

Dysautonomia (12 Stressors behind the Total Stress Load Index)
The Primary Cause of All Chronic Medical and Psychiatric Disorders
Copyright Charles Gant MD, PhD © 2009

The nervous system is like the famous Certs commercial, “Two, two, two mints in one.” Two parts of the nervous system are anatomically and physiologically distinct yet they coexist in our brain and nervous system. They are:

- 1) The rest and digest, regenerative, parasympathetic system
- 2) The fight and flight, degenerative sympathetic nervous system

The rest and digest, regenerative, parasympathetic system is where our nervous system prefers to be, but when sudden, emergent threats to survival occur, our nervous system will gladly sacrifice its regenerative, healing mode of operation, in order to deal with a short-term, life threatening emergency. A little degeneration and physiological injury is a small price to pay to avoid getting attacked and killed by a predator (originally where the fight/flight response came from).

The key phrase here is “short-term,” because in the modern world, many kinds of stress are preventing us from returning to the preferred rest/digest, healing, parasympathetic mode (12 stressors listed below). Thus, chronic stress (scientific term is dysautonomia) leads to long-term, biochemical and cellular adaptive abnormalities, often causing the symptoms of ppsychological, immunological, neurological and endocrine (acronym is **PINE) distress**. Once chronically trapped in ***PINE Distress***, an over-expressive, sympathetic nervous system drives unremitting ***fight*** (anger/resentments/hate) and ***flight*** (anxiety/fear), and relatively less time is spent living in the serenity of the present, the Now¹. Psychic pain and suffering results and individuals afflicted in this way experience unhappiness and can develop psychiatric symptoms (anxiety, depression, insomnia, obsessions, phobias, inattentiveness).

¹ See The power of Now by Eckhart Tolle

At least 12 types of stressors can gang up on us and add up to a Total Stress Load Index (**TSLI**) which drives the symptoms of distress, medical and psychiatric symptoms, accelerated aging and human unhappiness. The Total Stress Load Index can be assessed by taking a good medical, dental and psychological history, vital signs (blood pressure, pulse, temperature), a mental status exam, psychological testing (such as IVACPT²), brain imagery testing (e.g., qEEG Mapping), autonomic response testing (ART) and heart rate variability (HRV) testing, all of which are available at the National Integrated Health Associates (www.NIHADC.com). Once properly assessed, targeted interventions can reduce the TSLI.

12 Stressors and the Total Stress Load Index (TSLI)

- 1) Emotional Stress (e.g., losses, post-traumatic)
- 2) Cognitive Stress (e.g., irrational demands)
- 3) Sensory Stress (e.g., chronic pain disorders)
- 4) Metabolic Stress (e.g., low/high blood sugar)
- 5) Toxic Stress (e.g., heavy metals, chlorine)
- 6) Immune Stress (e.g., autoimmune, allergy)
- 7) Infectious Stress (e.g., lyme, candida, GI)
- 8) Purposelessness Stress (e.g., no spirituality)
- 9) Endocrine Stress (e.g., hormonal, PMS, aging)
- 10) Oxidative Stress (e.g., vein/arterial blockage)
- 11) Energetic Stress (e.g., electromagnetic, geopathic)
- 12) Neurotransmitter Stress (e.g., ↓ serotonin)

Since toxic stress (#5 above) is a major contributor to the TSLI in an age of environmental degradation, and is often one of the most challenging of all stressors in treatment, I have broken it down into 7 areas (listed below) which for several decades has been referred to as the **Total Toxic Load**. Each of the 12 types of stressors can be

² Intermediate Visual and Auditory Continuous Performance Testing (see: http://www.braintrain.com/main/ivaplus_research_bibliography.htm)

delved into in this way. Toxin category #7 below, psychotropic toxins, are a scourge in the modern age, as addiction is one of the leading causes of death. Addiction to prescribed medication, illicit substances, recreational drugs (cocaine, marijuana) and processed carbohydrates is nothing more than a regular and self-defeating attempt to anaesthetize the Total Stress Load Index with a numbing chemical.

Another category of toxins, heavy metals, presents as a huge challenge in the modern age. The core issue for heavy metals is that they induce methylation defects (see <http://en.wikipedia.org/wiki/Methylation>), so that the primary neurotransmitter which drives all dysautonomia, noradrenline, can't be metabolized away (via methylation). This critical heavy-metal-induced-metabolic-defect can be easily diagnosed with functional medicine laboratory testing, as well as other toxic stressors, which altogether add up to a Total Toxic Load, which is stressor (#5) in the Total Stress Load Index (above). All of the 12 Stressors above can be mined into as we have done here for #5, the stressor of toxicity.

