

Weight problems and what you can do

One of the age-old questions is why some people gain weight and others lose eating basically the same things. If you travel to Europe and watch the people eat, you find that almost all of them are 20, 30 and even 40 pounds lighter than we are in this country. Their lifestyle is a little different than ours, because they tend to walk and be a little more active than we are. However, there isn't that much difference in your activity levels.

Many studies have shown that there is little difference in the caloric intake between obese people and thin people. Many will blame genetics for this.

One of the basic questions is why do we gain fat in the first place. We have two different ways of storing energy in our body. Our energy reserves are either fat or glycogen. Glycogen is a complex molecule of sugar or glucose that is stored mostly in the muscles and liver.

Glycogen is used to give our body immediate energy. However, there is a limit to how much glycogen our bodies can store.

Fat is the backup fuel for our body when we

do not have enough glycogen to support our energy needs. When we are active, burning off energy, we first deplete our glycogen stores. Once that is used up, our metabolism changes and we start to release fatty acids from our fat cells and this supplies part of our energy needs. When these fat cells are being depleted and the energy is released, your body produces something called ketones. It was popular back in the 80s and 90s to measure ketones in your urine to tell if you were losing body fat.

This can easily be done with a urine stick available at most drugstores. This can be important because you don't want to break down too much fat at one time and create excess ketones in your body.

We inherited from our distant ancestors a body that did not have food all year. Genetically, we can make fat very easily as most of us know. But, it is much more difficult to burn the fat off of our body as we inherited a body that needed to make fat to survive the winters or in times of famine when there was little food.

The most important hormone in your body for controlling fat is insulin. When your blood sugar level rises, insulin is produced and drives the glucose and fatty acids into the fat cells.

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It also causes the conversion of glucose into fatty acids that combine together to make triglycerides. When your insulin levels rise you create more fat.

What causes you to produce insulin?

Carbohydrates and sugars are the foods that cause you to create more insulin. There is an index called the glycemic index. This measures how much insulin is created in response to ingesting different foods. The higher the glycemic index the more insulin you produce. Consequently, foods like cakes, pies, all candies, almost all desserts, potatoes, bread, refined cereals, and vegetables like peas, carrots, and especially corn cause a significant elevation in insulin levels.

Many people try severe caloric restriction diets to lose weight. The problem with this is that your brain realizes that you're starving yourself. In response to this your metabolism slows down dramatically. Consequently, your energy expenditure decreases and usually your thyroid production slows down and your body starts to run real slow like a car conserving gas mileage. If this "starvation" diet contains carbohydrates and sugars, insulin production goes up and ironically you get fatter. Your percentage of body fat to lean body mass gets worse and you become what has been called a "fat thinney".

What many times happens is that the carbs that you eat are being stored as glycogen and fatty acids but you need energy and you eat more and are constantly hungry trying to meet your energy needs.

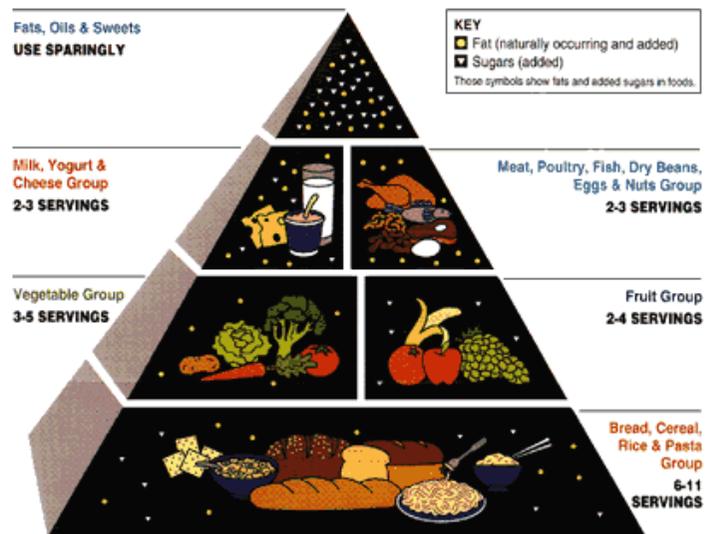
Your body only has one other source of energy and that is proteins. Where are the proteins? They are in your organs and your muscles. Proteins are made out of amino acids, and amino acids can be converted into energy molecules through a process that is known as the Krebs cycle. If your body is getting its energy this way then you deplete your muscles. Think of the proteins in your muscles like your life savings, you do not want to spend them.

