

# Adrenal Exhaustion

Your adrenal glands sit on top of the kidneys and secrete important hormones: cortisol, adrenaline, and dehydroepiandrosterone (DHEA). These hormones help you to buffer stress and adapt to everyday life demands by determining the stress response.

**Under stress**, healthy adrenals increase their output of cortisol and DHEA to enable you to preserve health. They also secrete adrenaline, giving you a boost of energy when needed. If this becomes chronic, the adrenals can no longer keep up with the demand, and DHEA levels begin to fall, progressing from stress to fatigue to adrenal exhaustion. In addition, the oversecretion of adrenaline can cause you to feel anxious and nervous. Insomnia, fatigue, depression, irritability, and digestive difficulties are also common. As adrenaline surges during stress, digestive enzymes are simultaneously lowered, and blood sugar levels initially rise. As this becomes chronic, the high cortisol and adrenaline from **prolonged stress** progress to:

- Decreased immune function (ability to fight infections & cancer)
- Depletion of cortisol, resulting in unstable blood sugar
- Less restful sleep
- Increased lipid levels (blood fats)
- Fluid retention
- Loss of cellular potassium, a very important mineral
- Decreased insulin sensitivity, predisposing toward diabetes
- Loss of the capacity to produce sufficient DHEA, affecting the balance of other hormones

## Functions of cortisol

- Converts body proteins into energy (putting amino acids into the bloodstream)
- Stimulates the liver to convert these amino acids to glucose as needed for energy
- Counters inflammation and allergies
- Helps regulate blood pressure
- Aids in stress response (but becomes dysfunctional in prolonged stress)

## Functions of DHEA

- Precursor to testosterone and estrogen (affecting hormone balance)
- Improves resistance to viruses, bacteria, parasites, allergies, and cancer
- Helps prevent osteoporosis
- Lowers total and LDL cholesterol
- Increases muscle mass and decreases body fat

## Restoration

- Diet should avoid refined sugars, caffeine, and alcohol and should include several small meals containing good-quality protein to rebuild body tissues.
- Determine allergic foods and avoid them (digestive problems stress the adrenals).
- Ginseng and/or licorice tea can be supportive (with medical guidance).
- Adequate vitamin C is important.
- Get adequate sleep and go to bed by 10 PM.
- Use stress-management techniques.
- Deal with emotions as needed with positive social environment &/or professional help.
- Engage in light exercise (but don't over-train if your adrenals are impaired).
- Get daily outdoor light.

**Chronic adrenal stress** can cause or aggravate many other problems including:

- Weight gain
- Fatigue
- Depression
- GI problems
- Female hormone imbalances

Below is a typical stressed cortisol curve throughout the day (compared to normal range).

If it starts too low in the morning, you wake up tired.

If it drops too low in the afternoon, you get sleepy & tired.

If it's too high in the evening, you have trouble falling asleep at night ("Wired & tired").

**DAILY CORTISOL CURVE IN ADRENAL STRESS:**

