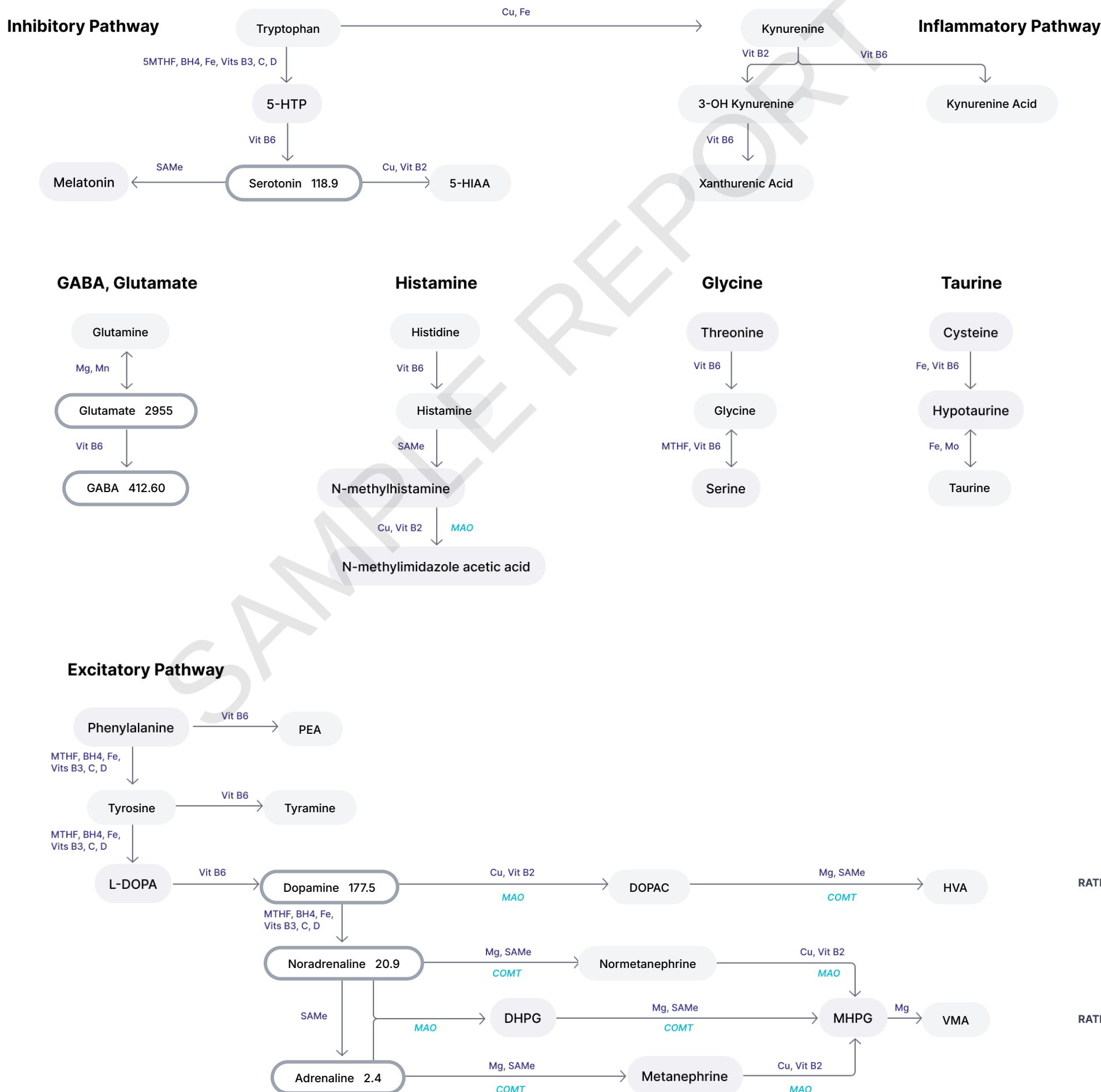


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Collected
29-Apr-26 08:36am

Legend Not Tested Within Range Out of Range L = Low, LL = Critically Low H = High, HH = Critically High Regulator Enzyme



Order ID	6679561
Lab ID	4223479
Patient ID	P044091
Ext ID	26120-0154

NICHOLAS ROSS
Sex: Male • 47yrs • 20-Jul-78
20 CONVENT COURT, COBURG NORTH VIC 3058

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INHIBITORY NEUROTRANSMITTERS

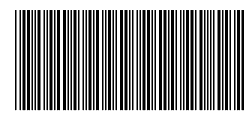
TEST	RESULT	H/L		REFERENCE	UNITS
Serotonin	118.9			(47.6-140.3)	ug/gCR
GABA	412.60			(167.00-463.00)	ug/gCR

EXCITATORY NEUROTRANSMITTERS

[illegible]

Urine Creatinine

TEST	RESULT	H/L	REFERENCE	UNITS
Creatinine, Urine	5.31		(3.45-22.90)	mmol/L



26120-0154

Dr JOSEPH NASTASI JOSEPH NASTASI. 138 JUKES ROAD, FAWKNER VIC 3060. 0393571088

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OPTIMAL RANGES TABLE (Adult >11 yrs)