As we age, we tend to become insulin resistant. There is a common finding that occurs

in both males and females where we tend to slip into an under functioning thyroid, obviously have less growth hormone produced, in males a decreased testosterone production, and in females, as they go through menopause, decreased female hormones. Some authors have related this to the progressive resistance of our muscle cells to insulin causing them to fail to burn off energy when we need it. In insulin resistance, men will tend to develop belly fat and women will develop more fat around their thighs and buttocks. As the muscles become less effective in burning off energy we also tend to become more easily tired and ironically you start to eat more in order to keep your energy up and the additional food goes into more fat.

For over 50 years, the FDA has produced a food pyramid that you are supposed to follow to be healthy. This "healthy food pyramid" has almost 70% of the calories coming from sugars and simple carbohydrates. Remember, these are the foods that create fat. This has recently been replaced with another chart called "my plate" which is only a slight improvement.

Your thyroid is the major organ of your metab-



olism. Basically, your thyroid takes iodine and combines it with an amino acid called tyrosine to make thyroid hormone. There are a number of factors that can adversely affect your ability to produce thyroid hormone. Soy has been shown to depress thyroid function. This does not mean that you should avoid soy, but when soy is taken in excess it can suppress thyroid function. There are other foods that in their raw state can slow thyroid function. These include

cauliflower, Brussels sprouts, broccoli and kale.

Another factor that can affect the thyroid is fluoridated water. Historically, fluoride was once used to treat hyperthyroidism, a condition of over functioning of the thyroid gland.

If you're trying to lose weight you should avoid drinking tap water and instead be drinking filtered water. Another reason to be concerned with your thyroid function is that cholesterol levels rise when your thyroid function decreases. It should also be mentioned that aspartame or NutraSweet also suppresses thyroid function.

Another factor that can adversely affect your weight is the intake of glutamate. Monosodium glutamate is found in many prepared foods. A study done at the Washington University Medical Center showed that mice that were fed MSG early in their life had a lifelong obesity.

It has been shown that the MSG adversely affects a group of cells in a portion of our brain called the hypothalamus that is involved with two fat controlling substances. These are growth hormone and leptin. Leptin is involved in suppressing appetite and increasing fat burning and growth hormone is important in the making and or maintaining of muscle or lean body mass.

Glutamate, the main substance in monosodium glutamate, is also found in many other foods. These include Parmesan cheese, gluten, most aged cheeses, processed meats, store-bought prepared sauces, many tomato sauces, tenderized meats, most commercially prepared soups and most snack chips.

Unfortunately the FDA can allow a company to add up to 99% pure MSG to a food without it being listed on the label. If you see any of the following names on a label you should strongly consider that it contains MSG. These include natural flavorings, hydrolyzed protein, isolated proteins, textured protein, protein isolates, sodium caseinate, calcium caseinate, enzymes, autolysed yeast, and carrageenan.

