

INFORMATION ABOUT TOXINS AND LIQUID ZEOLITES (clinoptilolite)

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www.healthyagingtools.com

Printed in the United States of America.

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Toxins and Your Health: An Introduction

WE LIVE IN a toxic environment. There is no denying the reality. You need only to turn on the evening news or read the paper to realize how many new health threats exist today compared to fifty, twenty, or even ten years ago. We are now exposed to even more damaging UV rays, even more industrial chemicals, even more preservatives in our food, and even more pollutants in our air and water.

A direct result of the damage caused by these exposures is an increased incidence of familiar chronic diseases, such as arthritis and autism, and newly-described diseases, such as chronic fatigue syndrome and fibromyalgia. The list of cancer causing chemicals is growing longer, as is the list of prescription pharmaceutical drugs we supposedly need in order to address all of the symptoms we are experiencing. This toxic dilemma is not limited to the United States-it is a global problem.

Consider the following:

- Approximately half a million (85,000 since WWII) new, and potentially toxic, industrial chemicals have become part of our global environment, with the number increasing daily.
- Studies indicate that up to half of all municipal water supplies are contaminated with potentially harmful pollutants.
- The World Health Organization (WHO) recently released a warning about the increasing dangers of worsening air pollution, particularly indoor toxin exposure, to public health.
- The U.S. Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA) have both released warnings recommending limited intake of

fish by pregnant and nursing women, due to the toxic levels of mercury found in tuna, shark, swordfish, tile fish, and king mackerel. These agencies state that these mercury levels are known to cause fetal brain damage.

- In a recent study conducted by the Center for Disease Control (CDC), 10 percent of women were found to have levels of mercury so high as to cause fetal brain damage.
- Results of another recent study demonstrated findings of over 200 industrial chemicals, some of which are known to be carcinogenic, in the cord blood of newborns.
- Some experts believe that approximately 75 percent of all cancers may be linked to environmental toxins and are not genetically based.

Evidence is building about the effects of our toxic environment on our long-term health and toxins' role in chronic diseases. Although scientists have known for quite some time that pollution and pesticides can adversely affect human health, mounting evidence reveals far more deadly connections between toxic exposure and a variety of diseases. The most disturbing discovery is that chronic exposure to even low levels of common toxins can have negative health effects as the toxins accumulate over time, damaging the neurological, immune, and endocrine systems.

To complicate matters, many governments and health organizations do not seem to be addressing this serious problem. Without accountability and clean-up programs, the toxic exposure overload continues to spiral out of control.

Fortunately, there are ways to counteract the long-term buildup of toxins in the body and reduce their negative effects on our health. Natural compounds do exist that can safely bind and remove harmful toxins from the body. One group of such compounds-comprised of what we typically refer to as zeolites-includes some of the safest, most effective and natural detoxifying minerals known, and these minerals are now available in a purified liquid form. It can target and safely remove toxic heavy metals, can balance the body's pH levels, can bind viral sub-particles, and can improve digestive function by allowing better absorption and assimilation of nutrients.

The following are frequently asked questions about toxins, their effects, and what can be done to minimize their damaging effects, including using detoxifying supplements such as liquid zeolite.

1. What are toxins?

Toxins are generally defined as anything in our environment with the potential to negatively affect the health and function of the body. These dangerous foreign substances can be consumed through polluted food or water, breathed in through the air, or absorbed through the skin. They may be organic biotoxins or inorganic toxins such as poisonous chemicals and other toxic man-made substances. Ultimately, all toxins take a serious toll on our health and can even cause cancer. The damage can result quickly from exposure to a large or very concentrated dangerous toxin, but more often, it, results from a gradual accumulation of smaller amounts of less-potent toxins from a variety of sources, often referred to as "chronic toxic overload."

2. What are the most common sources of toxins?

Toxins are found in the water we drink, the air we breathe, and the food we eat. We come in contact with them in the form of pesticides, herbicides, food additives and preservatives, smog, car exhaust, household chemicals, and even certain compounds in hygiene and beauty products. Vaccines and prescription drugs may also have toxic side effects.

