

The Tuesday Minute

Nutritional information.... one byte at a time

This Week's Topic

Serotonin Deficiency And Neurotransmitter Health

I'll never forget sitting in a seminar about serotonin. The speaker was emphasizing all the lifestyle factors that reduce serotonin...things like stress, caffeine, sugar, chocolate, alcohol, and nicotine. A doctor friend of mine sitting next to me looks at me slightly panicked and says "I do all those things." I'm sure you have heard of medical student syndrome, where you think that you have all the symptoms of what you're studying. Well today you will probably see yourself as we go down the list of symptoms. I know I did. But as we focus on serotonin and relate it to neurotransmitters, keep in mind we are really talking about brain and nervous system health.

In this information age, we need a healthy brain. I have a mini-checklist that we can use with our patients to evaluate if neurotransmitter deficiencies might exist. First, let's define what neurotransmitters do and some of the complications that are involved in evaluating them.

Neurotransmitters are involved in both the peripheral nervous system and the brain. Neurotransmitters are chemicals used as a messenger from one nerve cell to another. They are used to relay, amplify, and modulate signals between a neuron and another cell. The blood brain barrier prevents large polypeptides from entering and leaving the brain as opposed to smaller amino acids which can pass through and affect brain chemistry.

An academic question often asked is "can we measure neurotransmitters in the brain?" Neu-

rotransmitters are larger molecules. Unless the blood brain membrane is compromised, in my opinion, it seems difficult for these critical neurotransmitters to pass through. Keep in mind, 90-95% of the serotonin is made and used in the gut, often called the "second brain." So with blood or urine evaluations, are we really measuring brain levels of neurotransmitters? Personally I am pleading ignorance on this one. But to me it doesn't matter. If someone is low in peripheral nervous system serotonin, chances are very high that they would be low in brain levels as well.

Remember our goal is to clean the body and feed the body. That's the beauty of what we do. The body will use what it wants and dump the rest. So it makes sense. If we are low in brain serotonin, the body will find a way to increase levels in the most efficient manner if we provide the basic building blocks. We can let the academic people figure out the particulars. I say if someone exhibits the symptoms on a regular basis... fix their diet... fix their digestion... then we can supplement appropriately.

What are the symptoms of serotonin deficiency?

- Loss of pleasure in hobbies or interests
- Feelings of inner rage
- Feeling overwhelmed with ideas to manage, experiencing depression
- Lacking artistic appreciation
- Feeling paranoid more than usual
- Having lost the enjoyment to life

- Feeling depressed when it is cloudy or sunshine is diminished
- Having less enthusiasm for life in general but especially your favorite activities
- Inability to fall in a deep restful sleep
- Feelings of unprovoked anger
- Not enjoying your favorite foods
- Not enjoying your friendships or relationships
- Feelings of dependency on others
- Feeling more susceptible to pain

You can see why some writers have called serotonin the “happy hormone.” If you’re low in serotonin, you won’t be happy. Traditional medicines burn out the existing serotonin with SSRI’s (serotonin-specific reuptake inhibitors), keeping it in the synaptic cleft which can be dangerous when storehouses are exhausted. As a side note, most of the crazy killing sprees like Columbine or the Northern Illinois University shooting involved people with a history of taking SSRI’s. Violent behavior resulted when they stopped taking them. Exhausting the storehouses is probably not a good idea.

To increase neurotransmitters we want to make sure the precursors are available for the body to make them. Magnesium, zinc, B12, and folic acid are common nutrients needed to make sure amino acids can be converted into neurotransmitters or whatever else the body deems critical. So right off the bat we want to make sure we are using a high quality multivitamin/mineral. I personally take ProMulti-Plus, 2 capsules tid when under stress and 1 capsule tid for normal high intensity living. As usual, we have to make sure we have a healthy digestive system and be aggressive in anti-stress activities.

As I mentioned... stress, caffeine, sugar laden foods, chocolate, alcohol, and nicotine are some of the major factors that deplete serotonin as well as the other neurotransmitters. Real food, real down time periods and then supplementation will make a huge difference. As a baseline for serotonin support, we use 5-Hydroxy Tryptophan, B3, and P-5-P (pyridoxal-5-phosphate), and a good multiple.

Individual amino acids, as you know should be taken between meals with a little juice to make sure whatever is eaten in a meal does not compete with the receptor sites necessary for the amino acid you are supplementing. However, L-5-Hydroxy Tryptophan can be taken with food. It is one step further in the convergence from tryptophan to serotonin and therefore will not compete with receptors that may be involved in absorbing more than one nutrient. I use Neuro-5-HTP from Biotics 2 capsules tid which has the major co-factors necessary to make serotonin, as well as 50 mg of L-Theanine, another amino acid used in stress reduction.

As you can see, we have just scratched the surface when considering neurotransmitters, brain, and nervous system health. On the link in the web page I have a list of other symptoms for dopamine, GABA, and acetylcholine. I wanted to give you this checklist so you can continue to give the best service you can to your patients. With stress being so rampant in people’s life, addressing symptoms naturally is becoming a welcome alternative without dangerous side effects.

Thanks for reading, see you next Tuesday