Controlling and avoiding obesity

- Drink bottled fluoride free water and do not cook in tap water.
- Limit soy intake
- Reduce raw foods that adversely affect thyroid hormone production. These include kale, cauliflower, Brussels sprouts, and broccoli
- Avoid sugar especially high fructose corn syrup
- Have good oils in your diet like Omega 3 and olive oil
- Increase vegetable intake especially low glycemic vegetables.
- Exercise 45 min. a day and during the week and include some weight training to build muscle tissue
- Aim for 7 - 8 hours of sleep
- Avoid excess alcohol
- Drink white or green tea as EGCG in tea increases fat burning
- Ensure adequate iodine intake from seafood or kelp
- Avoid food additives and colorings
- Do not eat processed or prepared foods.
- Increase fiber in the diet
- Avoid any food containing trans fats or food that has been fried

Respiration

When you are short of breath you start to realize how important breathing can be. We need oxygen and we need to expel carbon dioxide.

Our breathing mechanism is dependent upon a number of different muscles and bone structures. The external intercostals, muscles that lie between the ribs, plus the diaphragm contract to bring air into the lungs.

The most important is your diaphragm. This strong muscle separates our abdomen from our chest cage. It has three holes in it. One is for the esophagus, one for an artery and one for a vein. The diaphragm is actually 3 different muscles that join together to create one. The diaphragm is attached to the bottom of all of your ribs.

The contraction of the diaphragm increases the volume of the chest cage by increasing its vertical dimension. This lowers the air pressure in the lungs and air is pulled in. One of the easiest ways to tell if your diaphragm is working properly is to measure the amount that your ribs expand when you take a deep breath. The small rib muscles elevate the breastbone and the ribs lowering the air pressure in the upper rib cage and air is pulled in.

Relaxation of these muscles causes the air to be pushed out. When you are breathing heavily, larger muscles are involved to forcefully push the air out.

Normal at rest breathing requires about a quart of air to be taken in and out. When you are under stress and need to breath deeper, you can double or triple the amount of air that you

take in and out. For this to occur, all of your ribs need to move as you inhale and exhale.

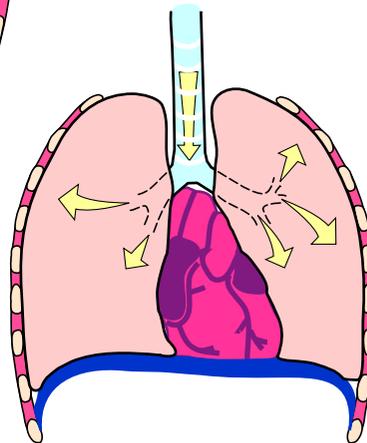
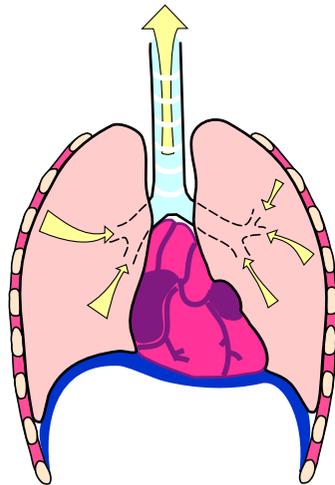
There are a number of reasons why the ribs may not move properly. These can run the gamut from muscle spasms that lock the ribs to the failure of muscle to move the ribs. In the aging process, if the ribs are not exercised frequently then arthritis in the joints will develop and your ability to fully use your lungs can be permanently lost.

There are three distinct areas where your muscles should be causing the ribs to move. The first is the lower rib area. When your diaphragm contracts the ribs should be pushed outwards on both sides. It is very common to find more motion on one side than the other. This is an abnormal finding that should be corrected. The middle of your rib cage should also move out to the side expanding your chest cage when you

take a deep breath. The upper ribs especially in front should be elevated and expand when you inhale deeply.