Perhaps more troubling than the sources of these toxins is the prevalence of toxins. We now come in contact with more toxins than ever before. It is estimated that we are exposed to more than 100,000 toxins in our environment, a quarter of which are known to cause cancer. In one year alone, the EPA estimated that 1.9 billion pounds of chemicals ended up in our water supplies, and 2.4 billion were released into the atmosphere. Meanwhile, the National Research Council (NRC) recently estimated that a shocking 70,000 commercially-used chemicals have not even been tested for toxic effects.

This constant bombardment puts our body in a state of chronic toxic overload, which puts us at risk for several diseases. The most common types of toxins that may affect our health include:

Dioxins: Notorious for their harmful effects on hormones and the endocrine system, these by-product pollutants are widespread and linger for years in the environment.

Furans: The result of plastic production, these toxins are considered very toxic to the endocrine system and are believed to have cancer-causing effects.

Heavy metals: There are over twenty toxic heavy metals to which we are commonly exposed. Of greatest concern are mercury, arsenic, lead and cadmium, whose affects range from developmental abnormalities and behavioral disorders to cancer.

Mercury is found in dental amalgam, infant and adult vaccines, many types of fish, thermometers and fluorescent lights to name a few sources. Coal-fired power plants are the number one source of mercury emissions into the air world-wide.

Arsenic is a common contaminant of water, especially near mining activities, and has been for decades, to manufacture "preserved wood" building materials.

Lead is common toxin released during mining and petrochemical manufacturing processes.

Cadmium exposure has increased rapidly over the past few decades, with cigarette smoke being a major source. Even low levels may contribute to kidney disease and bone disorders.

PCBs: Polychlorinated biphenyl, a class of toxic aromatic compounds. Although banned in the U.S. in 1976, these industrial chemicals can linger in the environment for decades and have been linked to cancer and disorders of the nervous system.

Pesticides: Although largely banned, pesticides such as organochlorine insecticides, DDT, and others tend to accumulate in the environment and have been linked to adverse reproductive health and cancer. Organophosphate insecticide metabolites are known to be potent nervous system poisons and are found in foods.

Phthalates: Found in several health and beauty products, as well as some children's toys, these toxins were recently banned in Europe and have been known to cause male reproductive birth defects.

Volatile and semi-volatile organic chemicals: These industrial solvents (also found in gasoline) negatively affect the nervous system and have been linked to cancer.

3. Is it true that even food is a common source of dangerous toxins?

Unfortunately, food is a large source of dangerous toxins. Many packaged and processed foods contain countless numbers of artificial colors and flavors, preservatives, additives, fortifiers, artificial sweeteners, and other unnecessary ingredients. Foods also may have been genetically altered, irradiated, or otherwise tampered with. For instance, meats and dairy products may contain antibiotics and hormones. Just recently, the application of viruses to food contaminated with *E. coli* bacteria has been approved. Meanwhile, the long-term health effects of consuming these types of foods have not yet been established. Taken separately, each of these toxins may be relatively harmless, but its collective effect on the body can be considerably even more damaging. The chronic toxic load in our bodies created by all of these foreign chemicals can only be fully demonstrated over time-and by then it may be too late to reverse the damage.

Those who avoid packaged and processed foods are still at risk. Pesticides are a large source of toxic exposure in produce. One shopping cart of fruits and vegetables may contain 60 to 80 different pesticides. Meat-eaters are exposed to the additional threats of nitrosamines and nitrates; these carcinogenic substances are found in processed meats.

4. Why are toxins a threat to my health?

The fact that toxins can be dangerous to our health has been known for quite some time, but our understanding of how exactly low-level toxic exposure threatens our health, and to what extent, is only now being discovered. Research on the detrimental health effects of toxins connects even a little exposure over time to chronic and life-threatening diseases. The danger of toxins lies in the fact that they are invisible, so are not easily avoided; likewise, their effects do not surface immediately, so the damage done does not necessarily deter repeat exposure. But just because a toxin won't cause immediate death or severe organ shutdown doesn't mean it is less dangerous or that the body is any better equipped to deal with it. Basically, when a body's toxic load becomes greater its ability to adapt to it, its health suffers.

