



IHHS-HEALTH & WELLNESS CENTER

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How Stress Creates Disease

The interruption of the concert of neurotransmitters

Acute stress causes a response to survive. In today's day to day stress, this is becoming a long term response resulting in the many illnesses. Stress can come from 3 causes which are physiological, perceptual, and imaginary. Neurotransmitters and hormones begin to imbalance as this response becomes long term. When the shift involves serotonin and dopamine we see diabetes and obesity. When it involves norepinephrine and epinephrine it leads to heart disease and stroke.

How do we control these balances? The amygdala, or reptilian brain, is responsible for basic survival emotions. The amygdala is part of the brain that signals fright or flight type survival responses, based on the body's stimulation. These amygdala emotions, in acute stress alter parts of the frontal cortex. The frontal cortex is the area of the brain immediately behind the eyes in the peri-orbital structure. An anxiety disorder is a common result from an overactive amygdala and an underactive frontal cortex. When Acute Stress Disorder(ASD), as a result of a traumatic event(s), lasts over 3 months it is then termed Post Traumatic Stress Syndrome (PTSD). This is due to an environmental cause coupled with a genetic predisposition.

To assist these individuals with stress issues we must begin to realize that 25% of the country reads at only a level 1. This means they process slowly and understand more slowly than the rest of society. Rephrasing is quite often necessary as they may only understand 1/2 of what they are told. To further illustrate this, only 3% of the country reads at a level 5. This indicates they are capable of understanding and forming complex thoughts and concepts, both rapidly and easily. We must also realize all humans have some cognitive distortion. This would indicate we can all be affected by stress at some level.

One of the leading causes of ASD and PTSD is genetic variability. Some appear predisposed to form new neural connections in response to traumatic events. This is why not everyone gets PTSD from the same event. In susceptible individuals rapid cycling of the thoughts and trauma, occurring over and over, until it forms an entirely new neural network in the brain, allows for existence of PTSD.

When these genetic variables allow a damaging response to stimulus we see the result of acute traumatic events in the form of shifts in serotonin(SER), dopamine(DOP), norepinephrine(NE), beta-endorphin, gamma-aminobutyric acid(GABA), and endocannabinoid levels. This leads to a maladaptive response by the body, a disassociation from reality, and depersonalization (feeling less of a person). The body is no longer able to differentiate reality from imagination. In this individual, imagination and reality become equally real. It is interesting to note that inhaled cannabinoid compounds, such as marijuana, affect short term memory causing random forgetfulness. The body is capable of producing its own endocannabinoid neurotransmitters. They are used for mood, appetite, pain control, as many may be aware of. However, they are also used in a system of synaptic plasticity (memory maintenance), by maintaining a targeted forgetfulness system that we all need to survive in the world. For example the brain can block or forget a traumatic event that would make living a normal life extremely challenging. The same goes for physical

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stimuli; for example when you first put on a shirt you can feel you are wearing it, but a few minutes after having it on, your body forgets that stimuli, and no longer bothers your mind about that stimuli. If we were bombarded with all the stimulation our body experiences at all times, it would be overwhelming.

Addiction is a real concern. In PTSD/Highest stress patients, 4% of these have actual pain, where as 66% of them have emotional pain. Many will self medicate to assist in handling the cycle of their negative emotions.

Family caregivers have a very high stress job. In response to chronic stress, many develop real physical conditions such as hypertension, obesity, depression, osteoporosis, infection from increased inflammatory processes, and even Alzheimer's. This is a result of the body becoming out of balance from the acute stress.

Professional caregivers have double the risk of heart disease and six time the risk of Alzheimer's of family caregiver's. We need to teach them better ways to handle stress. Actually, 30% of Alzheimer's cases are a result from a vascular component. In the brain small unnoticed transient ischemic attacks creating a lack of oxygen rich blood to the brain causes repeated episodes brain tissue damage. Neuronal brain damage can occur as a result of blood pressure spikes, blood being too thick, or inflammation of tissues all over the body to name a few things. As time goes on, the damage continues to build, until it becomes apparent and is diagnosed. This is a high cost to pay when many are capable of preventing it.

To prevent stress damage one is suggested to stay within specific physiological limits. The best estimate of levels we know of today is; blood pressure of, < 148/83, waist to hip ratio of ≤ 0.94 , total cholesterol to HDL ratio of ≤ 5.9 , and an HDL ≥ 46 . If these values are not within normal limits, daily stressors may be affecting him/her.

Job's and careers are also a major source of stress. Compare your readings to the above standards, to see how stress is affecting you. For example, if you are over diastolic blood pressure of 83 you are at risk for cardiovascular disease and stroke, (in essence the vascular component in dementia). Comparing these physiological standards can indicate how stressed an individual is both physically and mentally. If the comparison shows levels are inappropriate, consider decreasing stress to minimize cognitive distortion and enhance long term physical health.

