Chapter 11 Stress

"Can Stress Affect My Weight?"

It's difficult to avoid stress. Stress enters our lives daily. It can impact your well-being and success on any type of fitness program. Here's basic information regarding stress and psychological factors regarding lifestyle changes.

Different Strokes for Different Folks

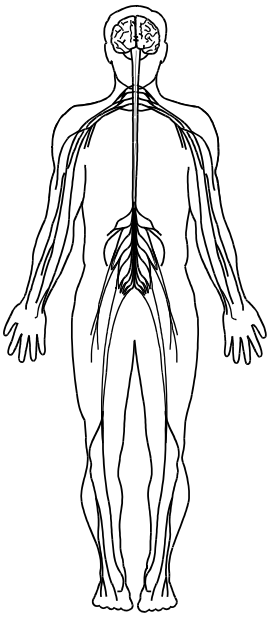
Stress can mean different things to different people. A roller coaster ride is a thrill to one person -- a terrifying experience to the next. There is good and bad stress. **Daily exercise** is an example of **good stress**. Stress can be defined as: wear and tear of life; adjustive demands made upon individuals to the problems of day-to-day living, or any physical or psychological threat to a person's well-being. Stress is essentially a good or bad **change** which evokes a generalized physiological response of the body to physical, psychological, or environmental demands.

Warning Signs

Emotional and **physical** reactions to stress can become bothersome. Most of us would like to avoid the point where they **overflow** and **disable** us. Therefore our bodies have provided a warning system.

Feelings Feelings are a good signal (anxiety, depression, anger, etc.). Unfortunately, most of us have learned to **suppress** feelings.

Bodily Reactions Body reactions are another good warning system to monitor stress including:



1. Easily overexcited, irritability, depression
2. Increased heart rate
3. Dryness of the throat
4. Impulsive behavior, emotional instability
5. The overpowering urge to cry or run and hide
6. Inability to concentrate
7. General disorientation, alcohol or drug addiction
8. Accident proneness
9. Feelings of unreality, general weakness, dizziness
10. Fatigue - paranoia
11. Body trembling, increased medication use
12. High-pitched nervous laughter
13. Stuttering
14. Grinding of the teeth (bruxism)
15. Insomnia, nightmares
16. Inability to take a relaxed attitude
17. Perspiring
18. Frequent urination
19. Diarrhea, indigestion
20. Neck or lower back pain
21. PMS
22. Migraine headaches
23. Loss of appetite

The Role of Hormones and Nerves

Throughout your body, all processes are **precisely** and **automatically** regulated by **hormone** and **nerve activity**. It is done so without conscious effort. The **central nervous system** acts as the control unit. It evaluates all activities both **inside** and **outside** your body to **monitor** and **adjust** to changing conditions.

The **stress response** illustrates how the entire body reacts to anything perceived as a **threat** to your **stability** or **equilibrium**.

Both **physical** and **psychological** stressors elicit the body's stress response. Major physical stressors include **surgery, burns**, and **infections.** Other major physical stressors include, an **extreme hot** or **humid climate, toxic compounds, radiation,** and **pollution**.

Also, chronic **"little stresses"** or **hidden day-to-day issues** can lead to real physical ailments. Good examples are:

1. Family conflicts;
2. "I hate my job";
3. Lack of time, or lack of organization;
4. Too much responsibility;
5. "No one understands why I'm stressed";
6. Rush hour traffic.

And then there are **major life changes** such as:

1. Death or loss of a loved one;
2. Serious illness or accident;
3. Divorce or separation;
4. Death of a close relative;
5. Getting fired or laid off of work;
6. Marriage;
7. Major personal property loss (fire, theft, vandalism);
8. New household member.

Stress response begins when your brain perceives a threat to your equilibrium. The sight of a car hurtling toward you; the terror that an enemy is concealed around a nearby corner; the excitement of planning for a party, a move, a wedding; the feeling of pain; a snarled traffic jam or any other such disturbance perceived by the brain serves as an alarm signal.

Alarm Reaction

Once the body perceives stress, it prepares to **fight** or **flee** from potentially threatening situations. A chain of events unfolds through **nerves** and **hormones** to bring about a **state of readiness** in every body part. The end result is a preparedness for physical action (fight or flight). Here is a brief description of your body's **alarm reaction** to stress:

The pupils of your eyes widen so that you can see better. Your muscles tense up so that you can jump, run, or struggle with maximum strength. Breathing quickens to bring more oxygen into your lungs, and your heart races to rush this oxygen to your muscles so that they can burn the fuel they need for energy. Your liver pours forth the needed fuels from its stored supply, and fat cells release alternative fuels. Body protein tissues break down to back up the fuel supply and to be ready to heal wounds if necessary. The blood vessels of your muscles expand to feed them better, whereas those of your gastrointestinal tract constrict; and gastrointestinal tract glands shut down **(digestion is a low-priority process in time of danger).** Less blood flows to your kidney so that fluid is conserved, and less flows to your skin so that blood loss will be minimized at any wound site. More platelets form, to allow your blood to clot faster if need be. Hearing sharpens, and your brain produces local opium-like substances, dulling its sensation of pain, which during an emergency might distract you from taking the needed action. Your hair may even stand on end- a reminder that there was a time when our ancestors had enough hair to bristle, look bigger, and frighten off their enemies.

