

# Why stress is *killing* you.

## And how the experts fix the worst cases.

Health Bytes

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Activa Chiropractic & Acupuncture

### Special points of interest:

- Stress has its place, but too much for too long causes drastic changes to your body
- Chronic stress increases the risk of heart attack, stroke, diabetes and even Alzheimer's disease
- The damage caused by stress can be assessed and reversed
- Take stress seriously and start correcting it today

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### Stress and Your Body

It is said that stress is a killer. But most of us don't interpret that literally. We know that stress is bad for our health, but few of us are aware of the role it can play in producing such real killers as diabetes, heart attacks and strokes. Recent evidence even suggests that it has a strong correlation with the development of **de-mentia** and **Alzheimer's disease**.

"Stress can wreak havoc with your metabolism, raise your blood pressure, burst your white blood cells, make you flatulent, ruin your sex life, and if that's not enough, it damages your brain," writes Robert M. Sapolsky, Ph.D., a neuroendocrinologist and author of the critically acclaimed book *Why Zebras Don't Get Ulcers* and *Stress, the Aging Brain*. What's important to remember, writes Sapolsky, a professor of biological science and neuroscience at Stanford University, is that effectively managing your stress can be a powerful weapon against serious illness.

#### How does stress affect my body?

Stress is our reaction to any situation that frightens or worries us. In response to a threatening trigger, our bodies produce **adrenaline**, a hormone that speeds up heart rates, produces rapid breathing, and increases alertness and vigilance.

Short-term bursts of stress are not necessarily bad; in fact, they can trigger chemicals that can improve your memory, increase your energy, and cause you to become more alert and productive. If you're



a zebra, and a hungry lion is chasing you across the savanna, the resulting adrenaline makes you run faster, think quicker, and swiftly remember how you saved your skin the last time.

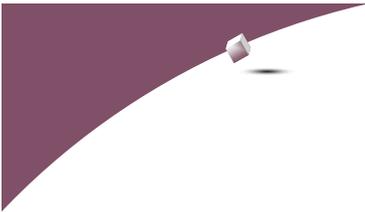
However, zebras, and most other mammals for that matter, don't suffer chronic stress the way humans do. Once the zebra escapes from the lion, his stress is over (until the next predator comes along). Zebras don't have mortgages, traffic jams, or unpaid overtime. They don't worry about paying the bills, getting sick, or being accepted into a good college. Experts say it's chronic stress that is such a threat to human health.

Chronic stress -- living under stressful conditions for long periods of time (weeks, months or even years)-- can have a profoundly negative impact on your body. When we experience a threat,

whether it's physical or psychological, our bodies go into overdrive. Activity in the sympathetic nervous system rises and the adrenal glands release the hormones epinephrine (or **adrenaline**) and norepinephrine into the bloodstream. At the same time, the adrenal glands also release **cortisol**, a hormone that sends the body the message to release fatty acids for a burst of energy. This nervous system and hormonal activity cause digestion to slow down, blood sugar levels to rise, and the heart to pump

more blood to the muscles. This is useful when a car is swerving toward you, but damaging when these hormones are in overdrive too often. Not only does chronic stress contribute to stomach problems, constipation, diarrhea, and more frequent colds and respiratory infections, it can also undermine long-term health.

It's now known that high levels of **cortisol** "take a toll on our bodies and can worsen inflammatory conditions such as colitis and eczema, as well as autoimmune disorders like rheumatoid arthritis, lupus, and multiple sclerosis," says David Katz, MD, director of the Yale Prevention Research Center in New Haven, Connecticut.



### Can Stress Cause Serious Illness?

There's strong evidence that stress is a contributing factor to conditions such as **high blood pressure, heart disease, and diabetes.**

As Sapolsky explains it, "If you constantly mobilize energy at the cost of energy storage, you will never store any surplus energy. You will fatigue more rapidly, and your risk of developing a form of diabetes will even increase. The consequences of chronically over-activating your cardiovascular system are similarly damaging: If your blood pressure

rises to 180/140 when you are sprinting away from a lion, you are being adaptive, but if it's 180/140 every time you see the mess in your teenager's bedroom, you could be heading for cardiovascular disease." In fact, Canadian researchers recently published a landmark study of nearly 25,000 people from 52 countries that identified the major causes of heart disease. The study found that lingering stress more than doubled the risk of heart at-

tacks, nearly putting it on a par with smoking.

