio	1.9	< 10.0	RATIO	
<b>Optimal Ranges Table</b>				

Biomarker	Optimal Range	
Serotonin	200 - 415	ug/gCr
GABA	600 - 1100	ug/gCr
DOPAMINE	250 - 400	ug/gCr
Noradrenalin	30 - 50	ug/gCr
Adrenalin	10 - 15	ug/gCr
Glutamate	5 - 10	ug/gCr

There are multiple factors that play roles in neurotransmitter levels (Lifestyle, receptors, meds, supplements, diet, stress, etc). The optimal reference ranges stated above have been determined/derived statistically from Neurolab historical patient data. Historically, these levels were achieved in the majority of patients as they experienced symptom relief or improvement.



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## COMMUNICATION SYSTEM MODEL (CSM)

### THE CSM AND YOUR PATIENT

The Communication System Management Model is designed to give you an analysis of neurotransmitter and adrenal hormone values and an observation of how they affect one another. This approach targets the underlying cause of chronic symptoms by addressing the root imbalance. In the next section, we will observe trends in the lab values, correlating those with the symptoms that were marked by the patient.

Supporting serotonin and GABA synthesis and function is recommended to address the patient's feelings of mild anxiety. Further, a mild inositol formula is included as some patients respond positively to inositol for mild anxiety. Large doses of inositol may be necessary for addressing OCD behavior. Additionally, adequate excitatory catecholamines as well as serotonin should prove beneficial for balancing inhibitory/excitatory function in cases of OCD behavior. Retesting is encouraged to monitor patient response.

### ADRENAL INFLUENCES

The patient reports feelings of mild anxiety; an adrenal assessment is warranted to determine if cortisol surges are contributing to these feelings.

### INHIBITORY NEUROTRANSMITTERS

Patient indicated symptoms of mild ANXIETY, which may be the result of low/low-normal levels of the inhibitory neurotransmitters serotonin and GABA, and/or the elevation of one or more excitatory neurotransmitters/hormones (glutamate, norepinephrine, epinephrine, cortisol). As GABA is the primary inhibitory neurotransmitter, it can be thought of as "the great balancer" of the nervous system. Also, serotonin often functions as a modulator of GABA activity. However, depletion of GABA alone may cause anxiety, even when serotonin is within normal range and despite high levels showing up in the urine; GABA should be supported. Low/low normal serotonin and high GABA on the initial test can also be seen, which may be the result of the nervous system trying to compensate for the low serotonin. GABA will "stand in the gap" to make up for a low/low normal serotonin. In cases of high levels of norepinephrine and/or epinephrine, cortisol and/or glutamate, GABA may also be seen to make a compensatory rise to balance out the high excitatory neurotransmitters/hormones. In these cases, serotonin is often also low. Upon retesting, GABA levels will frequently be normal and even low, despite aggressive support. Research indicates that inositol supplementation may be beneficial for those suffering from anxiety, especially acute anxiety and panic disorders. Avoid supporting excitatory neurotransmitter function before restoring serotonin and GABA levels.

### EXCITATORY NEUROTRANSMITTERS

Patient checked OBSESSIVE/COMPULSIVE behavior on the questionnaire. OCD is characterized by recurrent, unwanted thoughts, and/or repetitive behaviors with concomitant anxiety and distress. OCD symptoms can worsen with stress indicating a thorough investigation of adrenal gland dysfunction and possible stressors. While the exact mechanisms of the disorder are unknown, studies indicate that serotonin and dopamine may play a role in OCD. Other research indicates elevated CSF glutamate levels in OCD patients. Alterations in the cerebral serotonin receptor system have been linked to patients with OCD, and low availability of dopamines D2 receptor in people with the disorder suggests that this catecholamine may be involved as well. Seventy-eight percent (78%) of patients who ranked OCD as being moderate to severe had low to low normal dopamine and serotonin levels.



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Supporting serotonin and dopamine levels and function may be warranted. For some OCD patients, inositol has proven to be beneficial, even in conjunction with SSRI medications.



