

Is Stress Making You

Fat?

Tension-reducing strategies to try when you're craving those high-calorie comfort foods.

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Some people handle stress by undertaking great challenges and reaching for the stars. Many of us, however, react to pressure by reaching for a bag of chocolate chip cookies. The relationship between stress and eating behavior is complicated. Does stress simply reduce our willpower to make good food choices, or does it actually increase our appetites? And in addition to widening our waistlines, can stress increase our risk for serious health problems, such as cardiovascular disease and diabetes?

This article examines the human stress response and how it can contribute to weight gain and other undesirable conditions. Also provided are practical strategies you and your clients can employ when the urge to reach for the junk food is overpowering!

The Human Stress Response

The human stress response is a powerful reactive function, elicited to empower the body to either elude a pursuing enemy or fight off imminent danger. Our stress response is intended as a short-term solution to a short-term problem. In today's world, however, we seldom face the kinds of physical dangers that would require such a response. Rather, our modern-day enemies are overloaded schedules, traffic jams, belligerent bosses, financial pressures and a host of other worries. And while these foes may not be ferocious in the short term, they are formidable and can be deadly over the course of our lifetimes.

When faced with a stressful situation, our brains signal the adrenal glands to release a hormone called **cortisol**. Cortisol, in turn, releases glucose and fatty acids into the bloodstream in order to provide energy to the muscles. Cortisol also has a direct impact on the body's blood sugar levels. If too little cortisol is released, hypoglycemia can develop. If too much cortisol is released, hyper-

glycemia can develop, which can increase the risk for developing diabetes (Greenspan & Baxter 1994). High levels of cortisol also result in increased appetite and fat deposits, typically in the cervical area, trunk and abdomen, producing a "spare tire" phenomenon (Greenspan & Baxter 1994).

When stress is chronic in nature, cortisol levels remain elevated for long periods of time. Eventually, the adrenal glands become overworked and the cortisol release becomes lowered, or blunted. Researchers studying the link between stress and weight gain have found that men with a blunted pattern of cortisol secretion response were more likely to have increased body fat around the waist, higher blood pressure and blood sugar imbalances (Rosmond et al. 2000). The researchers theorized that "adrenal exhaustion itself may then trigger a vicious cycle of hormone imbalances linked to cardiac dysfunction and increased obesity in men." The same effect has frequently been seen in women.

Research also suggests that cortisol, in addition to being associated with diabetes, elevated blood pressure, obesity and cardiovascular disease, may somehow be linked to mental disorders, such as depression. One study found that obese adults who experienced the stress of childhood abuse or abandonment continue to have a heightened cortisol response to even minor stressors many years later and are more prone to chronic depression and marital family dysfunction later in life (Felitti 1993).

For more information on the effects of cortisol, see "How the Stress Hormone Cortisol Affects the Body" on the next page.

Stress & Eating Patterns

Not only does stress increase our appetites, but typically it also makes us crave foods that are calorie laden and contain few nutrients. Unfortunately, no definitive research has determined why stress-eaters make bad food choices or why they tend to grav-

how the stress hormone cortisol affects the body

When faced with a stressful situation, the adrenal glands release a hormone called **cortisol**, which can:

- regulate carbohydrate, lipid (fat) and protein metabolism
- affect muscle tone and microcirculation
- elevate blood pressure
- increase gastric secretion
- alter connective tissue response to injury
- impair cartilage repair
- increase inflammation
- shrink lymphatic tissue
- increase allergic and immunological responses
- stimulate the central nervous system
- increase appetite and fat deposits, especially in the cervical area, trunk and abdomen
- increase the risk for developing diabetes

Source: Greenspan, F., & Baxter, J. 1994. *Basic & Clinical Endocrinology (4th ed., pp. 316-9)*. Norwalk, CT: Appleton & Lange.

include the recommended amounts of protein, carbohydrate and fat in each meal. A well-balanced breakfast that provides all three of these macronutrients helps keep blood sugar levels steady throughout the day, reducing the tendency to reach for a candy bar or soft drink. Between meals, “graze” on snacks, but be sure they are real foods, not processed foods. Keep in mind, also, that food allergies can develop when the adrenal gland is exhausted due to prolonged stress. Some of the most common allergies are triggered by wheat, corn, dairy and soy products. Seek the advice of licensed nutrition professionals if you experience a reaction to any of these products during periods of stress.

