Chapter 4

The Adrenal Type

Taken from Dr. Berg’s book, The 7 Principles of Fat Burning
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The Adrenal Glands

You have two adrenal glands, one located on top of each kidney (see figure below). One of their main functions is countering stress with the production of several hormones. The adrenals don’t know the difference between physical and mental stress; they treat both with the same stress hormones. Every type of stress influences these glands—such as injury, infection, divorce, financial stresses, job-related stress, irritable people, drugs and medication, surgery, pain, illness, poison ivy, excessive cold or heat, giving birth, menstrual cycle, staring into computer monitors, eating junk foods, starvation diets, and babysitting fifteen small children under the age of five for over thirteen hours.¹

The adrenals have many other functions, from anti-inflammatory actions (ridding the body of pain and swelling) and immune system protection to balancing fluid and salt levels, and controlling minerals (such as potassium), rapid heart rate and sleep and awake cycles. They even act as back-up organs for the ovaries during menopause.
The adrenal glands

The following is a description of what happens when the adrenal glands do not function properly.

THE ADRENAL TYPE
Sagging, hanging midsection weight with thin arms and legs

The Adrenal type I am about to describe is the result of excessive adrenal hormone production. I will mention adrenal hormone deficiency as well.

The majority of Americans hold weight in the stomach area more than any other place (which could come from the adrenals or the liver). There are different degrees of adrenal problems, but many of them do not show up on blood tests until they are well advanced into dangerous stages. The adrenal glands are set on a timing mechanism in the brain; therefore testing the blood or saliva for adrenal hormones should be done every four hours through a twenty-four-hour period (cortisol test).

Excess fat in both the midsection (buffalo-like torso) and the face can occur from overreaction of this gland. In the midsection, the fat forms primarily in and around the abdominal organs and sags downward over the belly. Another term for this stomach is pendulous, meaning loose, hanging and sagging. This is different from the Liver body shape, which is a potbelly or a protruding stomach.
like a water balloon, while in the Ovary body shape the person has a small bulge below the bellybutton.

A common problem with the Adrenal type is the inability to fit into clothing, especially around the waist. Some people even wear elastic bands to tuck it back in, but this can constrict vital organs within the abdomen.

Fat accumulation in the face gives a round or “moon face” appearance. The face also has redness because of weakened blood vessels.

A fat pad can develop in the lower neck and upper back area, called a “buffalo hump.” I believe the reason the body creates this is to anchor the belly so you don’t fall forward.

Reddish purple striations (strips or bands resembling stretch marks) can appear on the stomach, thighs, buttocks, arms and breasts as well.

This type of individual generally has a large midsection with thin arms and legs. The reason is very interesting. The adrenal stress hormone (cortisol) breaks down leg muscle and turns it into sugar. This is a stress response by the body to supply quick energy; if you were being chased by a lion, you would need this energy. This sugar, if not completely burned up, will be converted to fat around the belly where the vital organs lie. The person’s legs could eventually become thinner and weaker too, especially at the knees. Cortisol will also take muscle from the buttocks, causing loss of tone in that area.
The pictures below show the changes from a normal body shape through the progressive stages of the Adrenal type.

Normal    Stage 1   Stage 2                        Stage 3

These hormones can be very destructive on the body’s proteins, especially bone tissue, leading to “thinning of the bones” (osteoporosis). They steal these body proteins to use them as fuel, and during stress mode the body will go after any type of fuel, even your own body tissue. This might explain why some people have difficulty losing weight on high-protein diets. High protein is supposed to trigger fat-burning hormones, but if the adrenals are releasing so much sugar from the muscles and even turning the body’s muscles into sugar, these fat-burning hormones get blocked.

