HEALTH AND STRESS

The Newsletter of
The American Institute of Stress

Number 6 2000

ELEVENTH INTERNATIONAL CONGRESS ON STRESS

STRESS AND THE SOUL

November 26 through December 1, 2000
Mauna Lani Bay Hotel, Island of Hawai'i
Visit www.stress.org and Click on Eleventh Congress for Details

IS STRESS KEEPING YOU FAT?

Key Words: Fast foods, sedentary lifestyles, portion sizes, low fat foods, Barbie, Miss America, anorexia, "yo-yo" dieting, periodontal disease, glycemic index, the "menopot", Cushing's Disease, visceral fat

An estimated 50 million people will go on some sort of weight loss diet program this year. They will shell out about $35 billion for diet plans and foods, prescription and over the counter drugs, exercise equipment, and special regimens to achieve their goals. Most give up because of lack of significant success, boredom, or annoying side effects. Over 95 percent of those who are able to shed their unwanted pounds will not only fail to keep them off, but probably regain a few extra. Nevertheless, they will try again, and again, and again. That's good business for the weight loss industry but leads to dangerous "yo-yo" weight fluctuations.

ALSO INCLUDED IN THIS ISSUE

Obesity is reaching epidemic proportions. **Over 70 percent of adult Americans are now considered to be overweight compared to approximately 55 percent twenty-five years ago.** Obesity has also become alarmingly high in children and teenagers. What's going on?

There are several contributing factors, and one of the most important is the increased amount of food currently being consumed. This is particularly true for high-fat and high-calorie foods like pizza, fried chicken, and jumbo hamburgers with all the trimmings at MacDonald's, Burger King, Wendy's, and other fast food franchises that are constantly popping up every time you turn around.

Another factor is that **we have become an increasingly sedentary society.** We spend more and more time sitting in chairs to watch television or surf the web. Many take a car, taxi, or bus to get someplace that is ten blocks away rather than walking, or search hard for the closest parking space to a store when shopping at a large mall. Most people rarely climb a flight of stairs if an elevator is available.

Health and Stress: The Newsletter of The American Institute of Stress is published monthly. Annual subscription rate $35.00 (U.S.), $45.00 (Foreign).

HEALTH AND STRESS
The Newsletter of
The American Institute of Stress

Paul J. Rosch, M.D., F.A.C.P.
Editor-in-Chief
e-mail: stress124@earthlink.net
home page: www.stress.org

Fill 'Er Up!

Americans are eating much more now than ever before. Visiting foreigners are often astonished by the size of portions served in restaurants as well as in homes. Croissants, bagels, and foods that were adopted from other countries have ballooned to two or three times their original size. We are also eating more of them rather than less. The traditional 1.5-ounce daily consumption of muffins has now increased more than fivefold.

Why? A major reason is that we have more money and less time. **Food has never been so relatively inexpensive, so readily available, and so varied. Food servings are also getting larger**, especially at fast food franchise outlets that compete by advertising "supersized sandwiches", "whoppers", and gigantic "value meals". An American Institute for Cancer Research survey revealed that we are eating out more and that restaurants have replaced the previous industry standard 10" plates with 12" plates to accommodate bigger portions. Home cooked meals, in which the content and size of servings can be controlled, have increasingly been replaced by prepackaged products. Most products also advertise they are giving you more for your money.

Most people are completely oblivious to this trend. Sixty percent of those polled in the survey said that the servings in restaurants are the same size or smaller compared to 10 years ago. Eight in ten also believed that the portions on their plates at home were unchanged or actually less. This was particularly true for baby boomers over 35 and older Americans. Younger respondents were more likely to recognize that food portion sizes had increased.

Ninety-nine percent could not identify the suggested serving sizes for the eight components of the Food Pyramid. The vast majority of people got only one or two correct and very few knew the proper portion for common things like pasta, green salad, or mashed potatoes. Most people also didn't understand that a serving size is simply a measurement unit used to supply nutritional information about calories, fat, cholesterol, carbohydrates, proteins, vitamins etc. It is not the same as the recommended amount, which varies depending on weight, physical activity, and desired weight goal. An obese, sedentary individual might require only one serving of a cup of cereal for breakfast. Two or three cups would be more appropriate for a trim and active athlete who jogs daily.

