



Frisco Independent School District

PHYSICAL RESPONSE TO STRESS

Neurotransmitters send and receive messages between brain cells. There are two kinds of messengers: "happy" messengers (cheerful and enthusiastic messages) and "sad" messengers (cheerless and silencing messages).

Too much stress causes the happy messengers to eventually begin to fail. Sad messages overtake happy ones, causing a chemical imbalance. This chemical imbalance is overstress. Everyone experiences short durations of overstress.

The three "happy" messengers are: Serotonin, Noradrenalin, and Dopamine.

Your body clock is located in a supply of Serotonin in the Pineal Gland in the brain. Your body clock coordinates your body functions to the same rhythm. For example, it sets your physiology for sleeping and waking-up.

Your body clock also controls the secretion of the chief stress fighting hormone Cortisol. Disruption of your Cortisol cycle makes sleeping more difficult.

Serotonin is often the first happy messenger to malfunction under stress. Thus, lack of restful sleep is usually the first symptom of overstress.

Noradrenalin sets our energy levels, and makes us feel energized. Failure of this happy messenger causes overstressed people to feel as though they don't have the energy to do much of anything.

Dopamine is located adjacent to where Endorphin is released in the brain. And so there is a link, so that when Dopamine function declines, so does Endorphin function. Endorphins regulate pain. And so, pain increases when stress causes the Dopamine function to fail.

Dopamine also operates your Pleasure Center. Thus, when stress incurs on your Dopamine function, it can also result in a loss of pleasure in normally pleasurable affairs.

Your stress tolerance determines the amount of stress you can handle before your happy messengers begin to fail. Stress tolerance is hereditary.

10% of our population has inherited low stress tolerance. This means that 1 out of every 10 persons feels overly stressed all of the time.

Inherited low stress tolerance will begin to occur in these years as a teenager. Properly handling overstress is essential, especially NOW. The teen years are the best time to start combating this problem. If overstress is not dealt with now, and you are

of the 10% of our population which has inherited low stress tolerance, you may face a lifetime of a losing struggle against stress.

Those of us who experience overstress sometimes use substances to temporarily make us feel better. Some of these substances which can restore balance by chemically boosting the happy messengers are:

- sugar
- caffeine
- alcohol
- solvents
- drugs
- tobacco

Another booster is our own adrenaline. Ways of stimulating your own adrenaline are by over-working or thrill-seeking hobbies.

HOWEVER, these happy messenger boosters don't work well. They do not maintain balance between the stressors and the boosters. This leads to a roller-coaster of good and bad feelings.

First of all, the minute changes in chemical levels can not **ACCURATELY** be adjusted by consuming happy messenger boosters.

Second of all, these boosters cause a roller coaster to start. After your happy messengers are temporarily boosted, they experience a fall. The higher the boost, the greater the fall.

And finally, another problem with happy messenger boosters is that your body adapts to them quickly. Once they are adapted to, the more of them you'll need to experience the desired effect.

Side effects of boosters **WORSEN** the problem of overstress:

- ⇒ Sugar highs lead to sugar lows. Too much sugar **WORSENS** overstress.
- ⇒ Alcohol can cause liver failure and bleeding complications, as well as a greater risk of violence and fatal traffic accidents. Alcohol **WORSENS** overstress.
- ⇒ Tobacco can damage your lungs and arteries, and may cause cancer. Tobacco **WORSENS** overstress.
- ⇒ Caffeine can cause abnormal heart rhythms. Caffeine **WORSENS**
- ⇒ Illegal drugs can cause convulsions, overdoses, even death. Illegal drugs **WORSEN** overstress.

Prescriptive medicines intended to force the body into sleeping or tranquilizing, such as Valium, can also worsen stress. They keep your body from restoring its happy messengers. If taken for long periods of time, these medicines will have severe withdrawal syndrome.

Overstress may lead to alcoholism, compulsive eating, over-working, or substance addictions. Often, the primary cause of these things IS overstress.

Overstress can only be attended to by lowering your stress load. Some ways of lowering your stress load are:

1. Define your sleeping hours and stick to them. (This will help re-set your Body Clock.)
2. Take a break! (Let your body have a chance to heal itself.)
3. Say "No" more often when others request your time.
4. Change is stressful, so it at all possible, postpone major changes in your environment until your stress level has been reduced.
5. Take time off. Work or school more than 40 hours a week can be stressful.
6. Start a stress-relieving diet. Avoid sugar highs, eat more vegetables, take multi-vitamin and mineral supplements.
7. Reduce the amount of happy messenger boosters you normally consume. This may require consulting your doctor first.
8. Avoid things that trigger your allergies and environmental toxins.
9. Exercise three times a week for twenty minutes or up to two hours.
10. Avoid prescriptive medicines designed to force sleeping or tranquilizing. Talk to your doctor before making any changes in your medication.

Still stressed? Consult your physician. It could be that all this stress is caused by a physical illness. Or schedule an appointment with a counselor.

Be sure to combat overstress when symptoms begin. This is especially important if you have low stress tolerance.

Don't let your normal stress level go into overstress. In other words, don't let the things that stress you out pile up. If a new stress enters your life, dispose of another stress you already have, or put it on hold.