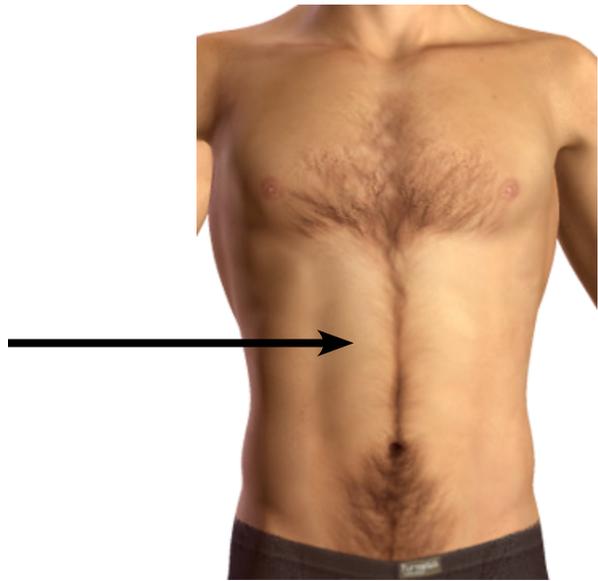
Breathing properly not only brings in oxygen and expels carbon dioxide but it also helps control the pH balance of your body. Recent research on patients with high blood pressure has shown that slow deep breathing can lower blood pressure.

Some people are more mouth breathers than nose breathers. In reality, you should be able to do both of these. Under stress, you can lose the ability to do one or the other. There is a simple test that is done in the office to see if this is a problem that you have.



Respiration Tests

1. Take a tape measure and place it around your chest half way between the bottom of your breastbone and your umbilicus. Let all of your air out and take a measurement. Inhale as much air as you can and take another measurement. Under 40, you should be between 4 and 5 inches. This number slowly decreases with age but should not go below 2 inches.



2. Place your hands on your lower rib cage and take a breath in and out. You should feel equal motion on both sides.



3. Place your hands under your armpits on both sides and take a breath in and out. You should again feel equal motion pushing outwards against your hands.



4. Place your fingers apart on the ribs under your collarbone. Take a deep breath in and out. You should feel the chest cage rise and the ribs moving apart and coming together.



5. Do not take a deep breath and just stop breathing and see how long you can hold your breath. This should be close to 40 seconds.

6. Hold a lit match 6 inches in front of your mouth. With your mouth wide open, try and blow out the match. You should be able to do this.



7. Lie on your back and place your fingers on the sides of your rib cage. Gently push against the ribs first on one side and then on the other. You should be able to feel the rib cage moving and not like a rock.



8. Listen to how you talk. Describe where you live or what you did last weekend. If you take a little breath every 5 – 12 words you are only using the top of your lungs.

If you fail any of these tests, then you have decreased breathing capacity. This many times leads to a condition known as hypoxia, a lack of oxygen. It also causes a rise in carbon dioxide that you are unable to expel. The organs that are most effected by a decrease in respiration are the cardiovascular system, the brain and the liver.

Each of the areas that can cause a decrease in your breathing capacity can usually be easily treated. Once you have the ability to breath deeper and more fully, many if not most of the symptoms related to it are dramatically decreased.

Common symptoms are:

- **Dizziness or faintness**
- **Shortness of breath**
- **Confusion, lethargy, a lack of judgment**
- **Headache**
- **Rapid heart rate**
- **Elevated respiratory rate**
- **Elevated blood pressure (hypertension)**
- **Lack of coordination**
- **Visual changes, tunnel vision**
- **A bluish tinge to the lips and extremities**
- **Muscle aches or tenderness**

Adrenal Glands

The adrenal glands are located on top of the kidneys. They are composed of two parts, the medulla and the cortex. These two components are separate in all ways and have no interrelationships except a common blood supply. They produce two totally different groups of hormones that are derived from two different sources. However, both sections are involved when we are under stress.



The hormones produced by the cortex fall into the category of steroids as they are initially derived from cholesterol. Approximately 85% of the adrenal cortex output is cortisol. Control of cortex production is through a feedback mechanism involving the pituitary and the hypothalamus portions of the brain. The synthesis of the adrenal cortex hormones begins with cholesterol. Cholesterol, derived from low-density lipoprotein (LDL), is the substrate for 80 percent of corticoid biosynthesis. Cholesterol is then converted through 2 steps to create progesterone and from there the rest of the steroid hormones are produced. Each of these steps is dependent upon specific cofactors for the hormone to be produced. The following chart lists some of the common symptoms that have been related to a deficiency in these steroid hormones.