4. Replenish Vitamin and Mineral Stores.

Stress causes the body to “burn” more vitamins and minerals, specifically vitamin B complex, magnesium and zinc (Seelig 1992); these nutrients are needed for blood sugar balance, and when their levels drop, stress levels increase. Also, the adrenal glands require more vitamin C and pantothenic acid (a member of the vitamin B complex) during stressful times. To offset these needs, it is vital to eat adequate servings of fresh vegetables and fruits daily. You may also want to consult a licensed nutrition professional for advice on vitamin and mineral supplementation.

5. Get Physical. Moderate exercise can help reduce the body’s production of cortisol during stressful times. Physical activity also has a calming effect on stressed individuals. Numerous studies have shown that moderate exercise helps modulate mood, reduces stress, improves self-efficacy and self-esteem, and reprograms the brain for optimism instead of pessimism (Brownell 1995). Maintain a consistent exercise program that combines both aerobic and anaerobic training. Don’t overdo it, however. Taking all your frustrations out during a vigorous, intensive workout will further increase cortisol production.

6. Avoid Dieting. Don’t try to deprive

itate toward certain types of foods over others. Some stress-eaters desire high-energy foods containing sugar, especially chocolate. Others prefer salty foods like potato chips or pickles. Then there are the stress-eaters who enjoy crunchy foods like potato chips, popcorn and crackers. One author compared these foods to a “punching bag,” whose crunchy texture provides a “cathartic outlet for all the tension held in the jaw” (Virtue 1995). “Even the crunching sound is reassuring, reminding us of our power as we crush every morsel with our teeth” (Virtue 1995).

Although many people automatically overeat at the first signs of stress, others initially shun food during stressful periods. However, after some initial weight loss due to a reduction in food intake, approximately 40 percent of these individuals typically begin to eat excessively six to seven weeks later and ultimately weigh in above their original weight (Simonson 1990).

Seven Stress-Reducing Strategies

Is there a more useless phrase in the English language than “Calm down!”? Getting past stress is much more difficult than it sounds, but it is possible to take charge of one’s reactions to life’s pressures. To help your clients (and yourself) combat stress, here are some practical techniques for reducing the stress response that contributes to overeating:

1. Don’t Worry, Be Happy. Instead of seeking comfort in food, engage in a pleasurable activity that pampers you. In other words, do something fun that doesn’t involve calories! And when your clients complain of unrelenting pressure, help them create a stress-busting itinerary. You might suggest the following options:

- Take a nap.
- Get a massage.
- Visit a friend.
- Read a book.
- Watch an old movie.
- Go dancing with a spouse or friend.

- Sip a cup of herbal decaffeinated tea.
- Go for a walk (preferably on the beach or along another body of water).
- Play games with your kid.

2. Take Charge of the Situation. When faced with a stressful event, ask yourself what you can change to minimize the pressure. We are never without workable options, even during the most stressful times in our lives. Elect to take charge of the situation instead of being victimized by it. In the process, your body will reduce the amount of cortisol it produces, which can minimize the harmful effects of prolonged hormonal release.

3. Eat a Variety of Real Foods Throughout the Day. Because stress affects blood sugar, it is important to eat healthy meals throughout the day to maintain blood sugar levels. Stress-eaters tend to reach for sugary carbohydrates, so be sure to

yourself of any one food group, especially during stressful periods. High-protein diets that restrict carbohydrates do not provide sufficient energy to shore up flagging energy levels. High-carbohydrate diets that restrict fat and protein cannot fuel the energy demands of the heart or maintain lean muscle mass in the face of increased muscle breakdown. Instead, choose a well-balanced, natural-foods diet, which will provide the structural components for protein synthesis and supply adequate energy. And rather than dieting, restrict your food portions by using measuring cups and smaller plates, and quit eating once you are naturally satiated.

7. Get Plenty of Rest. Research has shown that most Americans get at least 1½ hours too little sleep per night (Bonnet & Arand 1995). Sleep deprivation affects blood sugar levels, reduces the production of human growth hormone, increases the secretion of cortisol and reduces the production of leptin (a hormone that signals satiety). Make it a point to go to bed a little earlier each night during especially trying times and aim for at least eight hours of sleep. Rest is restorative to the body, especially the nervous system and the adrenal glands.

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