Women were much more knowledgeable than men about serving sizes and their nutritional content, but they also tended to overestimate the correct size for most common foods. However, knowing the correct serving size was apparently of little value since ninety-nine percent of all respondents said they had never made any attempt to measure their portions. Most agreed that how much they ate depended on how hungry they were at the time. More than a quarter belong to the "clean plate" club and usually eat everything they are served.

USDA studies confirm that **the average daily caloric intake for adults has risen from 1,850 to slightly more than 2000 over the last 20 years. Theoretically, this increase would translate into putting on an extra 15 pounds a year.** Since dietary fat intake fell from 40 to 33 percent during this same time period, the increase in calories came from the amount of food consumed rather than its composition.

Is It What You Eat Or How Much?

Most Americans still believe that when it comes to weight control, the kind of food you consume is more important than how much you eat. A surprising 78 percent of those surveyed said that eating certain types of food while avoiding others was much more crucial to achieving their weight loss goal than eating less. Many nutrition authorities believe that the "low-fat" and "low-cholesterol" promotional campaign blitzes have caused the public to become less aware of the importance of total caloric intake and the size of servings.

Consumers are constantly being questioned in TV and print advertisements "Do you know your cholesterol count?" The implication is clearly that a low cholesterol is crucial for avoiding coronary heart disease. The American public has become so brainwashed that many believe that the lower your "cholesterol count" the longer you will live, or the healthier you will be. Nothing could be further from the truth. Very low cholesterol values have been associated with an increased incidence of depression, suicide and certain malignancies. In addition, an elevated cholesterol is not nearly as significant as other measurements for predicting risk for cardiovascular disease.

Almost every food product now comes in some low cholesterol or low fat version, including soups, stews, salad dressings, cookies, potato chips, bread, other bakery goods, candies, etc. Substitute and low fat dairy and other products have been around for years, but margarine and trans-fat cooking oils are more likely to contribute to coronary disease than the natural foods they were designed to replace. **Even "fat-free" cakes, cereals and pasta are often still loaded with carbohydrate calories**. Lots of people think they can avoid gaining weight when eating out by sticking to the salad bar. While a low calorie dressing may have only 70 to 80 calories per tablespoon, the ladles contain four or more tablespoons. Bean, potato, and other salads that have an oily or mayonnaise base are also high in calories. A very strict low calorie lunch without adequate protein and grain products also often leads to food cravings a few hours later.

Why Thin Is In

Most people want to lose weight in order to look more attractive or fit into clothes that have become too tight. They usually want to lose as much as possible in the shortest period of time, especially if some important event is coming up. Many women who are well within the range of normal still want to lose weight because of societal pressures that equate being desirable with being thin. The old saying "No woman can be too rich or too thin" is constantly reinforced by the media as well as advertisements by vested interests in the multibillion-dollar weight loss industry.

This can be a particular problem for **teenage girls who continue to diet even though they already weigh less than they should. Some are trying to emulate "Barbie's" impossible 39-18-33 measurements.** This doll became an unprecedented phenomenon when introduced over 40 years ago and has continued to remain incredibly popular ever since. Almost 180,000 Barbie dolls are still sold daily around the world, or about two every second. A typical American girl between 3 and 11 years old owns an average of ten. For many of them as well as their mothers, looking like Barbie is a goal they don't realize is impossible.

Miss America is another icon that young females try to emulate. While talent has become increasingly important, it is still the bathing suit competition that gets the most attention, so thin is in. Beauty pageant winners are now apt to be not only skinny, but possibly malnourished based on their BMI (body mass index). A healthy BMI for women can range from 19 to 24. Over 25 suggests you are too fat, and less than 19 means you need to gain weight. The first Miss America in 1921 had a BMI of 20.4 and her successors also had healthy values until the 1970's, when the average fell below 18.5. That trend has continued with some subsequent beauty queens registering between 16.8 and 17.4. Authorities believe that a BMI under 18 means that you need to gain weight, and should probably also consult a physician because of the likelihood of associated physical and mental health problems that could prove serious.