Recent research on the long term health effects of what have previously been deemed as "relatively harmless" toxins is more than just a little worrisome. Scientists are discovering that continued exposure to common, "non-lethal" toxins can negatively affect major body systems. In fact, Britain's *Environmental Toxins Foundation* recently stated that there is "mounting evidence of

structural and genetic damage, potentially caused to the human morphology, through the huge influx of chemical agents found in the air, soil and water today."

Consider the following: In a recent study, more than 160 environmental toxins were discovered in the collective blood and urine of test subjects. Of these toxins, over 75 were identified as cancer causing, more than half were known to damage the brain and nervous system, and almost 80 were known to affect fetal development and cause birth defects.

5. Are children more susceptible to dangerous toxins than adults?

According to the *Agency for Toxic Substances and Disease Registry*, children are far more vulnerable to toxic exposure, even in the womb. Toxins have been identified in the placenta of pregnant women and infant umbilical cord blood. Basically, the fetus will be exposed to any toxin the mother is exposed; however, the much-smaller child's body is still developing and is much more vulnerable to toxic effects. In fact, a recent study analyzing blood from umbilical cords found an average of more than 200 man-made chemicals present, with over half of those linked to cancer and/or birth defects. Rather than protecting and nurturing the unborn, these babies were being exposed to pesticides, waste products, dioxins and other dangerous chemicals. Even the air a woman breathes may affect her unborn child. According to a 2005 report from Science News, pregnant women who breathe polluted air give birth to smaller babies than those in less-polluted environments.

After birth, the child is also at risk, especially during the first six months of life. Infants breathe more than twice as much air and consume much more food and water per pound of body weight than does the average adult. Toddlers and school-age children are at risk as well, not only because of a higher food and water intake, but also because of their school and playground environments. In addition, chemicals in common plastic toys may be dangerous because of a young child's tendency to put things in their mouth.

The toxic exposure is more concentrated in a child's smaller and still-developing body. The immune system is immature compared to that of the average adult, and the detoxification pathways of the liver are fragile, making detoxification less efficient in children. Children's organs and body systems, such as the nervous and reproductive systems, are also still developing, so structural damage to them from toxic exposure may be more serious and possibly permanent. For instance, children are known to be especially susceptible to neurological damage from lead poisoning because of their higher gastrointestinal absorption and more permeable blood-brain barrier when compared to adults. The increase in diagnoses of autism and attention deficit disorder in children has been linked to toxic heavy metal overload, especially mercury.

Ultimately, the effects of most low-level toxin exposure occur slowly over time, so the earlier you can offset or reduce exposure levels, the better. Healthy adults start as healthy children.

6. How do prescription drugs and other medical treatments contribute to toxic overload?

It may not come as a shock to many readers that pharmaceutical drugs can also increase toxic overload. The liver is often times so compromised that it is unable to properly metabolize medications, resulting in toxic side effects. If you are unsure, read the side effects listed in an advertisement for any prescription drug. Some treatments, like x-rays, are more obviously damaging than others. Most people are aware of the extremely damaging effects on the body when a patient undergoes highly toxic chemotherapy or radiation therapy. However, any pharmaceutical agent can add to the body's toxic load and potentially compromise health over time. This is part of the reason why 25 percent of all pharmaceutical drugs approved by the FDA are recalled within five years of approval.

7. What is toxic overload and what are its symptoms?

The acute effects of toxic exposure can be prominent, but more often, toxic effects build slowly over time. In fact, one recent study found that subjects tested positive for more than 90 pollutants and industrial chemicals after blood and urine tests, even though none of the individuals studied worked or lived near high-risk industrial areas. In another study from the CDC, subjects tested positive for more than 116 chemicals, many of them banned at least two decades prior because of their health risks.

