

THE NEUROSCIENCE LAB REPORT

Interpreting the values on the NeuroScience lab report is a complex task that is best carried out in conjunction with your healthcare practitioner. Depending on your symptomatic presentation, neurotransmitter values can be above or below the optimal range. It is important that the values be interpreted in light of your health concerns. Additionally, various medications and supplements can influence the laboratory values. Please discuss this with your healthcare practitioner in order to get the most information out of your test results.

Each NeuroScience lab report contains your individual lab values as well as three distinct ranges to which the results can be compared to. These include the:



- **OPTIMAL RANGE**

A set of values based on what has been observed in a "healthy" population as well as the opinions of the experts at NeuroScience.

- **THERAPEUTIC RANGE**

A set of values that serves as a target for those using neurotransmitter-supporting formulas.

- **OBSERVED RANGE**

A set of values that represent what is observed in 90% of the samples tested.

- **DAY/NIGHT RANGES**

Second-pass urine samples collected in the AM correspond to the respective "Day" ranges. Conversely, samples collected prior to bedtime or during the night correspond to the respective "Night" ranges.

The Optimal Range is suggested for the interpretation of baseline values. If neurotransmitter values fall above or below the optimal range, your nervous system may be out of balance. Talk to your healthcare provider about options to address neurotransmitter balance.



TAKE CHARGE OF YOUR HEALTH

If you are struggling with a health concern, ask your healthcare provider to do a simple urinary lab test to measure your neurotransmitter levels.

If your neurotransmitters lack balance, ask about NeuroScience's natural, non-prescription approach to restoring neurotransmitter balance and supporting health.



Neurotransmitters 101

A Patient's Guide to Understanding the Role of the Nervous System in Health



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Neurotransmitters' Role in Health

The human nervous system is arguably one of the most complex systems in nature. It is responsible for coordinating thousands of processes, from muscle contraction to crying. The center of the nervous system is the brain, which contains over 100 billion specialized cells called neurons. The nervous system also contains very important chemical messengers called neurotransmitters. The brain uses neurotransmitters to tell your heart to beat, your lungs to breathe, and your stomach to digest. Neurotransmitters are also necessary for thought processes, emotions, and other essential body functions including sleep, energy, and fear.

These factors can cause the levels of neurotransmitters to become either too high or too low. Imbalanced neurotransmitter levels can lead to:

- Feelings of sadness • Feelings of anxiousness
- Disrupted sleep • Fatigue
- Behavioral problems • Foggy thinking
- Headaches

The good news is that neurotransmitter levels can be measured, and, with the help of your healthcare practitioner, options for improving nervous system function can be discussed.

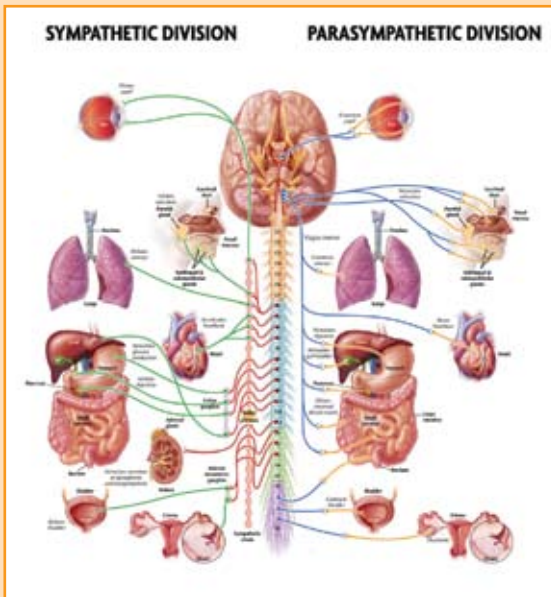
This brochure describes some of the roles of major neurotransmitters in your body. Please keep in mind that the neurotransmitter test is not diagnostic for any particular disease. Rather it is one of many tests your doctor can use to address your health concerns.

A GUIDE TO NEUROTRANSMITTERS

Neurotransmitters are divided into two basic categories:

- Excitatory** neurotransmitters *stimulate* the brain and body.
- Inhibitory** neurotransmitters *calm* the brain and body.

Just as *levels* of individual neurotransmitters are important in maintaining optimum health, so is the proper *balance* between your **excitatory** and **inhibitory** systems.



