

Stress

“In my life, I have suffered many terrible experiences. Some of which actually happened.” -Mark Twain

All of us have witnessed the physical damage stress can wrack on the body. My friend – I’ll call her Patty – was a 40-year-old nurse whose symptoms began after she took on a second job with a group of five physicians specializing in critical care internal medicine. She worked five days a week, averaging 10 to 12 hectic hours a day.

Patty’s symptoms started approximately two weeks after beginning work there. She had weight loss, decreased appetite, neck pain, headaches, heart palpitations, anxiety, insomnia and heartburn. She sought help from one of the doctors she worked for, who prescribed an assortment of pharmaceuticals for her symptoms. Rejecting the drugs, she sought a second opinion from Dr. Ross Gordon, in Albany, California, who specializes in identifying causes, not just treating symptoms.

By the time Patty saw Dr. Gordon she was also experiencing “vice-grip” attacks of chest pain and panic attacks that resulted in a loss of consciousness for several minutes. What puzzled her the most was that these episodes occurred while at rest rather than at work. Dr. Gordon diagnosed high blood pressure, hyperadrenalism and possibly low blood sugar. He believed her adrenal glands were producing too much adrenalin, causing the high blood pressure and chest pain, and her poor diet was causing low blood sugar, resulting in the fainting episodes.

He ordered her to stop eating all sources of sugar, caffeine, saturated fats and alcohol. He told her to instead eat fruits, vegetables and grains in the form of a snack every two hours or so to maintain a constant blood sugar level; walk or do some form of aerobic exercise at least 30 minutes daily to burn up the excess adrenalin; and he put her on an anti-stress nutritional supplementation regimen which included a multi-vitamin supplement, extra vitamin C and a multi-mineral supplement in solution that includes calcium, potassium and magnesium. For her insomnia, he also included tryptophan. Foods that contain tryptophan include: turkey breast meat, wheat germ, granola and oats. It is available in its natural form in amino acid formulations. If you are interested in using it therapeutically, ask your doctor. My sources tell me some doctors are prescribing it in therapeutic dosages.

Patty returned to Dr. Gordon’s office one month later. After beginning the regimen he prescribed, her chest pains and panic attacks disappeared completely, she gained back five pounds and her blood pressure stabilized. Her headaches and neck pain were much better and the tryptophan was helping her sleep. She called the office two months later to tell Dr. Gordon that she left her job and found a position with an alternative medicine physician. By that time her symptoms had completely disappeared.

The Physiological Effect of Stress

The body’s endocrine system – essential to a properly functioning immune system – may be one of the first victims of stress. What can happen is that a long term poor diet, a lack of exercise and emotional stress can so exhaust the adrenals that the metabolic response of the body is to produce more adrenaline, a type of hormone. Have you ever experienced a hot flash of embarrassment or a “rush” of adrenaline when on a roller coaster? Or, do you know the feeling when you’re very angry or frightened and blood rushes to your head and you feel almost dizzy? These are your adrenals’ responses to stress.

The two adrenal glands sit beside each kidney, deep in the back part of the stomach. Each gland has two parts, a cortex or outer part, and a medulla or central portion. The medulla is what responds to stress by secreting adrenalin (epinephrine) and noradrenalin (norepinephrine). These hormones are what make you dizzy, light-headed or suddenly forget that word you’ve been grasping for. They are designed to “rev up” the nervous and metabolic systems in preparation for the needs required by a stressful situation, which, in the case of stage fright and writer’s block, can sometimes cause their own problems.

When stress is constant, the adrenals become overloaded, and your body suffers. Adrenaline increases your heart rate and blood pressure, causing your veins to dilate and blood sugar to rise. Circulation through your lungs, liver and skeletal muscles increases by as much as one hundred percent. The released adrenaline can give you indigestion, make you infertile and cause you to be malnourished. While you aren't necessarily conscious of all the changes that take place, what you might notice is your jaw clenching, stomach tightening and palms sweating.'

The stressors don't have to be "real," either. What happens to you when your boss comes to you to announce, "Do you have some time later? I need to talk to you." Your mind goes through the worst possible scenario, and you're a nervous wreck until the mystery is solved.

According to Dr. Maxell Maltz, author of *Psycho-Cybernetics* and other self-help books, "The human nervous system cannot tell the difference between an 'actual' experience and an experience imagined vividly and in detail." Therefore, it is important for us to control imaginary stresses, especially if they evoke the same emotional response as the real situation. In fact, thinking about a given situation without actually being physically involved may be more harmful. Researchers have found that people watching a sports event released a higher proportion of adrenaline than those actually playing. Participants were also found to release proportionately more noradrenaline, the chemical that controls your stress reactions and puts the brakes on adrenaline.