Negative thoughts create negative emotions such as anger, fear, and sadness. Practiced negative thoughts, that repeat over and over until they are automatic, create a distorted sense of reality. Passion can begin to take over reason and reality. This pervasive pattern of thinking, over time, leads to exaggerated, self-defeating negative thoughts, every day all day. Epigenetic's may give us a hint here, as to how focusing one's attention on specific things can alter the way our genes exist and function in both positive and negative ways. The Human Genome project found most of our genome is not readily identifiable via genetics and coined the term epigenetic's. This refers to the effects one's thoughts can have on gene expression, and how the body runs. This may lead us to understanding why the '4 steps to derail stress' function, ie via both a genetic and neurotransmitter basis.

Common distortions can be: all or nothing, over generalization, mental filters removing the positive, jumping to conclusions, magnification or minimalization of thoughts, emotional reasoning (not rational), labeling or judging, and over-personalization in thinking. Their perspective is often wrong spatially as well. Physical symptoms can indicate

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imbalances of neurotransmitters. Tremors can indicate low dopamine which not only control the body, but also higher functions. We can also see this in children with GI tract issues. Dopamine controls peristalsis. Low dopamine can lead to constipation, which can be an indicator of future adult stress problems, due to insufficient or imbalanced dopamine.

A person's own belief systems can affect their health. Those who believe stress negatively affects them have double the risk of heart attack. Stress needs to be in balance. Too little stress and one can end up being unaware and missing things they need, in both their health and environment. Too much stress will lead to negative health events also, due to being too focused on real and imaginary perceptions.

The Bensen Henry Institute has come up with 4 steps to derail stress from creating cognitive distortions and negative thoughts. These are designed to interrupt the process from continuing to illness.

#1. Stop. Consciously call a time out to stop the negative input and give your brain time to create different thoughts. The idea is to interrupt the senses to stop the cycle. Distract yourself mentally with anything that captures your attention. It can be anything from looking at a photograph to pinching yourself.

#2. Breathe. Take a deep relaxing breath, relaxing the shoulders down, and expanding the diaphragm. One needs to calm themselves into a relaxed state, while stimulating positive thoughts (ie affirmations). This will allow automated responses to decrease.

#3. Reflect. Ask yourself if this a thought or a belief. (ie Did I jump to a conclusion? What evidence do I have for the thought or belief? Is there a more realistic way to view this? What is the worst that could happen?) Get your system into critical thinking mode. Remember up to 97% of the population can have some difficulties with critical thinking and rapid understanding.

#4. Choose. Decide how to best think about the source of your stress. Decide how you can cope more effectively with the situation. Decide how you can view all of it more effectively, more positively, and more accurately. Practice these thoughts over and over until they become automatic in stress situations. Take back your mind and body. Take back your own control.

What is happening to the body in high stress?

What is known at this time is it involves neurotransmitters dopamine, serotonin, and norepinephrine and their interrelationships. These inter relationships determine the kind of stress response we see behaviorally.

Norepinephrine (NE) which was termed noradrenalin 5 years ago. It is responsible for daily energy, socialization, and vigilance. Too much can lead to obsessive compulsive disorders. This is the stress hormone from the adrenal gland. It is both a neurotransmitter and a hormone. In long term stress it balances with increases in cortisol. As the body becomes inflamed NE is taken from the brain for the needs of the body. As this occurs the level in the brain drop, due to the inability to maintain overproduction of NE. As imbalance continues the blood brain barrier 'leaks' NE, and

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results in the brain becoming deficient in NE. Within 24 hours, the NE overproduction from physiological and mental stress can cause a neurotransmitter imbalance result in underproduction of NE. The increased NE can result in long term elevated cortisol, and lead to brain atrophy of, primarily the frontal cortex and hippocampus. This can lead to dementia's in later life.

Serotonin (SER) is responsible for the beginning and end of processing, repetition, domestication vs aggression, and sharing vs territorial. We see its function in mood control, and regulation of food intake and sleep. Deficiency can lead to psychosis of one kind (where thoughts overlap, and thoughts do not start and end properly), rumination (running thoughts over and over), and major depression. In balance we see empathy with balance in its characteristic functions already mentioned.

NE with SER is responsible for anxiety vs adaptation, irritability vs patience, chronic pain vs analgesia, self-esteem vs inadequacy. To assist in preventing imbalance, body inflammation constantly needs to be managed. The body's neurotransmitter levels are constantly in flux with the needs of the brain. There is no good way to use drugs to correct this. Drugs perform to consistent predictable levels(ie Paxil is 70/30 NE/SER stimulating, not variable levels needed by the brain and body). This provides a response but never remission.