7 Types of Toxins (Total Toxic Load)

- 1) **Heavy metals**, especially mercury (“mad hatter syndrome”)
- 2) Noradrenalin, the burnout, chronic stress hormone – SAME and magnesium etc.
- 3) Mycotoxins (myco = mold or fungus), “Brain fog” – from gut and sinuses (low carb diet)
- 4) “Brain allergy,” especially to food, celiac
- 5) Environmental toxins
 - a. Petrochemicals – glycine deficiency
 - b. Halogens – iodine replacement by Cl, Br, F
- 5) Gut, sinus and dental related toxins
- 6) Lyme, chronic infections, other tick-borne, viral
- 7) **Psychotropic toxins** (addictions, toxins which unlike 1-6 above can temporarily improve mood and function)

Finally, to give you a further example of the basic thinking here, since I mentioned that excess activity of the neurotransmitter noradrenaline (AKA norepinephrine), often due to a heavy-metal-induced-metabolic-defect, is the neurotransmitter which governs the final pathway in dysautonomia, let's take a deeper look at stressor #12 above and at some of the “**good**” neurotransmitters and mood adjustors which inhibit noradrenaline. As noted in the table below, 12 inhibitors of norepinephrine (AKA noradrenaline), all of which can be assessed with functional medicine testing, all contribute to down-regulating the fight/flight inducer norepinephrine. When deficiencies in these neurotransmitters are suspected or diagnosed, some of these can be supplemented directly or their precursors can be supplemented to lessen the Total Stress Load Index.

Inhibitors of Norepinephrine Release

Substance	Receptor	Comments
1) acetylcholine	muscarinic receptor	“natural nicotine”
2) norepinephrine (itself) and epinephrine	α2 receptor	Autoreceptor effect, but adrenaline (epinephrine) is fight/flight mediator
3) 5-HT	5-HT receptor	5-HT = serotonin
4) adenosine	P1 receptor	Adenosine, from ATP, adenosine triphosphate, citric acid cycle
5) PGE	EP receptor	from omega 6s, DGLA
6) histamine	H2 receptor	from histidine, an essential amino acid
7) enkephalin	δ receptor	Impinges on cell bodies of locus ceruleus, directly shuts down dysautonomia

8) dopamine	D2 receptor	Dopamine is the “natural cocaine” in the brain
9) ATP	P2 receptor	See adenosine above
10) GABA	GABA receptor	Used by frontal lobes - feedback inhibition of dysautonomia
11) Taurine	Taurine receptor	Used by frontal lobes - feedback inhibition of dysautonomia
12) Endocannabinoids	CB1 receptors	Brain’s natural marijuana, inhibits norepinephrine via retrograde transmission

Rang, H. P. (2003). *Pharmacology*. Edinburgh: Churchill Livingstone. [ISBN 0-443-07145-4](#). Page 129

Chronic sympathetic stress and distress is at the root of all medical and psychiatric disorders, psychic pain and suffering, unhappiness and psychiatric symptoms (anxiety, depression, insomnia, obsessions, phobias, inattentiveness). Chronic activation of the fight (anger, resentments, hate) and flight (anxiety, fear) response is at the root of violent behaviors and attempts to medicate psychic stress away (addiction). At least 12 types of stressors exist and these add up to a Total Stress Load Index (**TSLI**).

The Total Stress Load Index can be assessed by taking a good medical, dental and psychological history, vital signs (blood pressure, pulse, temperature), a mental status exam, psychological testing (such as IVACPT³), brain imagery testing (e.g., qEEG Mapping), autonomic response testing (ART) and heart rate variability (HRV) testing, all of which are available at the National Integrated Health Associates

³ Intermediate Visual and Auditory Continuous Performance Testing (see: http://www.braintrain.com/main/ivaplus_research_bibliography.htm)

(www.NIHADC.com). Once properly assessed, targeted interventions can reduce the TSLI, which usually markedly improves the symptoms of any chronic medical or psychiatric disorder. This model of treatment is comprehensive and integrative. Since targeted treatments exist to properly diagnose and address TSLI, those suffering from “untreatable” and chronic disorders should have a renewed sense of hope, and avail themselves of such interventions.