In this state, the body is trying to increase its survival by holding on to fat energy around the vital organs in the stomach area and the face. Of course, the body doesn’t seem to care what the person will end up looking like. The face and eyes will become puffy, and a double chin and rounding of the face can develop.
In order to get into fat burning, there must be NO extra sugar or very limited sugar present in the blood. If the adrenals are constantly releasing sugar, how the heck are you supposed to lose weight? And, as mentioned in chapter 3, in the presence of sugar or refined carbohydrates, your body CANNOT and WILL NOT burn fat. In fact, sugar triggers the fat-storing hormone insulin, which will override all other fat-burning hormones and turn them off. The body will ALWAYS burn sugar in place of fat.

A good thing to do is consume small amounts of protein in between meals to prevent the body from eating itself. Raw nuts and seeds are best. However, if you have a Liver body type, you should not snack between meals, except when
you are on the Liver Enhancement Plan. The reason for this will be explained further in chapters 7 and 10.

Exhausted adrenals can cause you to experience pain in different parts of the body because you are running out of anti-inflammatory hormones. If the “on-off switch” within the adrenals gets stuck, a person can go into a chronic stage in which pain and inflammation stay in the body for years. A person can also experience sore muscles that don’t seem to recover after exercise. As this situation worsens, fibromyalgia develops, which is a condition of muscle pain throughout the entire body. What happens is there is an excess of inflammation throughout the body’s muscles, tendons and connective tissues due to lack of the inflammatory removing hormones normally produced by the adrenal glands. Having pain and inflammation and losing weight don’t mix. The stress hormone triggered by the pain can block fat-burning hormones.

As far as muscle tissue is concerned, exercising with weights or doing high-pulse-rate exercise is not a good idea with this condition, since the extra stress overwhelms the adrenals. You will learn more about the best form of exercise in a later chapter; it involves walking and keeping your pulse rate no higher than 130 beats per minute.
Adrenal exhaustion will also cause overall body exhaustion with an inability to get deep, restful sleep. Consequently, the Adrenal type of individual is usually fatigued, dragging their body around during the day, half awake, yet unable to get restful sleep at night.

The adrenal hormones are on a timing mechanism (clock), which controls the circadian rhythms—waves of hormones that affect sleep and awake cycles. With adrenal problems everything is backwards; you are tired during the day yet despite being exhausted you can’t sleep through the night. The body just won’t let you get into the deeper sleep cycles. Because the adrenals counter stress, their production of abnormally high amounts of stress hormones makes it impossible to attain the deep, restful sleep you need to properly rejuvenate the body for the coming day.6
Unable to get restful sleep at night

In the diagram below, you can see normal cortisol (adrenal hormone) levels. Notice that cortisol is supposed to be very minimal during sleep.

Normal adrenal hormone flows

With weak adrenals, the person is more awake in the middle of the night than during the day. They can’t get out of bed, get tired after lunch, need a nap midafternoon, feel tired in the early evening, and if they don’t get to bed at a
certain time, then they can’t go to bed. If the Adrenal type has a sedentary job, they will have a wave of sleepiness right around 2:30–3:00 p.m.

![Image of a woman at a desk]

**Can’t stay awake midafternoon**

Typically, a person with burnt-out adrenals has darkened circles under their eyes as well as a very tired appearance. They feel tired, drained and have brain fog. The brain fatigue can greatly affect concentration. Due to a lack of quality sleep, midafternoon naps are desperately needed.

![Image of a person looking confused]

**Brain fog or dullness**
Certain adrenal hormones are responsible for making you feel awake mentally. Others are responsible for the sleep cycle. Because everything is backwards, Adrenal types can have bladder issues (leaky bladder, frequent urination, etc.) at night even more than during the day.

However, the problem gets worse. Fat-burning effects of certain hormones can occur only during the deep sleep cycles. But with an adrenal problem you are not getting into deep sleep cycles, so the fat-burning effects from exercise can get nullified due to poor sleep.

Your body goes through four 90-minute cycles of sleep from superficial to deep. Just imagine trying to sleep while a lion was chasing you. You might be tired but your body would not be. Many times a person will just wake up at 2:00–3:00 a.m. for no reason and end up lying there for an hour (or hours) before going back to sleep, if they are lucky. The worst thing about this is not being able to function the next day.