Heart attacks and cardiac arrhythmias are both related to a surge in adrenal stress hormones known as catecholamines, which stimulate nerve chemicals, said Jianwei Feng, MD, cardiology fellow at the University of Texas Health Science Center in Houston.

**"Lingering stress more than doubles the risk of heart attacks, nearly putting it on par with smoking."**

### What can I do to reduce stress in my life?

The best strategies for dealing with stress involve making lifestyle changes to allow more time for rest and relaxation. Getting at least a moderate amount of exercise **every day** helps to ease tension and also leads to deeper, more restful sleep. A healthy diet and enough sleep every night are useful in controlling your stress levels as well.

Relaxation techniques can

also help. Try breathing exercises, such as inhaling a deep breath and holding it for as long as you can before letting it out, or progressive relaxation therapy, which involves tensing then relaxing your muscles bit by bit, starting with your toes and going all the way up to the top of your head. Meditation is a great stress-

fighting technique, as is yoga, tai chi, or doing stretching exercises. Do some experimenting to find out what method of relaxation works best for you. In the long run, it might just save your life.

### Why can't I sleep? Why am I exhausted all the time?



Compared with good sleepers, people with insomnia secrete more cortisol in the evening before bedtime and in the first half of their sleep; they also have more fast brain-wave activity in non-rapid eye movement (NREM) sleep, both indicators of arousal.

Stress is the principal cause of the insomnia that plagues so many millions of Americans.

How does stress cause insomnia? To understand that, we must first know a little bit about the physi-

cal processes that occur when we fall asleep. Falling asleep is a natural process that involves a distinct sequence of events in the body. As we approach sleep, there is a gradual lowering of metabolism. Our heart rate slows and our blood pressure declines. Our breathing becomes more regular, and we consume less oxygen. At the same time, there are changes in the processing activity of the brain. The activity of neurons in the cerebral cortex becomes first slower, and then more synchronized, indicating a

shift away from the complex, activated patterns of waking consciousness and toward a homogenous, deactivated state. As a result, we cease to process the sensory messages coming in from the outside world, and we slip into quiet sleep. The adrenal hormone cortisol is a trigger of the stress response. That's not cortisol's only job, however. In addition to the sharp transitory peaks of cortisol secretion that characterize the stress response, there is also a daily, cyclical rise and fall of cortisol

**Why can't I sleep?** Continued from page 2.

levels that govern our level of wakefulness throughout the day and night. Cortisol is excitatory; it arouses us and wakes us up. Blood levels of cortisol have been shown to increase between 50 and 160 percent within thirty minutes of waking; that produces the powerful jolt of arousal needed to wake us up and get us moving in the morning. Then, cortisol levels should decline as the day wears on and reach their lowest point in the evening, allowing us to rest, relax, and sleep.

But, as we know, cortisol levels can also be affected by the conditions of our daily existence. Dan-

gerous, demanding, or threatening events-stressors-cause us to temporarily secrete higher levels of cortisol. That's a good thing, because we need to be aroused in order to answer the challenges that arise in the course of our lives. But when, as a result of prolonged or unremitting stress, whether real or perceived, our cortisol levels get stuck at a chronically higher level, that's bad news for our bodies and minds, and especially bad news for our ability to sleep and rest. Chronic oversecretion of cortisol leaves us chronically hyperaroused. Numerous studies indicate that insomnia is accompanied by excessive activation of

the stress-response system not only during waking hours but during sleep as well. Furthermore, chronically elevated levels of cortisol and its precursor, adrenocorticotrophic hormone (ACTH), can make sleep shallow, fragmented, and unrestful; delay the onset of sleep; and produce more frequent nocturnal awakenings.

Stress is the principal cause of insomnia. Stress hormones are excitatory. When stress becomes chronic, we become chronically excited, or hyperaroused. When we're chronically hyperaroused, we can't sleep, and the sleep we do get is not as restful.

