

The Chemistry Of Stress: How It Affects Your Health

During my general practice, I often encounter many cases that stem from stress. Gastritis is one of the common clinical presentations that come in O.P. A thorough evaluation of the patient's day will clearly explain why he developed gastritis (stress), and most patients have no problem admitting that they had a stressful day. And so, quite often, I am treating a psychological problem which was manifested as a physical one.

In an interesting study conducted in prisoners of the World War II, it was found that the risk of developing peptic ulcer was twice higher than that of the controls. There are several other issues, like stress induced hypertension, diabetes, bronchial asthma, infections, etc., which come to an O.P. This might make one wonder why stress can cause so many clinical disorders. I will explain why this happens in this article.

In our daily life we often undergo stressful situations. There is no avoiding them. The stress that one experiences is nothing but the response of the body to its outer environment and the mind to its inner fears. These inner fears may be the result of anything, from an examination, one's family, a job or responsibility, or an encounter with a person or situation one dislikes, etc. (1)

Do you know what exactly happens to the body when we are stressed?

Imagine that you have met with an accident. What happens next? The adrenal gland, which is located just above the kidneys, responds to the accident by releasing an emergency hormone known as adrenaline into the bloodstream. This hormone helps in combating daily life stress by changing the body physiology. The adrenaline decreases the flow of blood to the gut and shunts the blood to the body muscles to tackle the tough situation the body is faced with. This gives your muscles more energy to combat the accident. The adrenaline produced at that time shuts down the functioning of the immune system and gut by decreasing their blood supply. This is known as the flight or fight response. This natural response is one of the greatest gifts the human body has for combating external threats that we often encounter in our daily life. This response gives us more power and energy to survive any external threats (like accidents, being chased by wild animals, etc.). (1)

This was also the case for our ancient ancestors. One flight-fight response would save their life from wild animals. This response is present in every animal to combat their enemies and to save their life from predators. Once the external threat vanishes, the flight-fight response subsides and the body restores its normal functioning. (1)

But this begs the question, why does modern man face this much stress in the absence of predators?

Normally, when an external threat is removed, adrenaline production halts and the body will restore its normal functioning. But when we are stressed and the threat is internal (negative thoughts and negative emotions), the production of adrenaline is constant. This will cause deleterious and harmful effects to the body unless the internal threat — “the stress” — is managed. In this situation, “stress” the hormone causes more harm than good. (1)

Do you know why and how exactly negative thoughts impact the body?

The latest research reveals that this adrenaline is not only produced while combating an accident, threat, or disaster, but also when we are stressed more generally. Stress is indeed the disease of modern man. It follows him wherever he goes, and research shows that “the adrenaline is even produced in the body when a person undergoes a negative thought in his mind, or even when he feels negative emotions” and “the adrenaline is produced the same moment he experience negative thoughts and negative emotion.” The fact is that “there is no time lag between production of adrenaline and negative thoughts that pass through his mind or the negative emotions he feels within.” (1)

So how badly will this Adrenaline affect our body? Adrenaline causes the following:

- (1) Increased blood sugar: Adrenaline increases glucose production from liver to blood and decreases the production of insulin, thereby raising blood sugar. This predisposes someone to diabetes mellitus. (1)
- (2) Increased blood pressure: Adrenaline increases blood pressure by constricting arterioles and veins, thereby raising blood pressure. This predisposes someone to hypertension. (1)
- (3) Increased risk of cardiac diseases: Adrenaline increases the rate, force, and contraction of heart muscles and causes arrhythmias. Concurrent stimulation of the heart due to stress can place an increased workload on the heart, leading to increased chances of getting a heart attack. Women have a premenopausal estrogen that protects them from stress related heart disease. (1)
- (4) Obesity: Adrenaline can move fat from storage depots and relocate it to fat cell deposits in the abdomen. This causes an increase in body mass index and generates obesity. Obesity is one of the risk factors for developing diabetes and coronary artery disease. (1)
- (5) Indigestion and chronic constipation: Adrenaline decreases blood supply to the gut, decreases peristalsis of the bowel, and increases sphincter tone by acting on its receptors. This leads to indigestion and chronic constipation. (1)
- (6) Increases susceptibility to bacterial, fungal, and viral infections: Adrenaline suppresses the functioning of immune cells required to combat infectious diseases and thereby increases a person's susceptibility to bacterial, fungal, and viral infections. Higher stress levels increase our susceptibility to H.pylori infections in the stomach and common gastritis. Chronic stress can increase the chances for Urinary tract infections in females. (1,2)
- (7) Increases muscle tension: Adrenaline increases blood flow to muscles and causes increased muscle tension. This leads to tension headaches that we often experience at the end of our working days. The tight muscles can cause headache, shoulder pain, backache, and body pain. Chronic stress induced muscle tension can later predispose us to fibromyalgia, etc. (2)
- (8) Decreased interest in sex: Adrenaline decreases the testosterone produced in men and estrogen in women, both needed for sexual arousal. Chronic stress can cause decreased sperm production and erectile dysfunction or impotence. (2)
- (9) Altered menstrual cycle: Chronic stress can cause irregular or no menstruation. Sometimes it can cause heavy or painful bleeding. (2)
- (10) Creates psychic disorders: Chronic stress is one of the fundamental causes for conditions like overeating, under-eating, and alcohol and drug abuse. (1,2)

So what exactly is the solution for attaining health?

The answer is simple, but tough to achieve. Wipe away our daily life stress!

You might be wondering how we can avoid something which seems so ingrained into modern life. The first step is to bring uncontrolled thoughts and emotions into our control.

To do that, we can use a variety of techniques. NLP psychotherapeutics, mindfulness, and meditation are all wonderful tools we can use to achieve mastery over our thoughts and emotions.

Source(s): (1) The Science of Emotions: Dr. Fahad Basheer (2) The Effect of Stress On The Body: Ann Pietrangelo