Adrenal types need coffee to wake up—strong Cuban coffee. Europeans use very small cups for coffee; Americans have humongous jugs of coffee. Caffeine is also in chocolate, sodas and tea. Caffeine stimulates adrenal hormones, which gives you mental alertness for one or two hours until it wears off. However, over time there are fewer highs and more lows. In college, I would drink pots of coffee at a time, trying to stay up at night and study. At that age most people can get away with it, but at age twenty-eight it caught up with me—stomach ulcers, insomnia, inflammation and severe fatigue. Over the years a person can feel depressed and very lethargic from this. Most people don’t have depression; they just don’t sleep!

The stimulation from caffeine acts like an artificial energy booster. Artificial sweeteners also aggravate these hormones. In my last book, I recommended sugar alcohols such as Splenda, xylitol and mannitol as substitutes for sugar. In this book I’m not recommending these at all because they worsen the adrenals. I found a reference saying they can contribute to adrenal tumors in animals. I have discovered that they inhibit weight loss by causing water retention.

An interesting note about tea: Green tea, despite having some caffeine, has anti-caffeine properties and tends to not create the same jittery effect that drinking lots of coffee will. In some people it actually helps adrenal function.

If the adrenals do not work properly, this can affect oxygen levels, causing you to feel out of breath, particularly when the body is stressed, such as while
climbing stairs. The lower legs also will feel heavier, as if you were carrying around lead ankle weights, especially when you try to exercise on inclined surfaces.

Out of breath while climbing

Because the adrenals affect blood vessels, one can have abnormally constricted blood vessels in the inner ear, triggering ringing in the ears or even high blood pressure. High blood pressure could also stem from a calcium build-up in the arteries, since with adrenal problems a person tends to get arteriosclerosis (hardening of the arteries). Initially the top number (systolic) will increase before the bottom number (diastolic).

There is a test called Ragland’s in which you take a person’s blood pressure lying down and then again standing up. Normally the top number (systolic) should rise 6–10 points when you stand up. However, with adrenal stress, the top number will either be lower than 6 points or higher than 10 points. (In the picture below, the unit of measurement mmHg means millimeters of mercury.)
Blood pressure test lying, then standing

In women, adrenal hormone increases can result in a deeper voice, facial hair and male-pattern hair loss (receding hair line)—but other than that, the person is
totally fine. I’m kidding. It can really mess with a person’s body.

Acne can occur due to enlargement of the oil glands on the face, especially during women’s periods. Atrophy (shrinkage) of the breasts can also be present. The above symptoms are due to excessive male hormone production by the adrenals — androgens (andro- means man).

When excessive adrenal hormones are produced, the person has problems with the mineral calcium. In order to absorb calcium your blood needs to be a certain pH. This term $pH$ refers to the acid/alkaline levels. The body has many fluids, which need to be either acid or alkaline. Excesses of adrenal hormones can increase potassium loss, turning the person’s blood pH on the side of too much alkalinity. This prevents calcium from being directed to the bones and muscles, so one gets not only thinning of the bones but muscle cramps in the calves at night. Cramps in the calf muscles come from calcium, magnesium or potassium deficiencies. All three are adrenal problems. I think what’s happening is instead of calcium going into the body it accumulates on the body tissues. I have observed these cases to have excessive tartar on their teeth, calcium on the eyes as early cataracts, on the bones as heal spurs, on the joints as arthritis, on the bursa (joint sac) as bursitis, on the tendons as tendonitis, in the arteries as
arteriosclerosis, deposits in the kidneys, and twitching under or on top of the left eyelid.

When the adrenals pump out excess hormones, excess calcium is lost through the urine, which is associated with osteoporosis. Without this calcium, a person will have a difficult time getting to sleep, not to mention staying asleep. This is the cause of racing thoughts solving yesterday’s problems at 2:00 a.m. when you should be sound asleep.