Resistance

This tightly synchronized adaptive reaction to threat is one of the miracles of the human body. You may have performed an amazing feat of strength or speed during an alarm reaction to stress. Anyone can respond in this magnificent fashion to sudden physical stress for a **short time**.

But if the stress is **prolonged**, and **especially if physical action is not a permitted response** to the stress, then it can drain the body of its reserves and leave it weakened, worn, and susceptible to illness.

Much of the disability imposed by prolonged stress is nutritional; you can't eat, can't digest your food or absorb nutrients, and so can't store them in reserve for periods of need.

All three energy fuels- carbohydrate, fat, and protein -- are drawn upon in increased quantities during stress. If the stress requires vigorous physical action, and if there is

injury, all three are used. While the body is busy responding and not eating, the fuels must be drawn from **internal sources**.

Stress to Exhaustion

As for other nutrients, they are taken from storage -- as long as supplies last. But supplies for some are **exhausted within a day**. Thereafter, **body tissues break down to provide energy and needed nutrients.** The body uses not only dispensable supplies (those that are there to be used up, so to speak, like stored fat), but also functional tissue that we don't want to lose, like muscle tissue.

During **severe stress**, the appetite is **suppressed**. The **blood supply** is diverted to the muscles to maximize **strength** and **speed**. So, even if food is swallowed, it may not be **digested** or **absorbed efficiently**. In a severe upset, the stomach and intestines will even **reject** solid food. Vomiting, diarrhea or both are these organs' way of disposing of a burden they can't handle. To tell people under **severe stress** to eat is poor advise. They can't. And, if they force themselves to eat, they can't assimilate what they've eaten.

Stress, Overeating & Fasting

In times of less severe stress, a person may respond by **overeating**. Many people eat excessively in response to stress since **food can have a relaxing effect**. The release of some stress hormones often occurs when the body is in **need** of sugars. You can develop a conditioned response so that whenever stress hormone levels become high, you feel the need to eat. The stress hormone produces **insulin resistance,** which in turn leads to excess **insulin production, fat deposits**, and **inhibition** of fat **breakdown**.

On the other hand, **fasting** is itself a **stress on the body**. The longer a person goes without eating, the harder it is to get started again. So, it can be a **no-win situation**. It is a downward spiral when people let stress affect them to the point where they can't eat. And, not eating makes it harder for them to handle the stress.

Get a Handle on Stress

It's important not to let stress become so **overwhelming** that **eating** becomes **impossible**. To manage overwhelming stress may be a **psychological task**, and if too extreme may require the help of a counselor.

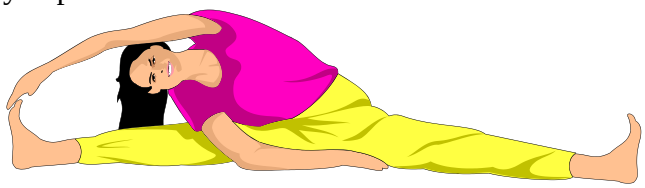
When you can't eat you will **lose nutrients**. If you can eat under stress do so. Try to consume all you can handle. Eat more often to meet your nutrition and energy requirements. Supplements can be useful to help prevent the risk of marginal vitamin and nutrient deficiencies.

Stress has a detrimental effect on **muscle, vitamin** and **nutrients.** What measures can we take to minimize them?

The best nutritional preparation for stress is a consistent, balanced and varied menu plan and lifestyle that meets your metabolic requirements. The right nutritional program combined with a regular exercise program will minimize the effects of stress.

Exercise is Stress Relief

One of the best ways to reduce the symptoms of stress is with exercise. Although the causes of stress may be mental, these are **physical problems** that are curbed with **physical activity.** Some factors which may explain the **effectiveness of exercise for reducing psychological stress**:



- **Exercise is a diversion** which enables the person to relax due to change in environment or routine.
- **Exercise is an outlet** to dissipate emotions such as anger, fear, frustration.
- **Exercise produces biochemical changes** which alter psychological states.

Regular exercise may increase the secretion of endorphins in the brain. Exercise has an effect on your emotional reaction to stress. It does this by **altering your mood**. Fit people are usually in high spirits after a lengthy exercise (runner's high). This feeling is associated with the presence of **endorphins,** which are released by the **pituitary gland in the brain**.

The word **endorphin,** comes from the combination of two words, **Endo** and **morphine**, meaning endogenously produced morphine. **Endorphins are the body's natural pain reliever.** It may be the brain interpreting exercise as a form of pain. Or it may be that the rise in fatty acids caused by long, gentle exercise acidifies the blood, which triggers release of endorphins.

Stress Therapy

Exercise is what your body **wants to do** under **stress**: It burns off some of the **stress chemicals** that tension produces, also note that a tired muscle is a relaxed muscle.

Regular exercise reduces **anxiety** and **depression** and allows you to cope more effectively with **psychological stress**. This is effective **stress therapy**. *Relaxation may be induced through **mental** exercise as well.*

Work on your **attitude.** One of the single most important points you can make about stress is that in most cases it's not what's out there that's the problem, it's how you **react** to it. A roller coaster ride is the same experience but the reactions are different. **Think positive.** Thinking about a success or a past experience is excellent when you're feeling uncertain.

Take several deep breaths. Act calm and be calm. When you experience stress, your pulse races and you start to breathe very quickly. Forcing yourself to breathe slowly helps to convince the body that the stress is gone, whether it is or isn't. What is the correct way to breathe? Abdominally-feeling the stomach expand as you inhale, collapse as you exhale.