Dopamine (DOP) is responsible for motor control, pleasure perception, sexual desire, pain avoidance, reality vs illusion distinction, and deceptions for no reason or meaning to self and others. We see this control in disease states such as Parkinson's, addiction, restlessness, psychosis, reward deficiency, anhedonia (the inability to enjoy life or feel happiness). Electromagnetic frequencies (EMF's) can also deplete DOP which can lead people to lose their control to avoid pain. Low levels of dopamine are why people will stay addicted to drugs or relationships. The addiction becomes pleasure, hence not perceiving reality correctly. It is interesting to note in males we see 'fight or flight' responses, however in females, due to high levels of oxytocin in response to stress, we see a tendency for them to 'tend and befriend', and from this point will exhibit characteristic symptoms. (Oxytocin is a bonding hormone that produces a tendency to form social bonds with others.)

DOP with NE is responsible for motivation vs withdrawal, risk taking vs novelty avoidance, and having and interesting sense of life vs no value (ie love of life vs devalued sense of life).

DOP with SER is responsible for appetite vs libido, introversion vs extroversion, satisfaction with achievement. We see this functioning in type A and B people. We also see obesity as a response to stress, which is now at 65% in the USA. This condition shows a need to increase DOP to balance with SER.

DOP with NE with SER is responsible for integration, normotropy (feeling and perceiving both clearly and accurately hence normally), seeing the big picture with understanding and clarity, vs having a developmental issue from impaired perceptive ability due to imbalance.

Other neurotransmitters:

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Gamma butyric acid(GABA) is responsible for inhibition of signals to maintain emotional balance, sleep patterns, anxiety and pain reduction. It is one neurotransmitter than is inhibitory, not stimulatory, in it's action.

Acetylcholine (ACH) is the neurotransmitter that regulates the autonomic nervous system for signal transmission from nerves to muscles, memory formation, learning and recall. It weaves memories, and can be part of continuation of night terrors in concert with melatonin balance. It is also a component of migraine, mood disorders, and Alzheimer's.

Always remember that stress is experienced due to body inflammation as well as emotional stress, real and unreal. Both of these factors along with genetics will affect one's health. Control body inflammation via detoxification with nutritional optimization is the prescription for minimizing stress. This will also contribute to a higher quality of life along with stress reduction, by lowering neurotransmitter imbalance. Look for the various IHHS programs that can be utilized for these purposes at http://yourhomeopath.org/products/natural_products.shtml .

When imbalances become severe we see progression from stress, to Acute Stress Disorder, to finally Post Traumatic Stress Syndrome. This diagnosis can include hyper-vigilance, withdrawal from society, weeping all day, with a pathological neural network that continues to repeat not seeing the big picture. Cognitive behavioral therapy by psychologists, and meditation has been very useful in assisting with stress, anxiety and trauma disorders. After years of practicing homeopathy and observing how it changes the way a person thinks and perceives in greater accuracy, I believe it is an unfound tool for assisting people with these conditions.

Prescription Drug Therapy such as Symmetrel or amantadine 100mg every morning, increases dopamine (DOP) and decreases anhedonia (the inability to enjoy life or feel happiness) with very low side effects. There are many other pharmacological agents that are available on prescription with significant side effects. Due to toxicities, it is recommended one see a mental health care specialist to manage this level of care.

There are many other therapies that are used from electroshock, to implantation of electrodes that stimulate areas of the brain, to surgical interventions of the vagal nerve for stimulation purposes, performed by physicians.



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Considerations to balance neurotransmitter levels nutritionally:

Gamma-aminobutyric acid (GABA) 300mg 3 times a day to enhance sleep and memory disturbance.

Lecithin to increase acetyl choline(ACH), (only non GMO should be used.)

S-adenosylmethionine (SAMI) increases nor epinephrine (NE) and serotonin (SER)

St. John's Wart to increase norepinephrine (NE) (This is a monoamine oxidase inhibitor, and it has many side effects and interactions with many drugs. Ask your pharmacist or physician prior to taking.).

Theanine to increase dopamine (DOP)

Tryptophan to increase serotonin (SER)

Tyrosine, an amino acid, to increase both dopamine (DOP) and nor epi nephrine (NE)

Hemp Extract or Synergy Spectrum PCR 5 to 30 drops to manage stress

Combine these products with other IHHS programs for Health and Wellness:

The IHHS Energy and Wellness program

http://www.yourhomeopath.org/documents/services/EWC_Therapy.pdf

The IHHS Herbs to Optimize Health program

http://www.yourhomeopath.org/documents/services/EWC_Therapy.pdf

The IHHS Homeopathic Detoxification program

<http://www.yourhomeopath.org/documents/services/Detox.pdf>

The IHHS Homeopathic Immune Stimulation program

http://www.yourhomeopath.org/documents/services/Hormones_in_synergy.pdf

Other alternatives:

Eat healthy and organic. People who eat the healthy have less physiological stress, and cope with stress better than fast food junkies.

Stop caffeine and drink plenty of clean water.

Sleep 7 to 9 hours a day.

Work in a career that you have a passion for.

Do not forget to exercise to release stress, and detoxify the body

Get some sunlight for health. In the winter the lack of sunshine contributes to Seasonal Affective Disorder.