

Chlorella and Cilantro, The Detoxifying Duo

Back in the early part of the 20th century, there was a growing concern among the industrialized nations that the global population was growing at an alarming rate that would eventually out-pace the world's total food production capabilities. A new field of research was developed in order to find either alternative food sources that could be produced more efficiently or develop a new food production paradigm that would satisfy the imminent global food demand.

One product that seemed to have a stellar potential to satisfy those criteria was *chlorella*. Chlorella is a micro-alga that grows in shallow water and grows quickly and abundantly in certain environments. What made it so appealing, however, was its incredibly high nutrient content. Chlorella contains up to 50% protein, 20% carbohydrates, 20% fats, 10% of various vitamins and minerals, and 5% fiber. When you consider that contemporary protein sources are livestock and require a tremendous amount of feed manpower, and energy to produce per pound, the fact that chlorella grows in water and sunlight with little human input was too appealing to not pursue for those scientists back in the late 1930s.

The plans were to create vast acres of chlorella farms that would use giant pools of water exposed to open sunlight that would culture tons of chlorella. Since chlorella has the highest percentage of chlorophyll per unit of weight in the entire plant kingdom, it was theorized that the amount of photosynthetic energy it would produce would be sufficient to create its high protein content with minimal human input. Unfortunately, what is sometimes based on laboratory theory can fall flat on its face when applied in the field, and such was the fate of the chlorella farms of the 40s. Open sunlight was apparently not the optimal growing condition. Artificial light sources were required, and it also

had a peculiar fondness for carbonated water, and it was only under these labor intensive (not to mention expensive) conditions that chlorella could have been produced on the scale necessary to feed the entire planet. Today, chlorella is produced on a much smaller scale utilizing small pools under well controlled environmental conditions.

Just because chlorella could not be mass produced, though, does not mean that chlorella is not a tremendously beneficial food source. Quite the opposite, in fact, chlorella is not just a "super food", its unique structure performs several powerful functions in the human body when ingested that are of tremendous benefit today.

Two unique properties of chlorella are its tremendously high chlorophyll content, and its rough fibrous outer layer. Most people recognize chlorophyll as the green substance in nearly all plant life that is required for the production of energy through photosynthesis of sunlight. When consumed by humans, and other animals, it actually acts as a first stage detoxifier because of its ability to bind with various substances and compounds and prevent their absorption through the intestinal tract.

Chlorella is able to accomplish this same feat by supplying chlorophyll, but it can also prevent the absorption of heavy metals like lead, arsenic, cadmium, and even uranium. It's not the chlorophyll content, but rather the unique structure of its fibrous outer layer that "captures" these substances and binds to them and allows them to be safely excreted from the body safely.

Japan has had its fair share of disaster over the past century, not just from the recent tsunami and subsequent nuclear reactor meltdown, but also from the devastating atomic weapons detonations over Hiroshima and Nagasaki at the end of the 2nd World War. Japan has

dedicated a lot of its scientific research efforts into finding ways to help people recover from the exposure of such toxic substances through detoxification. That is why it has been predominantly Japanese research into chlorella that has shed the light on its unique abilities to detoxify the body of heavy metals, as well as prevent their absorption.

Various studies conducted in both Japan and the United States have demonstrated chlorella's ability to increase total body excretion of various toxic elements and chemicals including mercury, lead, cadmium, tin, antimony, aluminum, uranium, arsenic, copper, and nickel. A study conducted by the U.S. Army all the way back in 1950 showed that guinea pigs fortified with chlorella showed an increased resistance to X-rays given in lethal dosages.

Animal studies also showed that chlorella can prevent the absorption of PCBS, which are tremendously toxic chemicals that were used predominantly prior to the 1980s as coolants, adhesives, plasticizers and a plethora of industrial applications. They were used right up until their production was banned by the U.S. government in 1979 after several environmental disasters occurred where large amounts of PCBs found their way into local water supplies and caused illness in several states including the Carolinas, New York, Massachusetts, Indiana, and Alabama.