While some stressful episodes may seem to cause no lasting harm, over time pent up anxiety from overreacting to real or imagined crises adds up. Eric Peper, Ph.D., associate director of the Institute of Holistic Healing Studies at San Francisco State University, says that up to 80 percent of health problems today are considered stress-related.' These include high blood pressure, heart disease, ulcers and an inability to fight infections.

The Nutritional Response to Stress

Follow along while I put the pieces of the puzzle together. Nutritional needs of the body skyrocket during stress. When I talk about stress, I mean pressure from any source; whether it be that winter cold, the death of a relative, impending surgery, or the surgery itself-anything that stresses the system, mentally or physically. And just when you need it the most, your resistance to illness falls in direct proportion to the depletion of certain vitamins and minerals caused by the stress.

Vitamin C is the first vitamin to come under stress in any tissue. During this time, vitamin E, pantothenic acid, vitamin A, and all the B vitamins are used up in massive amounts. The body withdraws minerals from bones, teeth, hair, organs, and other tissues to meet the demands of defense, and breaks down protein from itself to create more hormones and antibodies. Calcium, magnesium, phosphorus and potassium demands are also increased under stress.' As the body becomes deficient in essential nutrients, its ability to resist the stressors diminishes. If stress is prolonged for weeks, months or years, the body is unable to convert cholesterol into needed hormones. Physical symptoms can be the body's way of reacting to internal pressure and its subsequent nutritional deficiencies. Continued stress results in complete exhaustion and total collapse. "Nervous breakdowns," heart attacks, cancers, strokes, liver damage, and even kidney damage can be caused by constant stress. It can become a vicious cycle.

Stress-Reducing Nutrients

Nutrients don't reduce stress as much as they cushion the body's response to stress. You have to make life changes in order to reduce tension and pressure, but in the meantime, a daily supplement of borage oil, for example, will help your body overcome its dangerous effects. Borage oil is high in linolenic acid, an essential fatty acid that studies show inhibit abnormal adrenaline release' and control the body's impulse to raise blood pressure and increase the heart rate. Researchers at the University of Waterloo, Ontario, Canada, found that when 30 men were randomly given three forms of essential fatty acids: fish oil, borage oil and olive oil, only those receiving the borage oil did not have increased blood pressure or heart rate as a response to stress. Not only that, but they were able to think clearer during stress.' Imagine that benefit the next time you are confronted by an angry person and wish you could think of something witty to say. I'd say presence of mind is a very desirable trait to have when confronted with a stressful situation, whether it be a driver's exam or an angry neighbor.

Magnesium has been shown in studies to reduce the stress response. Following a natural disaster, you usually hear about one or two people dying from heart attacks. Obviously, the anxiety of the earthquake, flood or bomb triggered

the fatality. Stress coupled with a deficiency of magnesium can cause a fatal heart attack.' When people with cardiovascular problems and low magnesium intake try to improve their health with strenuous exercise, such as jogging, they could be endangering their health. Magnesium requirements are markedly increased during stress, and the heart is much more susceptible to arrhythmias during physical exertion if the body's magnesium level is low.' Many cases of sudden heart attacks during stressful exercise can be directly attributed to a magnesium deficiency.

Austrian researchers performed a placebo-controlled trial of 17 healthy individuals between 24 and 51 years of age who received 400 mg of magnesium for 10 days. Following that, they were given a physical stress test and concluded that the magnesium appeared to have a calming effect on stress reactions with respect to blood gas changes and white blood cell changes." In other words. The magnesium prevented some of the stress-induced changes that cause heart problems and encourage illness.

Magnesium deficiency is more common than you might expect. A large study by the U.S. Department of Agriculture found that only 25 percent of 37,785 individuals had magnesium intakes at or greater than the recommended daily allowance, which is notoriously low. A 1995 review of 15 studies found that a typical diet contains only a fraction of the RDA.' 1

The average American diet supplies about 120 mg of magnesium per 1,000 calories. Green leafy vegetables are particularly good sources of the mineral, as are dry beans and peas, soybeans, nuts and whole grains. High losses of magnesium occur in the refinement of foods, and some losses result when cooking water is discarded.

Important to remember is that magnesium must be balanced with calcium and potassium.

During stress, your body needs so much more vitamin C that you can be deficient to the point of getting symptoms of scurvy. Symptoms include swelling and bleeding of the gums, muscle pain, discolored skin and increased susceptibility to bruising and infection."

Garry Gordon, M.D., recommends 1,000 milligrams an hour of vitamin C when sick or severely stressed." Researchers at the Department of Poultry Sciences, Louisiana State University, Baton Rouge, decided to evaluate the effect of vitamin C, in the form of ascorbic acid, on chickens that were slated to be slaughtered. Thirty-two hours prior to slaughter the chickens were given either ascorbic acid in their drinking water or only tap water. The birds were then stressed for eight hours prior to being killed. Blood tests performed just prior to and just after slaughter revealed that the ascorbic acid supplementation reduced the chickens' adrenal stress response." I do think it might have been possible to perform the same tests on students about to undergo an arduous final exam, rather than subject innocent animals to torture in the name of science. I do not advocate torturing animals for any reason.