The Nervous System

Clearly, a system with this much responsibility needs to function properly in order for a person to remain healthy. Unfortunately, the nervous system can be easily disrupted through a number of factors:

- Stress • Poor diet • Toxic chemicals
- Infections • Genetics

EXCITATORY NEUROTRANSMITTERS

Aspartic Acid is vital for energy and brain function.

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| <ul style="list-style-type: none"> ↑ High levels • Seizures • Anxiousness | <ul style="list-style-type: none"> ↓ Low levels • Tiredness • Low mood |
|---|--|

Epinephrine, also known as adrenaline, important for motivation, energy and mental focus.

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|---|--|
| <ul style="list-style-type: none"> ↑ High levels • Sleep difficulties • Anxiousness • Attention issues | <ul style="list-style-type: none"> ↓ Low levels • Fatigue • Lack of focus • Difficult weight loss |
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Norepinephrine, also known as noradrenaline, is important for mental focus and emotional stability.

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| <ul style="list-style-type: none"> ↑ High levels • Anxiousness • Stress • Hyperactivity • High blood pressure | <ul style="list-style-type: none"> ↓ Low levels • Lack of energy • Lack of focus • Lack of motivation |
|---|--|

Dopamine is responsible for feelings of pleasure and satisfaction, also muscle control and function.

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|---|---|
| <ul style="list-style-type: none"> ↑ High levels • Poor intestinal function • Developmental delay • Attention issues | <ul style="list-style-type: none"> ↓ Low levels • Addictions • Cravings |
|---|---|

Glutamate is the body's primary excitatory neurotransmitter, necessary for learning and memory.

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| <ul style="list-style-type: none"> ↑ High levels • Anxiousness • Low mood • Seizures • Psychological disorders | <ul style="list-style-type: none"> ↓ Low levels • Tiredness • Poor brain activity |
|--|---|

PEA is important for focus and concentration.

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| <ul style="list-style-type: none"> ↑ High levels • Mind racing • Sleep difficulties • Anxiousness | <ul style="list-style-type: none"> ↓ Low levels • Difficulty paying attention • Difficulty thinking clearly • Low mood |
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Histamine helps control the sleep-wake cycle as well as energy and motivation.

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| <ul style="list-style-type: none"> ↑ High levels • Allergic responses • Sleep difficulties | <ul style="list-style-type: none"> ↓ Low levels • Feeling tired |
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INHIBITORY NEUROTRANSMITTERS

GABA is the primary inhibitory neurotransmitter in the brain and is necessary to feel calm and relaxed.

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| <ul style="list-style-type: none"> ↑ High levels • Hyperactivity • Anxiousness • Sleep difficulties | <ul style="list-style-type: none"> ↓ Low levels • Severe hyperactivity • Severe anxiousness • Severe sleep difficulties |
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Glycine, like GABA, helps calm & relax the body.

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| <ul style="list-style-type: none"> ↑ High levels • Anxiousness • Low mood • Stress-related disorders | <ul style="list-style-type: none"> ↓ Low levels • N/A |
|---|--|

Taurine important for proper heart function, healthy sleep and promoting calmness.

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| <ul style="list-style-type: none"> ↑ High levels • Hyperactivity • Anxiousness • Sleep difficulties | <ul style="list-style-type: none"> ↓ Low levels • Severe hyperactivity • Severe anxiousness • Severe sleep difficulties |
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Agmatine blocks the potentially harmful effects of excessive glutamate.

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| <ul style="list-style-type: none"> ↑ High levels • N/A | <ul style="list-style-type: none"> ↓ Low levels • Anxiousness • Low mood • Stress |
|---|--|

Serotonin plays important roles in the resolution of mood, sleep, and appetite.

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| <ul style="list-style-type: none"> ↑ High levels • SSRI medications | <ul style="list-style-type: none"> ↓ Low levels • Low mood • Sleep difficulties • Uncontrolled appetite • Headaches • Hot flashes |
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OTHER PARAMETERS

Glutamine is an amino acid that is made into GABA and glutamate. Optimal glutamine levels are important for intestinal function. High glutamine levels are thought to be a signal for imbalances within the nervous system.

DOPAC is a breakdown product of the neurotransmitter dopamine. As such, DOPAC levels, when viewed in conjunction with dopamine levels, may provide insight into how the body processes neurotransmitters.

Creatinine is a normalizing parameter used to calculate neurotransmitter levels. Creatinine is produced by the kidneys at a constant rate. Therefore, by using creatinine as a constant factor, urinary measurements can be performed without having to factor in the patient's hydration state, possible renal disorders, or diuretic substances.