Symptoms of adrenal cortex insufficiency

- Muscular fatigue
(especially during muscular work)
- Cardiovascular - inability to shunt blood to stressed areas
- Connective tissue - delayed wound healing, weak scar tissue formation, arthritis
- Bone-Cartilage - osteoporosis, decalcification
- Skin - Hair - slow hair growth, thin skin
- Stress resistance - subject to sensitivity to trauma, cold, heat, toxins, drugs, emotional stress

The adrenal medulla is the other section of the adrenal glands. The two excretions of this portion of the gland are epinephrine and norepinephrine. Both of these hormones are derived from tyrosine, which is produced from the essential amino acid phenylalanine. Like everything else, some is good, but too much is bad.

NutraSweet, aspartame, is partially made from this amino acid. When you consume this artificial sweetener, the brain levels of this amino acid can cause a decrease in a brain chemical called serotonin. Unfortunately, this can cause mood changes and even depression.

Epinephrine is released from the medulla when the body is stressed. In sports, this is your second wind or known as an adrenal rush. The usual secretions are 80% norepinephrine to epinephrine.

Effects of Epinephrine and Norepinephrine

Area	Norepinephrine	Epinephrine
Heart	increased force	increased force
Blood Vessels	vasoconstriction	vasoconstriction
Oxygen consumption	little effect	great effect
Blood sugar	slight increase	marked increase
Muscle lactic acid	slight increase	marked increase
Nervous system	no excitation	marked excitation

Common Foods High in Salt

Ketchup – the favorite condiment of children of all ages. 1 tablespoon contains 190mg, and that is before the food you put it on is salted.

Raisin bran cereal contains twice as much sodium as oat cereals at 350mg/serving.

Commercial chicken noodle soup contains over 900mg/serving.

American single serving cheese slices come in at 277mg/serving.

Breads vary greatly in their sodium content with pumpernickel topping the list at 190mg/slice.

Xenoestrogens and foods

There are chemicals in products like pesticides, herbicides, certain petrochemicals from air and water pollution, household cleaners, and plastics that are called xenoestrogens. Over exposure to these has been related with increases in cancer and to the development of belly and thigh fat.

One of the ways to combat this is to increase the cruciferous vegetables in your diet. These vegetables like broccoli, cauliflower, Brussels sprouts, kale, bok choy, cabbage, etc. contain indole-3-carbinol (I3C) that combats the xenoestrogens. Just remember to eat broccoli cooked and only a small amount raw as it can reduce thyroid function in its raw state.

Obesity and Sleep Apnea

A researcher at the University of Wisconsin-Madison has stated that there are “probably 4 million to 5 million people who are more likely to have sleep apnea due to the obesity epidemic”.

He reviewed the tests of patients aged 30 to 70 who had difficulty breathing 15 or more times an hour while asleep. He observed that weight had a significant relationship with the sleep apnea.

When compared to having to sleep with a machine making noise and a mask around your face every night versus losing weight, the choice is pretty obvious.

Estrogen levels and Cardiac Arrest

Researchers from Cedars Sinai Heart Institute in Los Angeles have reported that they have found higher levels of the hormone estrogen are associated with an increased risk of sudden cardiac death. This finding was similar to the common risk factors like diabetes, obesity, high blood pressure and high cholesterol. In men, they found that low testosterone levels are associated with this increased risk as well.

Trying to limit the xenoestrogens in your lifestyle is one way of keeping the estrogen compounds lower in addition to other dietary changes.

In June:

More Health Tips

High Blood Pressure - What you can do to help keep normal levels

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