In her book *Let's Get Well*, (Harcourt, Brace & World, p. 165), the late Adelle Davis confesses that stressful work on her book with many sleepless nights led to an alarming condition – her hair falling out and receding at the temples. Immediately, she slept more and went on her anti-stress formula: 500 mg of vitamin C, 100 mg of pantothenic acid, and two mg each of vitamins B2 and B6 with each meal, between meals and every three hours during the night when awake. Additionally, Adelle took half a teaspoon of inositol, five mg of folic acid, 50 mcg of biotin and 300 mg of PABA. New hair came in thick and vigorous, and even went back to its original color.

If I were asked to target any one stress reducing vitamin, I would pinpoint all the B vitamins. Certain B vitamins are deficient in patients with severe depression, not surprising when you realize that the B vitamins have a major role in the central nervous system.

A McGill University study of depressed patients found that their levels of folic acid, another B vitamin, were far lower than those of medically ill patients. This was also borne out in research at the Royal Victoria Hospital in Montreal. It indicates that a lack of folic acid could contribute to depression."

On any program of anti-stress, always supplement with a good, naturally-derived B vitamin formula. All the B vitamins together are necessary to get the benefit of any one.

Stress reduces the amount of zinc stored in the body. One study of volunteers found that, although they had more than adequate zinc to begin with, the amount was reduced by an incredible 33 percent when they were under stress." Zinc is required to repair wounds in the skin and body tissue. It is also necessary to absorb the B vitamins. Copper is important to balance out your zinc supplements. Be sure and include 2-4 mg of copper with any zinc supplement.

Exercising Off the Adrenaline

Exercise is essential for any program of stress relief. The reason the adrenals spit out more hormones when you are under pressure is so you may be physically ready to fight or run. Every once in a while I read where somebody under stress performs some incredible feat of strength, lifting a car to save someone, for example. If that person had not taken action when his body told him to, he would have suffered. Stress requires a physical outlet to “work off” the excess hormones so they don’t turn inward and damage the body.

Another issue with exercise is the fact that it takes effort. This positive action can make all the difference. Take menopause for instance. The incredible changes the body undergoes, coupled with the realization that childbirth is no longer possible takes an incredible toll on the body. Who knows how many symptoms attributed to “the change of life,” are in actuality adrenal stress responses? I’ve found that women with strong adrenals have no problem with menopause.

Karen Matthews, a professor of psychiatry, epidemiology, and psychology at the University of Pittsburgh School of Medicine, has identified the characteristics of those who experience few problems in menopause compared to those who experience many.

“The women who do well respond to menopause with action,” she says. “That may not be their direct intention, but they end up coping with the stressor by making positive changes. For example, those who step up their exercise regimen don’t even show the biological changes, such as the adverse shifts in lipids implicated in coronary disease, that others do.”” Let me end this chapter by going back to Patty, the nurse who was cured with Dr. Gordon’s anti-stress regimen. She maintains contact with the doctor to this day, and says she has found the most relaxing and reassuring book to be the Bible, which she reads nightly. She has found many scriptures which she feels were written for her. Dr. Gordon received one from her recently: Fear thou not for I am with thee. Be not dismayed for I am thy God. I will strengthen thee, yea, I will help thee, yeah, I will uphold thee with the right hand of my righteousness. -Isaiah 41:10 – 1 Peter 4:12,13.

Less Stress Nutrients

For maximum absorption, take supplements with meals.

<i>Nutrient</i>	<i>Suggested Dosage</i>	<i>Formulation</i>
Aged garlic extract	1 teaspoon three times daily	Liquid
Antioxidants	4 capsules daily*	With selenium and grapeseed extract
Borage oil	2 capsules daily	
Coenzyme Q10	2 capsules daily	With vitamin E, phospholipids and selenium
Fiber	4-8 tablets daily	Psyllium, with herb hyssop
Flaxseed oil	1 tablespoon daily	
Folic acid	5-10 mg daily	
Magnesium	200 mg daily	
Multi-mineral	3-4 ounces daily	Liquid solution, with vitamin B12, biotin
Multi-vitamin/mineral	6 caplets daily	Freeze-dried plant sources
Niacin	500 mg four times daily	
Taurine	500 mg twice daily	
Vitamin B6	100 mg daily	
Vitamin C	Individual bowel tolerance**	+Bioflavonoids (quercetin, rutin, proanthocyanidins)

* The FDA recommends pregnant women not exceed 10,000 IU of vitamin A daily.

** To determine individual dosage, on the first day take 1,000 mg hourly until diarrhea occurs, then reduce dosage to just below that for individual daily dosage. Vitamin C is not toxic in large doses but must be taken throughout the day to benefit. Divide dosage to three or four times a day.

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