Leafy green vegetables are the best source of calcium—much better than milk. Pasteurized milk has been heated to a high temperature and, as a result, the calcium is much harder to absorb. A better source of dairy calcium would be plain yogurt or cheese. Yogurt and cheese are fermented products and the friendly cultures and enzymes that are used reorganize amino acids (proteins), making a new food. These new proteins resemble plant proteins and are easier to digest and use by the body.

Stress responses to all aspects of life are the hallmark of the adrenals. People who have weak adrenals do not deal well with stress; the littlest things seem to irritate them rather easily. Excessive worry and anxiety are common with adrenal weakness due to the adrenaline stress response (fight or flight).
Stress: Excessive worry and anxiety are common

When the adrenals decrease in function, the inability to handle life’s stress increases. One patient of mine couldn’t even sit through a movie that had any suspense; it would keep her up all night long. I had another patient who didn’t have the patience to stand in line at the grocery store.

The adrenal-deficient case is usually worrying 24/7. This is very draining and leads to the need for stimulants—coffee, soda, tea and chocolate. These might give them an hour of clarity or feeling up, but the rest of the day is dull and lacking sharpness. This is the person who is half asleep and who is always visiting their local coffee shop.

Cravings for salt in the form of cheese, pretzels, nuts, popcorn or chips in the evening are common. People search the cupboards late at night for something crunchy and cheesy. This is because the adrenals regulate salts in the body.

With salt and mineral imbalances, fluids can get out of balance, causing you to retain fluid (outside the cells) yet be dehydrated (inside the cells) at the same time.
Wherever sodium goes, water will accumulate. So when sodium gets lost through the urine, dehydration can occur. Many times drinking more water does not hydrate the person because there is too little sodium to balance it. In fact, I have found that people who drink the most water have the greatest dehydration.

FYI: Never consume table salt; consume good quality sea salt. Sea salt has 84 minerals and table salt has only 2.

There is definitely a huge push for everyone to drink more water. Drinking more water so that you’ll eat less usually won’t satisfy you for more than 45 seconds. Instead it will make you feel bloated and cause you to get up several times during the night to use the bathroom, not to mention creating those little rings around your ankles when you take your socks off at night.

Ankles swelling at night

Many people make the big mistake of drinking excessive water. I don’t know who started the rumor that you need 8–10 glasses of water per day, or a gallon of ice-cold water—maybe the bottled water companies. But if you drink too much
of it, you can flush out minerals that are holding the water there in the first place, creating even more of an imbalance.

People use the same logic as they do for fat: If you are fat, you need to avoid fat calories; therefore, if your body is made mostly of water, then you need to drink water. Neither of these statements is true. In regard to fat calories, you have to understand that the hormones look at food differently. And with water, you should drink it only when you are thirsty. Don’t ever force yourself to drink water—drink when you are thirsty!

FYI: Drinking water doesn’t flush out fat.

A deficiency of adrenal hormones can also create cravings for chocolate. This is because some of the body’s serotonin is produced by the adrenal glands. Serotonin creates a “sense of well-being or comfort” and chocolate stimulates serotonin. People who crave chocolate are really craving the adrenal hormone serotonin.

If you take the combination of salt and chocolate, you get chocolate-covered pretzels. In fact, this is how I diagnose adrenal problems—I simply hold up a chocolate-covered pretzel in front of a person’s face and see if they go for it.

The adrenals affect blood sugar levels. So, poor adrenal function could cause the person to experience sugar cravings in addition to salt and chocolate cravings during the late afternoons and evenings.
Sugar cravings late afternoon and evening

In the chart below, you can see the different symptoms of high blood sugar and low blood sugar. High blood sugar (such as after a Thanksgiving meal) can produce brain fog, and low blood sugar (from skipping a meal) can also produce brain fog, as well as anxiety and even cravings for sweets.
Your body will tell you what deficiency you have based on what you crave. If you crave cheese or salt, this could mean you are low in sodium and your adrenal hormones are too low. If you crave grapefruit or melon, it could mean you’re low in potassium and your adrenal hormones are too high. Craving licorice could mean you are deficient in another adrenal hormone. The program...
I’m about to recommend will assist in giving the body what it needs so that you don’t crave the wrong foods.