**"I couldn't sleep and I was tired all the time. Now I sleep through the night and have energy during the day. I wish I had done this 15 years ago. This test and treatment saved my life."**  
ST, Denver, CO

**Assess your stress and the toll it is taking on your body.**

Rate the questions below between 0 and 3. 0 being least/never and 3 being most/always.

- Can not stay asleep 0 1 2 3
- Crave salt 0 1 2 3
- Slow starter in AM 0 1 2 3
- Afternoon fatigue 0 1 2 3
- Dizziness when standing up quickly 0 1 2 3
- Afternoon headache 0 1 2 3

- Can not fall asleep 0 1 2 3
- Perspire easily 0 1 2 3
- Under high amounts of daily stress 0 1 2 3
- Weight gain when under stress 0 1 2 3
- Wake up tired after 6 or more hours of sleep 0 1 2 3
- Excessive sweating/sweating with little exertion 0 1 2 3

**Ideally all of your answers**

**should be 0** and your total of all answers should be 3 or less. If you answered 2 or 3 on any question or your total score is greater than 6, stress may be affecting you very severely and you should have these effects evaluated.

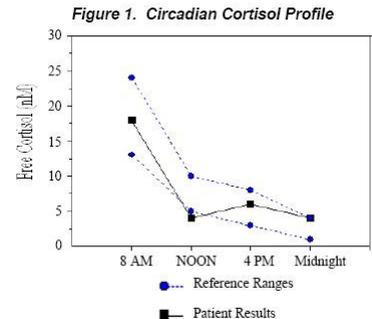
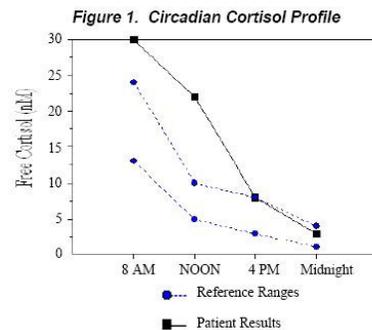
**How we handle the worst cases.**

The non-invasive Adrenal Stress Index (ASI) test is the ideal way to evaluate the effects of stress on your physiology.

For the worst cases who find they cannot manage cortisol on their own, we measure it. The stress hormones are supposed to rise and fall with the time of day, and we see this vital data right on your ASI lab report (see figures at right). This lab test is a window allowing us to see the physiological effects of stress on

your body and helps us design your custom combination of natural, scientifically crafted herbal supplements for your specific condition. We even tell you what time of day you need each supplement based on the data. Major university research departments trust the saliva cortisol index when they study stress. For example, the DU psychology department uses this to quantify stress in their published, peer-reviewed research.

The graph on the top right shows an abnormally elevated cortisol profile. This patient was having significant sleep disturbance, dizziness and an inability to concentrate. The graph below, demonstrating a nearly normal cortisol profile, shows her after just two months of supplementation. Her sleep disturbance is 90% improved, her dizziness is gone and she is able to concentrate and be productive.



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Our mission is simple: to be Denver's first choice in alternative health helping as many people as possible to achieve and maintain the good health they deserve.

At Activa you will be a partner in designing a treatment plan specific to you. *There are no cookie-cutter approaches at Activa.*



### I want to feel better! Where do I start?

You have made a very good decision to take the steps necessary to feel better.

Correcting the changes that stress has caused in your body that are damaging the quality of your life is possible but it is a process—a process that takes some time and commitment on your part. There is no instant gratification, but the gradual changes that take place are remarkable and can dramatically enhance the enjoyment of your life.

The best place to start is by

going to our website, [www.activachiropractic.com](http://www.activachiropractic.com), click on the Map, Contact and Forms page, then download and fill out the Metabolic Assessment and the Neurotransmitter Assessment. After filling out these forms, assess them for yourself. Remember, the best answer for every question is 0. If there are sections on these forms where you have circled many 2's and 3's, stress may be affecting you **very severely**.

Make an appointment with Dr. Turnbull or Dr. Pierce to

discuss your Metabolic and Neurotransmitter assessment forms. The doctors will work with you to determine the best course of action to correct your underlying stress related conditions. The best part about this visit is that it is **FREE!**

Call Cheryl today and ask to schedule your **free stress evaluation** with Dr. Turnbull or Dr. Pierce.

**Feeling better is just a phone call away...720-941-5000!**