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## Summary/Recommendations

Patient is in: Initial Phase

The following therapeutic protocol is based on conclusions derived from patient lab results, clinical data, gender, age, etc, and symptoms listed on the patient questionnaire. The goal of this protocol is to help the doctor begin the three-phase process of restoring balance in the HPA-T axis, while also improving symptoms for patient optimum well-being. The Initial Phase is the beginning of the patients rebuilding process, where TNT is introduced to help move lab values in the right direction. Leaving the patient on the Initial protocol longer than necessary may unbalance the patient. Retesting initiates the Restoration Phase. It provides significant two-fold value in that it serves as a guide in adjusting or fine-tuning the therapy. In addition, it allows for monitoring of progress as the patient rebalances their signaling biochemicals on the path toward optimum well-being.

### OVERALL SUMMARY and RECOMMENDATIONS:

**Prolent** x 1 capsule in the PM; may increase to 2 capsules daily after 5 days  
Contains: 5HTP, Suntheanine, glycine, and B6

**Lentra** x 1 capsule daily for GABA support  
Contains: GABA-A agonists: Magnesium Taurate, Suntheanine, and Lactium

**Tranquilent** x 1-2 chewable tablets as needed for anxiety/OCD  
Contains: low doses of 5HTP and suntheanine, with Myo-Inositol

**Procite-D** After 14 - 21 days, as anxiety improves, may add x 1 in the AM  
for dopamine support  
Contains: Mucuna pruriens, N-acetyl-L-tyrosine, DL-phenylalanine, NAC  
and B vitamins.

The above supplementation range is available to practitioners through Nutrisearch NZ.  
Australian Freephone: 1800 177 959  
New Zealand Freephone: 0800 88 44 33  
Email: info@nutrisearch.co.nz

Retesting is an important part of this process. NT levels need to be monitored.  
Retesting for this patient is recommended in 9 weeks.

### Additional Recommendations

\* It is recommended that all patients on a program to balance HPA axis function should also supplement with B complex, a multi-mineral and multi-vitamin as well as EPA/DHA.

### Disclaimers

\* These products are not intended to diagnose, treat, cure, or prevent any disease.  
\*The statements above are recommendations to the clinician. All final therapeutic decisions are the responsibility of the treating physician.  
\* Please call Nutripath on 1300 688 522 with your technical and clinical questions.  
For further reading and references, please refer to Nutripath's Technical guide and Clinical guide.



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## Neuroendocrine Comments

### CORTISOL

To downregulate Cortisol (If Cortisol is High): Phosphatidyl Serine, DHEA, Choline, Inositol, Adaptogenic Herbs e.g. Siberian Ginseng, Withania, Vit C, Magnesium, Vit B

To upregulate Cortisol (If Cortisol is low): Adaptogens e.g. Ginseng, Withania, assess and balance hormone imbalance, insulin sensitivity, hydrocortisone, DHEA, Magnesium, Vit B, Assess and correct hormonal balance, insulin sensitivity

### DHEA

DHEA, Adaptogen e.g. Siberian Ginseng, Withania, and adrenal support e.g. ginseng, Activated B3

### Methyl Cofactors

Vit B6, Activated B6, SAME, Methionine, Folinic Acid, TMG, DMG

### Melatonin

Melatonin, passionflower, Hops, Adenosine, Kava

Based on your test results, your practitioner will advise upon natural supplementation of specific formulary.

### SEROTONIN (Inhibitory Neurotransmitter) LEVELS WITHIN RANGE:

Serotonin levels may be within range, however, if the patient is exhibiting symptoms you may wish to consider that the reported reference range is not optimal for this patient. Optimal Serotonin levels are levels at which serotonin can effectively counterbalance elevated excitatory neurotransmitters (esp Dopamine and Norepinephrine). Even if Serotonin is above the observed reference range but is not proportional to (or able to control) elevations in the catecholamines, then more Serotonin support is needed.

### GABA (Inhibitory Neurotransmitter) LEVELS NORMAL:

GABA levels may be within normal range, however, if the patient symptoms of anxiety and insomnia, consider that the normal reference range is not optimal for this individual. Biochemical individuality is no more evident than in the CNS. For this reason, clinical observation must be valued as a primary aspect of treatment.

**Creatinine, Urine Spot.**

**1.9 \*L** 5.0 - 13.0

mmol/L