Besides, PCBs, chlorella can also remove similar classes of chemicals, which include various pesticides and toxic industrial chemicals which every one of us in the industrialized world are exposed to on a constant basis. Nearly every environment from the air, to the water and soil, even the food we eat, has been polluted by industry. Chlorella is one substance that can provide us with a significant degree of protection from the ingestion of these toxic substances.

There are several species of chlorella, but the two most common species are *C. Pyreneidosa* which is difficult to digest for some individuals because of its tough outer layer, but this in turn means that it has a superior toxin binding ability compared to other species of chlorella, such as *C. Vulgaris* which is easier to digest, but has less toxin absorbing capability. This is not to say that it is not an effective absorber of toxins, just less so than *C. Pyreneidosa*.

Even though chlorella is tremendously effective at preventing the toxic substances from being fully ingested, as well as captured in the blood stream, it does have some limitations. Intracellularly stored toxins, those substances which the body was unable to process and excrete that have been stored inside of the cell walls, are beyond the reach of chlorella. Chlorella is most effective in the digestive tract where its fibrous outer layer is further broken down through the digestive process and has more opportunity to bind with substances that were orally consumed.

There is a substance that can reach these intracellular toxin pockets. Surprisingly, it is actually a very common spice and garnish. Chinese parsley, otherwise known as *cilantro*, which is the leaf of the coriander plant, is actually an incredibly powerful detoxifier. It is one of the only known substances that can actually reach inside of the cell walls, even inside of the nucleus of the cell where toxins can damage the cellular DNA, potentially causing harmful mutations. It can reach inside of bone. It can reach into the central nervous system. It is incredibly pervasive, but there is also a downside.

Downside is actually a misleading term. What one should be aware of with cilantro is that it will actually draw out more toxins that it can remove on its own. This effect is known as re-toxification. Toxins that may have only been effecting one area can now travel to a different

location, and/or concentrate elsewhere and lead to unforeseeable consequences.

In sophisticated heavy metal detoxification programs, this is actually the intended effect. Since all of these toxins that were previously inaccessible are now mobile in the body, they are also more easily targeted by substances that can reach them outside of the protections of the cellular walls. Chlorella is particularly effective in this manner.

Cilantro and chlorella taken simultaneously create an effective foundation for heavy metal detoxifications programs. The chlorella binds with toxins in the gut before they have a chance to enter the body, as well as enticing the body to excrete the toxins drawn out by cilantro that the chlorella previously couldn't reach. The cilantro likewise pulls the toxins from deeply protected intracellular locations so that other binding agents like chlorella, DMPS, EDTA can reach them and safely guide them to the excretion pathways to detoxify the body and return it to a healthier state.

A few important things to keep in mind both before you start taking either chlorella or cilantro is that some people have difficulty digesting chlorella that has not been properly processed and require the help of digestive enzymes. The other factor to keep in mind is the potential effects that the detoxification of heavy metals will have on your body. Because of the retoxification that cilantro creates, your body may begin to exhibit symptoms of toxicity. Each person exhibits symptoms differently depending on their level of toxicity. A common mistake that sometimes occurs is that people start taking these supplements and then begin exhibiting symptoms, and then panic and pull back on the dosage of chlorella and cilantro. The smarter approach is to actually *increase* the dosage of chlorella in particular because it is the more effective of the two at binding with the toxins and removing them. Getting the toxic

substances out of the body is the priority, and the best way to reduce symptoms.

This is just a general recommendation, and as with any health program, particularly one as in-depth and high variability as heavy metal detoxification, you should not begin such a program, or change your supplement regimen without first consulting a qualified medical professional who is familiar with your medical history and has conducted the proper testing to ensure your safety and has the ability to offer some predication as to the unique experience you could have on such a program.

Detoxification programs are not just the wave of the future, but the necessity of the present, and it is an important process that everyone should consider for themselves. At the very least, the potential protections that chlorella and cilantro can offer to everyone at a reasonable price with widespread availability, is a remarkable relief in such a toxic world as the one we live in. Until these conditions change, we are going to need them.



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