FYI: Children who eat dirt or clay, or women who crave ice during pregnancy, could be deficient in iron. (I would recommend eating beets instead of dirt.) Craving ice cream or cheese could also mean you are low in calcium, which indicates an adrenal problem.

Since the adrenal glands affect the immune system to a large degree, weakened adrenals can also cause increased susceptibility to viruses. The adrenal glands suppress immune reactions that include inflammation, itching of hives from excess histamines, infections, etc. This is why when a person takes a steroid like prednisone—which is an adrenal hormone—the allergic reaction, asthma or even inflammation from poison ivy can disappear. Allergies, asthma and chemical sensitivities occur in a body with weakened adrenals. This is the reason a person who experiences a severe allergy reaction (anaphylactic shock) needs what is called an EpiPen. An EpiPen is epinephrine (also known as adrenaline), which is a main hormone of the adrenals, in an injectable form.

FYI: Viruses cannot be killed because they are not alive in the first place. Viruses are pieces of genetic material wrapped in a sack—that’s all. But once inside your body, a weak cell can allow them to enter. When the virus enters your cell, it combines with your DNA and starts replicating. It’s like a copy machine gone out of control, destroying your cells. A virus is so small that it would compare in size to a ping-pong ball if a bacteria were the size of the Empire State Building. It could fit through the pores of a porcelain dish. Viruses enter your body and never leave. They go into remission or hiding. Don’t ever believe anyone who tells you to take some medication to kill the virus—you can’t. They can travel through the body into the spinal cord or brain and stay there. They are like seeds in the ground, waiting for the right environment. They wait for your resistance to be lowered so they can kick you when you are weak.
The best defense against viruses, especially the flu, is to keep your resistance high through ensuring your adrenals are strong.

When the immune system goes crazy and starts to attack your own cells—autoimmune (self-attack)—the adrenal hormones are not doing their job. Normally, adrenal hormones are supposed to suppress immune cells. When this suppress function is broken, the immune system can go out of control.

The adrenals have another function: controlling blood vessel contraction and relaxation, which affects blood pressure. Adrenal hormones constrict most blood vessels with the exception of two: the vessels in your lungs and the main artery around the heart (coronary). This is why a person with asthma needs a bronco (lung) steroid inhaler (which is adrenal hormones). If the adrenals can’t relax the lungs, a constriction and tightening occurs preventing oxygen from entering. The coronary artery, which feeds oxygen to the heart muscle, is also controlled by the adrenal hormone adrenaline. If the adrenals are weak, the coronary can become constricted, especially under stress, preventing blood flow to the heart. This can give tightness in the chest or actual chest pains.

Are you beginning to see the importance of the adrenal glands?

The adrenals can overwork and underwork. Depending on the state they are in, you will experience different symptoms. I’ve observed many times that a person will start with their adrenals in overdrive due to stress, then burn them out into an underworking adrenal situation. But it’s not always that cut and dried, as a person might have a combination of symptoms. The eating and exercising program is designed to help normalize either overworking or underworking adrenals. Due to the destructive nature of the adrenals on your muscles, you’ll be modifying the Liver Enhancement by adding more protein.