How Dieting Can Harm Your Health

Since Miss America allegedly represents a role mode, psychologists are concerned that excessively thin winners and other social pressures to be skinny will lead to eating disorders. About one out of six adolescent girls suffers from symptoms related to anorexia or bulimia. These can include weakness, fatigue, emaciation, menstrual irregularities, infertility, and serious developmental difficulties. **Anorexics will continue to starve themselves because they perceive that they are too fat even though they are actually underweight.** This coondition should not be taken lightly. Death can result despite aggressive treatment, as happened with the singer Karen Carpenter.

Anorexia and similar eating disorders occur more than 10 times more frequently in females than males. The importance to younger females of not being overweight or being below average weight is not generally appreciated. **In one survey of almost 40,000 girls aged 12 to 15, more than half said that the biggest concern in their life was their appearance.** Sixty percent of 12 and 13 year-olds were on diets because of low self-esteem. Some teenage girls also start smoking because it suppresses appetite and many become addicted, leading to problems later on.

Young women who are not anorexic and are well within normal weight limits may also have a distorted perception of what is attractive because of skinny models. In one study, 64 psychology students (average age 20) were divided into two groups: those who expressed dissatisfaction with how they looked, and those with relatively few concerns about their weight. All viewed a book of photographs of nine high profile women considered to be thin (Princess Di and Jennifer Anniston) or somewhat heavy (Roseanne Barr, Elizabeth Taylor). The book had accurate and distorted picures that made each woman look 10 to 30 percent fatter or skinnier and students were asked to select the correct one. Those preoccupied with their own appearance tended to overestimate the weight of heavy celebrities and underestimate the weight of thin ones.

Women not overly concerned about their weight picked the correct versions of thin stars. but were also apt to to overestimate the weight of heavy ones. The researchers concluded that any degree of heaviness represents a stigma that is interpreted by all women as being"too fat". Due to various social and peer pressures, losing weight has become an obsession for millions who think they are "a little heavy". Even though many are not significantly overweight they often continue to try one fad diet after another. Over the course of a year or two, this pattern of recurrent weight loss and gain or "yo-yo dieting" can put a strain on the cardiovascular system and may increase risk of gallbladder disease and other problems.

Diets can also make people dopey and forgetful. British researchers tested memory, reaction speeds and other measures of mental performance in normal volunteers. When deficits comparable to having two drinks were found, they were usually in subjects who reported being on some weight loss diet. The culprit was not low caloric intake, but the stress of dieting. The weight loss group were put on a normal diet and the others were placed on a low calorie diet and the tests were repeated after a month. The original group again did worse, especially if they had not lost any weight. This was attributed to the anxiety over constantly worrying about what to eat.

It is relatively easy to lose five or six pounds in a few weeks by sticking to any one of a number of popular diets. It gets progressively more difficult after that for several reasons which we will discuss in our next Newsletter. Many diets become boring or monotonous if they involve special foods or eating schedules, and it's hard to adhere to them for months. Staying on some diets like the Atkins diet, may lead to the formation of kidney and gall stones and precipitate an attack of gout in susceptible individuals. High protein diets increase calcium excretion which could lead to osteoporosis and high fat intake may increase risk for heart disease and certain cancers. Learn how to avoid these and other dieting disasters and lose weight safely in our next Newsletter.

Obesity And Periodontal Disease?

While most people go on weight loss diets on their own to look better, some do so for health reasons, especially when advised to do so by their doctor. Obese individuals who are more than 20 percent overweight may be more motivated because of mounting evidence that they are at increased risk for:

- Heart disease and stroke, the leading cause of death and disability for both men and women. Obesity is associated with a higher incidence of hypertension, elevated cholesterol, triglycerides and other blood lipids that accelerate the deposition of obstructive atherosclerotic plaque.
- Diabetes, especially Type-2 or non-insulin dependent diabetes. Overweight individuals are twice as likely to develop this most common form of diabetes, which is a major cause of blindness as well as premature death due to cardiovascular and kidney disease.
- Cancer of the uterus, cervix ovary, breast, gallbladder and colon in women and colorectal and prostate cancer in men.
- Sleep Apnea (periods of cessation of breathing while sleeping), which is associated with heavy snoring, daytime sleepiness, and heart failure. A recent study found that both men and women suffering from narcolepsy have higher BMI's than normal weight controls.
- Osteoarthritis of the knees, hip, and low back. Extra weight produces increased pressure that wears away cartilage tissue that normally cushions and protects these joints. In contrast, osteoarthritis of the cervical spine and other non-weight bearing joints is usually not significantly increased in obese individuals.
- Gout, another joint disease that is more common in overweight people. High blood levels of uric acid may be deposited in joints as crystals or form kidney stones. Certain weight loss diets can also precipitate an attack of gout in susceptible individuals so it is wise to check with your physician before going on any diet.
- Depression, infertility, reproductive hormone abnormalities, complications of pregnancy and surgical procedures also occur more frequent in women who are obese.
- Gallbladder disease, particularly in women who are "fat, fair, and forty". The reason for this is not clear, but risk increases with the degree of obesity. Rapid or large amounts of weight loss, and yo-yo dieting that causes frequent fluctuations in weight seems to increase the tendency for gallstone formation. This is another reason why losing around a pound a week is the healthiest and most effective way to achieve permanent weight loss.
- Periodontal Disease, which is associated with a higher incidence of obstructive atherosclerotic lesions in coronary and cerebral arteries. This seems to be due to low-grade bacterial infection that is not accompanied by an elevations in temperature, high white count, or any significant clinical symptoms. Researchers believe the bacteria constantly stimulate immune system responses designed to eradicate them, but result in atherosclerotic plaque that can eventually occlude vital vessels.

Why should periodontal disease be associated with being overweight? The answer to this question may provide important clues to the causes of obesity as well as coronary heart disease in some people. Researchers believe that obesity is significantly related to periodontal disease through the pathway of insulin resistance. Using data from 11,000 participants in a national nutritional survey, they found that those who were overweight and had the highest levels of insulin resistance were 50 percent more likely to have severe periodontal disease, compared to others who were just as heavy, but with less evidence of insulin resistance. They believe that chronic periodontal infection disease may alter the metabolism of fats in ways that ultimately result in elevations in total and LDL (bad) cholesterol. Preliminary clinical and animal studies support this sequence.

Although last in this inventory of the health hazards of obesity, insulin resistance is hardly the least important. Learning when, why, and how insulin resistance develops promises to provide important insights into its role in obesity, coronary atherosclerosis, polycystic ovary disease, as well as how all of these may be related to stress.

Insulin Resistance And Syndrome X

Insulin resistance refers to the inability of insulin to produce its normal effects on cells and tissues. It is more apt to be present in obese individuals because it appears to contribute to being overweight. Diabetes was originally thought to be due to a lack of insulin. This occurs in Type 1 diabetes, where insulin producing cells in the pancreas are attacked and destroyed because of an immune system disturbance. Type 1 diabetes tends to be hereditary, usually surfacing during childhood, and requires daily injections of insulin. Type 2 non-insulin dependent or adult diabetes typically has its onset in the fourth or fifth decade, when cells become resistant to the normal effects of insulin. It is nine times more common than Type 1 diabetes, and half the people affected are unaware that they have this disorder .

Insulin is a key regulator of important metabolic activities. When food is digested, carbohydrates and proteins are broken down into sugar molecules and amino acids that are absorbed directly into the blood stream. The rise in blood sugar signals the pancreas to produce insulin. Glucose and amino acids have difficulty gaining entry into the cell unless insulin is present. **Along with other hormones, insulin also determines whether these nutrients will be burned to provide energy or stored.** Type 2 diabetics produce insulin but because of resistance to its effects, glucose is unable to enter liver and muscle cells. As blood sugar rises, more and more insulin is required to maintain normal metabolic activities.

