

## **Digestive Enzymes and Detoxification**

*Promoting proper digestion and elimination can dramatically reduce the amount of antigens and endotoxins in your patients' systems.*

By Walter J. Crinnion, ND

Everyone carries a load of environmental toxicants (manufactured chemical toxic compounds). And some of the toxicants you carry were transferred to you before you were ever born.

These are persistent bioaccumulating toxins, most commonly acquired through diet — Atlantic farmed salmon, dairy, and eggs are the largest sources. Heavy metals are also a part of this persistent endowment that you receive prior to birth and that you add to with poor eating, drinking, and breathing habits.

Other parts of the toxicant load are not persistent, but you add them to your body daily through diet, lifestyle, home, and personal-care products. These non-persistent toxicants include solvents (cleaners, perfumes, vehicular exhaust, building materials, etc.), plastics (personal-care products and food), and organophosphate pesticides (fruits, vegetables, and indoor air).

If your personal loads are high, they can lead to reduced vitality, ill-health, and disease. The vast majority of these toxicants all have the ability to poison the mitochondria in your cells, which can lead to fatigue, obesity, diabetes, and other chronic problems.

### ***Environmental medicine***

“Environmental medicine” is the general term for referring to the diagnosis and treatment of toxicant-induced illnesses.

The main principle in environmental medicine, when discussing the cause and treatment of these illnesses, is known as the “total load.” It is rarely just one chemical that causes problems, despite the tendency for people to want to identify a single culprit. Instead, it is the total load that tips the scales.

Likewise, when reducing the toxicant burden, you can reduce it in many places, as all toxicants contribute to the total load.

It is easiest to address the “low-hanging fruit” when it comes to trying to reduce the total load. This means choosing organic versions of the 12 most toxic fruits and vegetables, and reducing the amount of scented products in your home and personal-care products.

Your digestive system is the main place where your battle with toxins and toxicants takes place. The intestines are faced with myriad toxic compounds and nutrients and must try to limit the absorption of toxic compounds, while still encouraging absorption of nutritional compounds. If the intestines get it wrong, you suffer.

You can help by limiting the amount of toxic stuff you put into your mouth. Unfortunately, looking at junk food sales in this country, it is clear that people rarely take this advice. Add to that the commonly eaten fruits and vegetables that have a high burden of organophosphate chemicals, the myriad foods people react to, and bacterial/fungal loads in the intestines, and you get quite a burden.

In fact, the bacterial/fungal load alone is responsible for a great number of health issues. This burden is referred to as endotoxins, and is composed of bacterial cell walls and other lipopolysaccharides. A search on PubMed for “Immune System

Diseases” and “Lipopolysaccharides” results in more than 2,300 articles. When there is a high burden of these endotoxins, the liver gets overloaded and you feel ill (a main reason people who are constipated feel so poorly).

### ***Enter digestive enzymes***

So, how can digestive enzymes help with the total load of toxins and toxicants? Actually, they can assist in many ways.

As mentioned above, the toxicants are all mitochondrial poisons, which limit your ability to produce adenosine triphosphate (ATP), the cellular currency that

powers the body. The production of digestive enzymes takes a huge amount of energy, and in toxic bodies there is often insufficient digestive enzyme production.

In this state, even the most nutritious foods will not be properly digested and absorbed. This will result in fewer nutrients available to make more ATP, and a vicious cycle ensues.

Taking digestive enzymes can help reverse this cycle and has the potential to relieve the body's need to use its vital ATP for digestion, allowing it to possibly be better served in other systems. Digestive enzymes are also vital for the proper breakdown of proteins into their component amino acids.

Many of the liver systems for phase two biotransformation — often referred to as “detoxification” — utilize amino acids as the carrier molecules to move toxicants out of the body. Without these amino acids, the entire system backs up.

Insufficient digestion of the proteins into their amino acids has been thought to be one of the underlying factors leading to adverse food reactions (allergies). Having adverse reactions to the foods you eat is one of the main components of the total load that can cause a number of symptoms.

When patients stop consuming wheat and sugar products, they will often have a drop in their allergic reactivity. The respiratory and digestive tracts are lined with mucous membranes. If you are causing irritation to your gastrointestinal tract (GI) mucous membranes, your respiratory membranes will show the strain by being much more reactive to environmental toxicants.

Having enough digestive enzymes is not only one of the ways that dysbiosis may be limited, but they may also help to reduce the total load of endotoxins (lipopolysaccharides).

### ***Boost immunity***

Support a healthy intestinal environment and digestion by providing your patients with a high quality, comprehensive digestive enzyme. An efficacious

formula will contain a full spectrum of enzymes to promote healthy digestion for all major food groups, including proteins, carbohydrates, fats, and fiber throughout the entire digestive system. When necessary, prescribe a blend with specific enzymes to address food intolerances such as gluten, lactose, casein, and phenol.

Promoting proper digestion and elimination can dramatically reduce the amount of antigens and endotoxins in the bowel and blood. This will lower your patients' total load of antigens, making their bodies less reactive. Add to this regimen a high quality probiotic to boost overall immunity.

*Walter J. Crinnion, ND, is a best-selling author, professor, and chair of the Environmental Medicine Department, Southwest College of Naturopathic Medicine. His book, Clean Green, and Lean is published by Wiley Publishers. He can be reached through [www.CrinnionMedical.com](http://www.CrinnionMedical.com).*