effects of slower digestion and decreased anti-inflammatory activity by cortisol.

**Rescuing Your Digestive System**

Although it is not possible to avoid all stress, it is beneficial to keep stress at a manageable level and allow your parasympathetic nervous system to have a chance to repair your body. Here are some things you can do to help:

- **Exercise** can help decrease stress hormones in the same way that a physical response to stress worked in our ancestors.
- **Laugh!** It has been shown to reduce cortisol.
- **Practice yoga or listen to music** – Doing so decreases cortisol and the sympathetic stress response.
- **Take mini-breaks** – Just by standing up from your desk and stretching for a few minutes, or taking time to actually chew and taste a healthy lunch rather than hurriedly gobbling something down, you can encourage a parasympathetic response that supports your digestion.
- **Any activity** (not including the use of alcohol or drugs) that allows you to release your stress, to relax, or to slow your heart rate helps your parasympathetic nervous system get back in the driver’s seat, repairing your intestines, absorbing nutrients and allowing your digestive system to function normally.

**Supplemental Support in Times of Stress**

In addition to these lifestyle changes, incorporating supplements that provide focused digestive and adrenal support can make a big difference in enhancing your digestive system’s resilience to stress.

**For the Digestive System:**

- Natural fibers such as psyllium, oat bran, rice bran, prunes, ginger, fenugreek seed and vegetable cellulose help restore normal intestinal mobility.
- Digestive enzymes such as papaya or betaine HCl help break down food when the body is not secreting enough enzymes on its own.
- Beneficial bacteria, such as lactobacillus and bifidobacteria, along with fructooligosaccharides (FOS) which feed them, can help reestablish a balanced intestinal environment.
- MSM and glycine reduce inflammation and help maintain the health of the digestive tract lining.
- L-glutamine, glutamic acid and quercetin enhance the integrity of the intestinal lining.
- Herbs like echinacea, slippery elm and ginger soothe and protect the intestines.
- Nutrients such as vitamin A, vitamin C, zinc, manganese and phosphatidylcholine are important for normal tissue growth and repair.
- Mastic gum, MSM, licorice and glycine are anti-inflammatory and may help to soothe and protect irritated digestive tracts.
- Ginger helps reduce nausea and vomiting and aids normal movement of food through the stomach.
- Goldenseal, vitamin A and echinacea help promote healthy immune function.
- Citrus bioflavonoids increase mucus secretion in the intestines and help protect intestinal cells.

**For the Adrenals and Nervous System:**

- Vitamins A, C and E help modulate the stress response.
- B vitamins and choline are required for the normal functioning of the nervous system.
- Vitamin C is rapidly depleted in stressful times and needs to be replenished in order for the body to continue to handle stress.
- Bioflavonoids increase absorption and effectiveness of vitamin C.
- Eleutherococcus is anti-inflammatory and helps curb excessive physiologic changes to stress.
- Ashwagandha and maca help modulate many of the adverse changes which accompany stress, including elevated cortisol.
- Alfalfa helps protect the nervous system.

By supporting your body in times of stress, not only will your digestive tract be healthier, but it will provide your whole body with the nutrients you need to be more resilient to stress and live a healthier, more balanced and productive life.

For more information, visit the original online resource for adrenal fatigue: [adrenalfatigue.org](http://adrenalfatigue.org)
Healthy Digestive Function
A healthy digestive system has a number of functions:

1. To break down food into small nutritional components that provide the vitamins, minerals, proteins, water and energy needed to maintain health.

2. To collect toxins, dead cells and other debris, and eliminate them from the body.

3. To act as a site for front-line immune defense.

During digestion, digestive enzymes, acids and other chemicals mix with food in the mouth, stomach and intestines to break down the food and extract nutrients. The intestinal wall acts as a filter, keeping toxins and debris inside and moving toward elimination while allowing the smaller nutrients to pass freely through the wall to enter the bloodstream. Once inside the blood, the nutrients are carried to all the tissues of the body that need them. Because digestive chemicals are very caustic and the specialized function of the digestive wall is so important, the linings of this wall are continually replenished to maintain its integrity. In fact, this is one of the areas of fastest cell turnover in the body. The degree of integrity of this wall has an impact on overall health, as well as the health of the digestive system because it affects the availability of energy and nutrients to cells throughout the body. Just as important are the quantity of digestive chemicals secreted, the length of time it takes the contents of digestion to move through the tract, the balance of intestinal bacteria, and the vigor of intestinal immune function. Stress modifies all of these aspects of your digestive system through the combined actions of your nervous system and adrenal hormones. To understand how this happens, it helps to first understand a little about how the nervous system affects the digestive system and what changes occur during the stress response.

