

## Your Liver

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One of the liver's functions is to be sure that your blood has enough sugar in it. Your brain requires an exact amount of sugar (known as glucose). If you have too much sugar in the blood, your pancreas releases a hormone known as insulin that removes the excess sugar and stores it. A few hours later, when your blood sugar levels have begun to drop, the liver will release some of the stored sugar so that the brain is continuously fed. Cortisol is the hormone that signals the liver to make this release.

If you're not making enough cortisol, your liver cannot replace blood sugar. Instead, your hormones will release adrenaline, in an effort to wake up your brain.

*Symptoms of low blood sugar:*

- Headache
- Slow, sluggish, lethargic movement
- Mental confusion, fogginess
- Sweating
- Inability to regulate temperature
- Nightmares
- Insomnia
- Weight gain around your mid-section

***Hypoglycemia:*** *Low blood sugar. Hypo is a prefix that means low. Glycemia is a root word that comes from the word glucose, a type of sugar.*

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Most women notice the symptoms of hypoglycemia when they're hungry in the late afternoon, but when the adrenal glands are more severely exhausted, women can also experience these symptoms in the middle of the night, as a burst of adrenaline wakes them from a sound sleep or scares them with a nightmare. Because their blood sugar is low, they can't fall back to sleep easily.

# The Stomach

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Just as the liver needs cortisol to maintain a proper amount of glucose in the blood, so also the stomach needs cortisol for proper digestion of your food.

It's difficult for us to understand how a bite of food on our fork turns into carbohydrates, fats, and proteins, not to mention how minerals and vitamins nourish our body. We have a difficult time understanding that food is made of molecules that are built up into that bite of mashed potatoes that is heading into our mouth.

The mashed potatoes must be broken down into molecules that the body can recognize and use. Enzymes are the critters that break down the molecules.

Enzymes are manufactured mostly by the pancreas, and they begin working their magic in the stomach. However, if your stomach contains no enzymes, then your food just sits there, unable to be broken down into useable molecules. As the food moves into the small intestine, it cannot be absorbed. Your large intestine then has a lot more work to do to eliminate it from your body. In effect, your food becomes a poison in your blood while you're beginning to starve from a lack of nutrients.

Cortisol is the hormone that controls the production of enzymes in the pancreas. An excess of cortisol can cause too much stomach acid and other problems such as irritable bowel syndrome. Too little cortisol causes a reduction in the production of digestive enzymes, causing incomplete digestion and malnourishment.

*Symptoms of not making enough digestive enzymes:*

- Nausea, diarrhea, vomiting
- Constipation
- Abdominal and flank pain
- Joint pain
- Weight gain or loss
- Appetite loss or food cravings

When I first learned about the role of digestive enzymes, I finally realized why I had suffered through so many painful and bloated nights after a stressful week or an argument with someone. Why was I any different than a starving and bloated Ethiopian child?

# The Kidneys

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Cortisol is not the only hormone produced in the adrenal glands. Aldosterone is another essential hormone (among many others).

Aldosterone controls the levels of sodium and potassium in the bloodstream. If the level of sodium in the blood falls too low, our kidneys cannot maintain the fluids in our body and our blood pressure will fall.

*Symptoms of dysfunctional kidneys:*

- Dehydration
- Frequent urinary tract infections
- Low blood pressure (defined as lower than 120/80)
- Profound weakness and fatigue

Low blood pressure causes a host of other symptoms, such as “seeing stars” when you stand up too quickly or reach for something in the shower. Low blood pressure also contributes to the famous sense of fatigue that accompanies tired adrenal glands. Fainting is another indicator of adrenal fatigue because of low blood volume.

# The Heart

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Too much aldosterone has been shown to increase the risk of stroke and heart failure, but too little aldosterone is also bad for the heart. The heart needs aldosterone for a regular heartbeat and for the output of blood to be regular and firm. When aldosterone decreases, the heart struggles to regulate itself.

## *Symptoms:*

- Rapid heart rate
- Rapid respiratory rate
- Shortness of breath

I've noticed that when my adrenal glands cannot produce enough aldosterone, I struggle to have enough energy to carry a basket of laundry. My heart will race, followed by sleepiness. I avoid flights of stairs. I begin to wonder how small children have the energy to run and tumble. I'd rather just take a nap.

## Related Diseases

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You should be aware that adrenal fatigue is implicated in several other diseases, such as

- Rheumatoid arthritis
- Ovarian dysfunction and infertility
- Allergies
- Asthma
- Autoimmune disorders
- Irritable bowel syndrome and colitis
- Epstein Barr Syndrome
- Mononucleosis
- Frequent colds, viruses, and other infections
- Skin rashes
- Polymyalgia rheumatica
- Lupus
- Many kidney diseases

If you suffer from any of these conditions, you should certainly suspect adrenal fatigue.

The "Hypoglycemia Association" lists the following as typical complaints for those suffering from fatigue. Which ones have you experienced?

- The light hurts my eyes.
- My mouth is so dry I feel as if I could spit cotton.
- I feel drowsy after a sweet/starchy meal.
- The pain in my neck is murder.
- I feel best after the evening meal.
- I frequently have nightmares.
- I wake up in the middle of the night and can't get back to sleep.
- My hands perspire when I have to make a speech in public, or take a test.
- Preparing for a trip is terribly exhausting, leaving me sick and distressed and sometimes I cry.
- I have to drink coffee or caffeinated soft drinks to keep going.
- I have frequent abdominal pain or gas.
- When I introduce people, I panic and forget their names.
- I was considered a good student, but I almost failed several subjects. Studying was a tremendous effort.
- I avoid social engagement with all sorts of excuses.
- Sometimes I wake up in a sweat at night.
- I think I am especially sensitive to color, sound, and odor.
- I insult people without meaning to. I regret it afterward, but it happens again and again.
- This itching and crawling of the skin is nerve racking.
- I just can't get organized.
- I either feel guilty or I blame others.
- I can't handle stress.
- I cry easily.
- I get angry easily, which may result in my yelling at the person. It takes a long time to recover.
- When I get up quickly from a reclining position, I get dizzy. Sometimes I black out or everything becomes dim.
- I sleep so hard, as if drugged, with a feeling of sinking, sinking; I try to wake myself up but can't.
- I have a history of constipation problems.
- I often feel tired or blue, but after eating ice cream or candy I feel well and happy for a short time.
- I have always had trouble with motion sickness.
- Often when I go to get something, I forget what I went for.
- I know I'm a doormat. I don't know how to stand up for myself.
- I can't get to the bottom of my breath.
- I get frequent colds.
- My insides feel weak and trembly.
- It was six months before I felt happy and really able to take care of my new baby.
- I have difficulty keeping a job. I get irritated with people I work with.
- My heart beats too fast sometimes.
- My heart beats too slow sometimes.
- The day I go shopping I just have no strength left for anything else.<sup>1</sup>

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<sup>1</sup> From <http://www.fred.net/slowup/habul44.html>