



## Stress and Obesity

### Stress Defined

A person's stress response describes the condition caused by a reaction to physical, chemical, emotional or environmental factors. Stress can refer to physical effort and mental tension. It's hard to measure emotional or psychological stress in a precise way. However, we do know that the body reacts to stress by releasing hormones, such as adrenaline which prepares the heart and body to respond to a challenge.

### Hormones

When you are under stress, your body releases several hormones. Two of these, epinephrine and norepinephrine, trigger the fight-or-flight response. The third, cortisol, provides the energy for this response by stimulating insulin release and rapid fat and carbohydrate metabolism. This increases the appetite for high-starch, high-fat foods. If you are under constant stress, your cortisol levels will remain elevated.

To add insult to injury, research has found that high cortisol levels are linked to a tendency to store excess fat in the abdomen (rather than in the hips, thighs, and buttocks). Abdominal fat is particularly dangerous as it places a greater strain on the heart and is also associated with increased risk of cancer and diabetes. Even healthy-weight individuals who are "high-stress responders" have been found to store extra abdominal fat.

Stress also inhibits the release of serotonin, a neurotransmitter that affects appetite, mood, learning, and memory. Carbohydrates help increase serotonin levels, producing a calming affect. It is little wonder that high-carbohydrate foods like breads, pastas, and sweets are sometimes called "comfort foods."

Fortunately, natural stress relief remedies, such as adaptogens, have been shown to help the body eliminate the damaging effects of stress. All people feel stress, but they feel it in different amounts and react to it in different ways.

### Studies

A 1999 study reported by the Centers for Disease Control and Prevention indicates that sixty-one percent of adults in the U.S. are overweight. A breakdown of that figure shows that thirty-five percent are slightly or moderately overweight, and that twenty-six percent are obese or super obese. In addition, about thirteen percent of U.S. children are overweight or obese.

Another government study published in October, 2002 indicates that thirty-one percent of the American public is obese. It further suggested that fifteen percent of young people between 6 and 19 are seriously overweight. Even ten percent of toddlers between 2 and 5 are seriously overweight. The study appeared in the Journal of the American Medical Association (10/9/02).

A more recent study indicates that about 31 percent of American teenage girls and 28 percent of boys are somewhat overweight. An additional 15 percent of American teen girls and nearly 14 percent of teen boys are obese. (Archives of Pediatrics and Adolescent Medicine, January 2004) Causes include fast food, snacks with high sugar and fat content, use of automobiles, increased time spent in front of TV sets and computers, and a generally more sedentary lifestyles than slimmer peers.



The prevalence of overweight and obesity is increasing in all major socioeconomic and ethnic groups, including children and younger adults between 25 and 44. (David Sacher, U.S. Surgeon General, December 2001)

Research published in Proceedings of the National Academy of Sciences by Mary Dallman, professor of physiology at the University of California at San Francisco, suggested that there is a biological link between stress and the drive to eat. Comfort foods -- high in sugar, fat, and calories -- seem to calm the body's response to chronic stress. In addition, hormones, such as cortisol, produced when one is under stress encourage the formation of fat cells. In developed countries, life tends to be competitive, fast paced, demanding, and stressful. There may be a link between so-called modern life and increasing rates of overeating, overweight, and obesity.

## Health Problems

Stress and obesity go together. In essence, stress itself is not negative but its outcomes are. Overweight-ness and obesity are related to stress in more than one ways. Stress may leads lack of control of over eating. Stress is associated with bad nutritional habits like eating much more rapidly than normal or eating until feeling uncomfortably full.

Being overweight increases the risk for a number of health problems. Obese patients are about twice as likely to die from cardiovascular disease (such as heart disease and stroke). Overweight people are at higher risk for high blood pressure, high cholesterol, and diabetes.

The American Obesity Association reports that persons with obesity are at risk of developing one or more serious medical conditions, which can cause poor health and premature death. Obesity is associated with more than a staggering 30 medical conditions, and scientific evidence has established a strong relationship with at least 15 of those conditions. Preliminary data also show the impact of obesity on various other conditions. Weight loss of about 10% of body weight, for persons with overweight or obesity, can improve some obesity-related medical conditions including diabetes and hypertension.