**Causes of the Adrenal Body Type**

There are several things that worsen or burn out the adrenal glands. The biggest of these is taking adrenal hormones; this could be in the form of prednisone or steroids (same thing). When you bypass the body and give it straight hormones, the adrenals don’t have to produce their own. As a side effect this severely weakens the adrenals. I’m not recommending avoiding steroids if your doctor has advised them. I had a patient who was a swimsuit model; she developed a heel spur and received a steroid injection for pain. Four years later she developed a huge midsection with lots of stubborn weight. Steroids tend to make you put on weight by affecting the adrenals.
The second cause of adrenal problems comes from taking too much synthetic ascorbic acid (known as vitamin C). Vitamin C in nature comes in a whole-complex form and consists of ascorbic acid, organic copper (tyrosinase), riboflavin, and K and J factors. The ascorbic acid antioxidant element is only one part. Taking this one part in huge dosages can severely aggravate the adrenals, since the adrenal glands are a storage system for vitamin C. Man-made vitamin C (ascorbic acid) is often made from cornstarch and sulfuric acid. You could even feel good taking these synthetics for a while, because they act as a stimulant. However, I’ve had patients take grams (one gram is 1,000 milligrams) of the stuff and end up with adrenal problems down the road. Always take vitamin C in its whole form from food. In its whole form you rarely see the ascorbic acid part over 100 milligrams.

The third cause of weak adrenals is overwhelming stress to the body. Years of not sleeping, living with stressful people, a stressful environment, experiencing the loss of a loved one, going through a divorce, etc., can drain the adrenal glands.

The fourth cause of trouble with the adrenal glands is infection, especially from fungus, unfriendly yeast and viruses. The adrenals get a major amount of blood flow because they are above the kidneys. These microbes travel through the blood and get trapped in the adrenals and create problems later in life.

The fifth source of adrenal problems stems from a combination of taking stimulants and having nutritional deficiencies. Stimulants include caffeine, appetite suppressors, sugar, nicotine, synthetic vitamins, herbal stimulants (ma huang), drugs, etc. These items deplete vitamins (especially B vitamins) and minerals (particularly potassium and calcium). Add in poor eating habits and lots of refined sugars and grains and you can end up with exhausted adrenals.

Below is a list of symptoms the Adrenal type can experience from poorly working adrenal glands. Take a pencil and check off the conditions that you experience in greater or lesser degree. Later, after we’ve covered all of the body types, we’ll take up the one that contains the greatest number of symptoms in order to help you determine which gland is, first and foremost, making it difficult for you to lose weight.

**Adrenal Type Symptoms**

- Pendulous abdomen (sagging and hanging)
- Midsection weight
- Buffalo hump (fat pad) at the upper back, lower neck area
- Thinner legs and arms
- Weakness
- Fatigue
- Lethargy
- Depression
- Sleepiness
- Insomnia
- Difficulty getting out of bed in the morning
- Need for midafternoon naps
- Nervousness
- Anxiety (worry); frequent feelings of stress
- Can’t tolerate stress
- Thinning skin
- Acne or poor skin
- May have white or discolored patches on skin
- Reddish purple stretch marks on the stomach, thighs, buttocks, arms and breasts
- Red cheeks
- Round or moon face
- Puffy face and eyes
- Dark circles around eyes
- Double chin
- Facial hair
- Full eyebrows
- Receding hairline
- Deeper voice
- Sparse hair on forearms and lower legs
- Atrophy of breasts
- Tightness in chest, or chest pains
- High blood pressure
- Lax ligaments—weak ankles and knees
- Weak or brittle bones (due to a loss of calcium and protein)
- Difficulty absorbing calcium
- Needs coffee to wake up
- Salt, cheese, chocolate and sugar cravings, late afternoon and evening
- Inflammation or pain in joints, back, neck
- Heel spurs
- Overreactive immune system—allergies, chemical sensitivities
- Autoimmune conditions
- Fibromyalgia
- Asthma
- Increased susceptibility to viruses
- Dehydrated (intracellular) despite amount of water drunk
- Fluid retention in between cells
- Pitting edema (especially in ankles)
- Gets out of breath when climbing stairs
- Legs feel heavy, especially when exercising
- Moodiness and irritability
- Brain fog or dullness
- Ringing in ears
- Low sex drive

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