Digestion and the Nervous System
Digestive system function is regulated by the autonomic nervous system (ANS). The purpose of the ANS is to control a vast array of life-sustaining activities in the body without requiring conscious thought. Imagine how exhausting it would be to have to remember to instruct your stomach to empty or to remind you to secrete saliva. The ANS is subdivided into three main parts: 1. the enteric, 2. the sympathetic and 3. the parasympathetic nervous systems.

1. The enteric branch manages every aspect of digestion. It is sometimes referred to as the “second brain” or “gut brain” because in addition to innervating the smooth muscles, glands and organs of the digestive system, it produces neurotransmitters (brain messenger chemicals) in the gut that can influence cognition and mood as well as digestive function. It works independently and also interacts with the rest of the ANS to regulate the digestive system and modulate digestive function during stress.

2. The sympathetic branch responds to stress and mobilizes the body for a physical reaction, generally inhibiting digestion so that more resources are available to the brain, heart and muscles.

3. The parasympathetic branch is responsible for maintenance, repair, restoration, relaxation and digestion. The phrase “rest and digest” is sometimes used to describe what it does. Under the control of the parasympathetic nervous system, the following processes of digestion are supported:

- Saliva and digestive enzymes are secreted to break down food
- Food travels through the tract at the optimal pace for nutrients to be absorbed
- Muscular contractions in the intestines are smooth and regular
- Sphincters are opened to allow normal passage of food through the gut
- A special type of mucus is continually secreted over the inner walls of the stomach and intestines to protect them against caustic digestive chemicals
- The lining of the tract is maintained and repaired regularly
- Blood flows through the digestive organs to receive nutrients from food and to bring oxygen from the lungs
- Beneficial bacteria grow, supported by a balanced intestinal environment
- The immune cells in the digestive tract protect the body and the tissues of the digestive system against infection

Stress and Your Digestive System
Any stress you experience, be it physical or emotional, activates the sympathetic nervous system and triggers production of adrenal hormones, such as adrenaline and cortisol, that prepare your body to deal with the stress. This is often called the “fight or flight” response because, metabolically, the body becomes primed for one of two physical reactions: to run or to fight. Under the control of cortisol, adrenaline and the sympathetic nervous system, the body’s focus shifts from maintenance mode to emergency preparedness. This shift causes a number of effects on the digestive system:

- Secretions are reduced, including saliva, digestive enzymes and protective mucus
- Blood is shunted from the digestive organs to the skeletal muscles, reducing nutrient exchange
- Nutrient absorption is diminished
- Muscular contractions in the intestines become irregular and can create cramping, constipation or diarrhea
- Sphincters close, inhibiting normal movement of food through the tract
- Peristalsis slows, allowing toxins to remain longer in the colon and harmful bacteria to multiply and crowd out the beneficial bacteria normally present in the gut
- Over time the lining of the stomach and intestines can become thin and damaged, creating an environment that allows more toxins to be absorbed into the body
- Immunity in the digestive tract is impaired with these changes

When 21st Century Stress Takes Over
Throughout human evolution, adrenal hormones and the sympathetic nervous system have suppressed digestive function during the stress response. Historically, the digestive system handled these fluctuations with relative ease. Now, though, stress-related digestive disorders like nervous stomach, constipation, diarrhea, irritable bowel and ulcers have become all too common. The stress response is the same as it has always been, but 21st century stress is dramatically different.

Your stress response is designed to prepare you to physically deal with stress (running from a lion, for example), and the physical exertion helps dissipate stress hormones, quickly moving your body back into balance. However, modern stressors rarely require a physical response, and they tend to last longer and be more pervasive. For example, difficult relationships, unemployment, unsatisfying work, debts and mortgages affect your daily life and may last for months or years. Because you cannot fight with a loan or outrun a job, your stress hormones are not easily dissipated, and because the stressors do not go away, your brain keeps signaling your adrenals to make cortisol. As a result, digestion continues to be curtailed, with unhealthy consequences. To make matters worse, it is easy to disregard healthy habits when stressed. You may find yourself downing caffeine to keep going or drinking alcohol to calm down, both of which can damage your digestive tract lining even more. Sugary comfort foods contain very few nutrients, and sugar actually robs your body of B vitamins and other nutrients, pushing your nutritional status even lower. Routinely working through lunch or eating on the run does not give your parasympathetic nervous system (the relaxation response) a chance to even become activated!

If your adrenals fatigue from prolonged stress, digestion can suffer at the same time that food cravings increase because of low blood sugar, and digestive tract inflammation flares from the combined