Obesity is associated with an increased risk of, osteoarthritis of the hand, hip, back and knee, rheumatoid arthritis in both men and women, breast cancer in post menopausal women, cancer of the esophagus, colorectal cancer, c cardiovascular disease due to effect on blood lipid levels, death from heart disease, carpal tunnel syndrome, daytime sleepiness and sleep apnea, deep vein thrombosis, type 2 diabetes – as much as 90% association, gallbladder disease, gallstones, gout, heat disorders, hypertension – as much as 75%, impaired immune system response, impaired respiratory functions, incidence of wound infection, infertility, liver diseases, low back pain, menstrual disturbances, joint related pain, sleep apnea – as much as 70%, stroke, surgical complications, prostate cancer, hernia, skin disorders, endocrine (hormonal) abnormalities and type 2 diabetes – as much as 90% association.

The Harvard Medical Newsletter, Focus, reported that the link between obesity and diabetes is so clear that a new word has been coined to describe it: diabesity. But researchers cannot say how, exactly, eating too many calories causes the insulin resistance that often leads to diabetes.

Scientists have come to view fat as surprisingly active, sending out inflammatory molecules, fatty acids, and hormones that conspire with other tissues, especially the liver, to sabotage insulin's job of escorting glucose into cells.

## Stress Management

For most people, being obese is a stressful experience. Many individuals are concerned about their physical health, but above all obesity is a stigmatized condition. How people deal with stress is an individual matter, and it affects their mental health. Among obese patients this was tied to the choice of treatment. Those who chose surgery made greater use of strategies that increase, rather than decrease, mental stress in the long run. Their capacity for dealing with stress, and thereby the sense of well-being, improved apace with their loss of weight.



Previous research has shown that long-term stress can lead to both depression and somatic problems, such as insulin resistance, increased blood pressure, deteriorated blood fat levels, and abdominal fat, adding up to what is termed "the metabolic syndrome." Enhancing the ability of obese patients to cope with stress should therefore be an integral part of weight-control treatment.

As noted, emotional stress, on the other hand, is bad for you especially if it is severe enough or chronic enough. There is considerable evidence and studies that confirm chronic emotional stress is associated with obesity which can lead to other diseases and early death.

## Stress Kills

Many factors come into play when determining the relationship between stress and obesity.

Stress is a mentally or emotionally disruptive or upsetting condition occurring in response to adverse external influences and can affect physical health; usually characterized by increased heart rate, a rise in blood pressure, muscular tension, irritability, depression, an impaired immune system and weight gain that can lead to obesity and propensity to increase the risk of other diseases.

Physical stress is generally acknowledged to be good. In fact, the lack of physical stress (i.e., a sedentary lifestyle) constitutes a major risk factor for obesity and tendencies to increase risk of other diseases and health conditions. So this kind of "stress" is usually considered to be good for the prevention of disease. But either way, physical stress, in of itself, does not cause obesity.

As noted, emotional stress, on the other hand, is bad for you especially if it is severe enough or chronic enough. There is a fair amount of evidence that chronic emotional stress can be indirectly associated with increasing the risks of obesity and associated diseases.

While emotional stress is a protective mechanism, people were designed with a hormonal surge of adrenaline - a fight or flight mechanism when facing danger such as confrontation with a saber-tooth tiger. As stated earlier, there is also a surge of the killer hormone, cortisol.

But in modern times, saber-tooth tigers are far and few between. The fight or flight response is not always the appropriate reaction to everyday stressful situations, let alone chronic or traumatic stress. Today, the adrenaline and cortisol surge that accompanies stressful situations builds up and has a damaging effect on the body - and can indirectly lead to an increased risk of obesity and associated diseases and poor health. Natural stress relief remedies such as Vitalife adaptogens can help eliminate the damaging effects of obesity.