Inhibitory Neurotransmitters	Target Reference Range	Units
Tryptophan	3970 - 8450	ug/gCR
Serotonin	100 - 215	ug/gCR
5HIAA	2988 - 5850	ug/gCR
GABA	400 - 600	ug/gCR
Glycine	61 - 159	ug/gCR
Taurine	24.5 - 134	ug/gCR

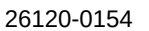
Excitatory Neurotransmitters	Target Reference Range	Units
Glutamate	2520 - 3700	ug/gCR
Glutamine	37 - 71	ug/gCR
Histidine	19.7 - 58.4	ug/gCR
Histamine	5.2 - 15	ug/gCR
PhenylEthylAmine (PEA)	5.3 - 16.1	ug/gCR
Tyrosine	4790 - 10278	ug/gCR
Tyramine	279 - 588	ug/gCR
Dopamine	200 - 300	ug/gCR
DOPAC	658 - 1449	ug/gCR
HVA	3737 - 7048	ug/gCR
Noradrenaline	18.5 - 25.5	ug/gCR
Normetanephrine	-	-
VMA	2580 - 4766	ug/gCR
Adrenalin	1.4 - 4.2	ug/gCR

Neuroinflammatory Markers	Target Reference Range	Units
Kynurenine	257 - 960	ug/gCR
Kynurenic Acid	639 - 1200	ug/gCR
3-Hydroxykynurenine	147 - 467	ug/gCR
Xanthurenic Acid	694 - 1510	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 historical patient data.

Historically, these levels were achieved in the majority of patients as they experienced symptom relief or improvement.



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Inhibitory Neurotransmitter Comment

SEROTONIN LEVELS NORMAL HIGH:

Generally regarded as the "happiness molecule," serotonin has calming effects and contributes to the feelings of well-being. Serotonin elevates mood, decreases anxiety, appetite, and libido, improves sleep and memory, eases depression, and helps regulate body temperature. Most of serotonin in the human body is produced in the gastrointestinal tract, where it stimulates gut motility. Clinically, high serotonin is associated with anxiety, bone loss, celiac disease, diarrhea, high blood pressure, hypercortisolism, irritability, and low libido. Medications that may contribute to elevated serotonin levels include, but are not limited to: serotonin precursors (tryptophan and 5-hydroxytryptophan (5-HTP)), lithium, monoamine oxidase inhibitors, methyldopa, morphine, and reserpine. Foods that can result in high urinary serotonin levels are walnuts, pineapple, and bananas with the highest concentration of tryptophan; and avocados, beans, cantaloupe, dates, eggplant, grapefruit, kiwi, lentils, meats, plantains, seeds, tomatoes, tuna, turkey, and wheat to a lesser extent.

TREATMENT:

Avoid foods that cause a high serotonin. When serotonin is high, methylation cofactors or copper (if low) may support metabolism. Testing for levels of copper and zinc may be helpful to make sure that sufficient levels of these elements are present to properly metabolize serotonin.

GABA LEVELS NORMAL HIGH:

The brain's major inhibitory neurotransmitter, GABA functions as the "off" switch in the brain, balancing glutamate's "on" switch. GABA is essential to limiting excitation so that nerve input signals are balanced and not overdone. GABA prevents anxiety, improves mood, promotes sleep, lowers blood pressure, acts as a muscle relaxant, aids in formation and storage of fear memories, increases insulin secretion and decreases blood glucose levels. Research shows that urinary GABA levels are increased in patients with ovarian cancer. Clinically, high GABA levels are suspected in anxiety, excessive need for sleep, foggy thinking, lethargy, inflammation, and sluggishness. High GABA is often associated with low serotonin.

TREATMENT:

L-Theanine, Taurine, and DHEA supplementation have all modulated and lowered GABA. Caffeine has also been shown to inhibit GABA release.

Excitatory Neurotransmitter Comment

DOPAMINE LEVELS NORMAL:

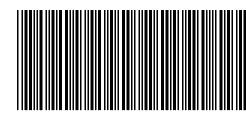
Dopamine improves attention, focus, and motivation, helps with decision making, modulates movement control, promotes lactation, increases blood pressure, urine output and sodium excretion, and allows for feelings of reward and pleasure. Additionally, dopamine plays a central role in the etiology of addiction. Dopamine also serves as the parent precursor to norepinephrine and epinephrine.

NORADRENALIN LEVELS NORMAL:

Noradrenalin functions both as a neurotransmitter and a hormone, participating in the body's "fight or flight" response. Noradrenalin increases alertness, focuses attention, fine-tunes vigilance, increases blood pressure, heart rate, and blood sugar, reduces digestive activity, pain, and sleep, prevents bladder emptying, and regulates body temperature. Noradrenalin is very similar in structure and physiological effects to adrenalin. The adrenal gland produces approximately 20% of the total output with 80% produced by the sympathetic nerve fibers.

ADRENALIN WITHIN REFERENCE RANGE:

Adrenalin, also called epinephrine, functions both as a neurotransmitter and a hormone, participating in the body's fight or flight response. Adrenalin increases alertness, focuses attention, fine-tunes vigilance, increases blood pressure, heart rate, and blood glucose, reduces digestive activity, pain and sleep, prevents bladder emptying, and regulates body temperature.



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Methodology

Liquid Chromatography-Mass Spectrometry (LC-MS/MS/MS), Automated Chemistry/Immunochemistry