The presence of insulin resistance can be determined by measuring blood levels of insulin fasting and 2 hrs after consuming 75 grams of glucose. Fasting values of insulin greater than 15 or over 50 MIU/L following glucose indicate increased secretion due to insulin resistance. Some authorities believe a significant degree of insulin resistance is evident in as many as a third of adult Americans. The vast majority of those affected are completely unaware that **they may face an unusually high risk of developing cardiovascular disease due to Syndrome X, even if they are not overweight.**

Syndrome X refers to a constellation of abnormalities that often develop in insulin resistant individuals, including elevated blood pressure, an increase in the length of time that certain fats circulate in the blood before they are removed, and an increase in low-density lipoproteins (LDL). All of these have been shown to be independent risk factors for coronary disease. Since the pancreas still produces enough insulin to cope with increased blood sugar, diabetes is not present in Syndrome X.

Insulin resistance is also associated with an increased tendency towards central obesity, (waist/hip ratio greater than 1.0 for men or .88 for women). This type of apple-shaped figure is associated with an increased risk for heart disease, diabetes and certain cancers. It also suggests that there is a link between stress and insulin resistance. In Cushing's syndrome, excess amounts of glucorticoid hormones are secreted due to disturbances arising either in the pituitary or the adrenal cortex. Regardless of the cause, the increase in these stress-related steroids results in the deposition of fat tissue in certain sites that gives these patients a characteristic appearance. In the upper face and cheeks it produces the typical "moon" facies, and in the interscapular area, the "buffalo hump". However, the largest deposits are in deep abdominal mesenteric fat depots, resulting in apple-shaped, central obesity. Similar changes are seen in patients who take large amounts of cortisone and similar steroids for prolonged periods.

The reason for this peculiar distribution of adipose tissue is not known. This is an increase in deep visceral fat, designed to protect abdominal organs, not the superficial pinchable layer of blubber that has been referred to as the "menopot". Recent research dealing with stress and "middle aged spread" in women may provide some clues about these relationships. As will be explained in our next Newsletter, it is possible that some of these problems can be prevented or lessened by consuming foods with a low glycemic index whose calories are absorbed more slowly. Certain exercise programs, and reducing stress by behavioral modification may also help.

The Dieter's Dilemma

There should be little doubt that Americans are obsessed with losing weight. At any given time, one in three women will be on some sort of weight loss program. If you review the mass market Best Seller Lists for the last 2000 weeks, you will always find one or more weight loss diet books very close to the top. Two months ago there were four. The problem is that they are constantly changing, e.g. Pennington, Stillman, Atkins, Scarsdale, Beverly Hills, Drinking Man's Westchester, Canadian or Russian Airforce, Carbohydrate Addict, Mayo Clinic, Rotation, T Factor, F factor, water, grapefruit, cabbage soup, caveman, The "Zone", juice and broth, palelolithic, just one good meal, special 3, 4, 5, and 7 day diets, to name a few. You don't have to be a rocket scientist to figure out that if any one of these diets really resulted in sustained weight loss for most people, there would be no need for new ones.

Although the names may be different, some diets are essentially old wine in new bottles. The first ten noted above are variants of the low carbohydrate-high protein diet proposed around a century and a half ago by William Banting, a London coffin and cabinet-maker. He knew little about the carbohydrate, protein, and caloric content of foods, but had experimented with various combinations for the treatment of obesity. Banting's *Letter on Corpulence, Addressed to the Public*, published in 1863, advocated eating food "poor in saccharine, farinaceous, or oily matter, but high in nitrogenous material."

Harvey, a British physician, later modified this by including certain fatty foods. He still referred to it as the Banting diet, and was responsible for increasing its popularity tremendously. Dieters soon found that when carbohydrate restriction became so severe that it resulted in ketosis, they lost their appetite or became nauseated, and ate less. The Banting diet was also found to benefit epilepsy since it reduced the irritability of brain cells, and was advocated for numerous other disorders. Bantingism can still be found in the dictionary to refer to a "method of weight loss achieved by avoiding foods rich in sugar, starch and fat."

Although the other fad diets noted above are entirely different, they also work not because they include or exclude certain foods, but by reducing total caloric intake. Strict adherence for a week or two to any of these diets will likely result in shedding a few pounds, which explains why they are all are so popular. At any given time, one in three women will be on some weight loss program. The vast majority of dieters are really looking for a quick fix to improve their appearance now, rather than worrying about long term goals. **However, the secret of success in dieting is not in losing some specified number of pounds, but in being able to keep them off.**

Since most initial rapid weight loss comes from water, it is quickly regained. The body also resists rapid change and will do anything it can to restore the status quo and return to its inherited set point for weight. After a few weeks, weight loss becomes progressively less, grinds to a halt, and people become discouraged. They return to their old eating habits, or decide to pursue another fad diet program, device, drug, nutritional supplement, or other weight loss aid. There is surely no shortage of things to try in this $35 billion / year industry.

There are weight loss patches, sauna suits, reducing pajamas, body wraps of rubber or plastic worn around the waist. hips or thighs, electronic stimulators, cellulite creams and massagers, and all sorts of herbal and nutritional supplements that promise to "burn body fat while you sleep", "erase waistline bulge instantly", or "provide all the figure toning of 3000 sit-ups without moving an inch". There are over the counter and prescription appppetite suppressant and fat blocking drugs. None of them have been proven to provide long term benefits.

Sound discouraging? Although our our weight set points are presumably fixed, they can be fooled. A calorie is a calorie with respect to its use in the laboratory as a measurement of heat or energy. But all calories in food are not created equal, and understanding this can help you learn how to lose weight.

How Stress Causes "Middle Age Spread"And "The Freshman Fifteen"

Stress is a major contributor to "middle age spread". Many stressed-out folks find that chocolates, cookies, candies, chips or high-fat, high-carbohydrate foods seem to relieve their anxiety. Because of stress related hormonal influences, these extra calories tend to be stored in fat depots deep in the abdomen. This can lead to an apple-shaped figure, which has been shown to be associated with increased risk for heart disease, stroke, diabetes, and certain cancers. According to Pamela Peeke, a former senior scientist at the National Institutes of Health and Associate Professor of Medicine at the University of Maryland School of Medicine, **"It's not just what you weigh; it's where you weigh it.**....When most women hit 40, they discover that their once-shapely figures have gone from an hourglass to a shot glass." But how could stress contribute to this?

In her recent book *Fight Fat After Forty*, Peeke notes that in Cushing's syndrome due to a pituitary tumor, the increased abdominal fat responsible for central obesity diminishes or even disappears after the tumor has been removed. In addition, chronically stressed primates who also exhibited higher cortisol levels similarly showed an increase in abdominal fat in laboratory studies. Further support comes from a report of Swedish men demonstrating that those with the highest levels of chronic stress also had the highest cortisol levels and the greatest amount of deep-belly fat. One reason may be that these fat cells have the largest number of receptors for cortisol. The hormone is preferentially attracted here so the liver can have easy access to fuel needed during stress or for physical activity. Male and female hormones normally protect against this abdominal fat buildup, but declining levels after forty lead to "middle age spread."

Most incoming college freshmen seem to put on a significant number of pounds by the end of their first year. This so-called "Freshman 15" is also often due to stress. Many teen-agers move out of their parents' home for the first time in freshman year. Some move out of state, and all are meeting a new set of peers. The stress of all these changes causes many freshmen to turn to food for comfort. Food is also used to socialize: pizza parties, midnight vending machine raids, and various food-oriented activities are convenient ways to develop a sense of community that reduces stress. Unfortunately, this type of social eating is usually done in addition to regular meals, which can add up to additional pounds. Freshmen also often eat in a campus cafeteria where they are apt to have a meal plan that offers unlimited buffet-style food, including desserts. This has been described as a " stress test for binge eating" by the Director of the Johns Hopkins Weight Management Center. One study reported that a sample of university women gained weight 36 times faster than controls the same age who did not attend college. You can learn how reducing stress can help you to lose weight and keep it off in our next Newsletter - so stay tuned!

ISSN # 1089-148X

Paul J. Rosch,M.D., F.A.C.P.
Editor-in-Chief

HEALTH AND STRESS
The Newsletter of
The American Institute of Stress
124 Park Ave., Yonkers, New York 10703

Non-Profit Organization
U.S. Postage
PAID
Yonkers, NY
Permit No. 400