Because chronic toxic overload happens over time, the effects of exposure may be overlooked. In fact, many symptoms of chronic toxic overload are associated with other conditions and so are misdiagnosed. Chronic contact with toxins, even sources that aren't considered dangerous, will eventually take its toll on the body. *Immuno-toxicity* may surface as asthma, allergies, chronic infections, or cancer, while *neuro-toxicity* may appear in the form of dementia, decreased cognition, mood disorders, or memory problems. Signs of *endocrine toxicity* include problems with libido, reproduction, menses, metabolism, insulin resistance, or the body's inability to handle physical and emotional stress.

Symptoms vary from person to person, but in general, symptoms commonly associated with a chronic toxic overload state include:

<ul style="list-style-type: none"> ○ Allergies . ○ Chronic colds and other infections . ○ Depression or changes in mood . ○ Fatigue . ○ Forgetfulness or memory loss . ○ Headaches . ○ Intestinal conditions . ○ Irritability . ○ Joint pain . 	<ul style="list-style-type: none"> ○ Lethargy . ○ Nervousness . ○ Sensitivity to odors such as perfumes . ○ Weakness " . ○ Weight changes . ○ Hormone imbalance . ○ Immuno-suppression . ○ Insomnia . ○ Anxiety
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The most common early symptoms of toxic exposure are likely to be fatigue, difficulty concentrating, decreased energy levels, mild intestinal complaints, and muscle weakness. If the body remains in a toxic state for a long period of time, more serious side effects may develop. In

addition, if a person has a certain genetic predisposition for a condition or disease, toxic overload may increase the body's vulnerability to it and possibly accelerate its development or progression.

8. What conditions are linked to toxin overload?

Scientific data now shows that recurring exposure to toxins -- even in small doses -- damages the immune system, increases cardiovascular disease and cancer risks, interferes with essential enzyme activity in the body, affects hormone balance and cell growth, and inhibits brain function. Below is a short list of some health conditions (diseases) that are linked to toxin overload:

<ul style="list-style-type: none"> ○ Aging ○ ADD, ADHD ○ Allergies ○ ALS ○ Alzheimer's disease ○ Anxiety disorders ○ Arthritis ○ Arrhythmia ○ Asthma ○ Autism · ○ Bipolar affective disorder (manic depression) ○ Cancer ○ Cardiovascular disease · ○ Chronic fatigue syndrome ○ Dementia · ○ Depression · ○ Diabetes · ○ Eczema · ○ Fatigue · 	<ul style="list-style-type: none"> ○ Fibromyalgia ○ Hypercholesterolemia ○ Insomnia ○ Infections (i.e.: Lyme disease, Hepatitis C, HIV) · ○ Liver dysfunction ○ Macular degeneration · ○ Mood disorders · ○ Multiple chemical sensitivity ○ Multiple sclerosis · ○ Neuropathy, Neuritis · ○ Obesity ○ Osteoporosis ○ Parkinson's disease · ○ Renal (Kidney) disease · ○ Reproductive disorders · ○ Stroke · ○ Systemic Lupus Erythematosus (SLE) · ○ Tinnitus
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Ultimately, what researchers are discovering is that by reducing our exposure to pollutants and toxins and eliminating toxic buildup in the body, we lower our risk of developing numerous diseases, which results in more energy, improved overall health, longevity, and a greater sense of well-being.

9. Is there research that provides definitive proof of toxins' role in causing disease?

The research linking chronic disease to toxins continues to build, and the results of these studies are more than a little unsettling. Lead exposure alone has been linked to cancer, cardiovascular disease, stroke, heart attacks, renal failure, osteoporosis, and macular degeneration. Another recent report found compelling evidence that tens of thousands of chemicals may contribute to the development of breast cancer by adversely affecting hormone function or gene expression. This is not surprising

when you consider that fewer than one-tenth of breast cancers are related to a genetic predisposition, and in nearly half all cases, causes cannot be linked to traditional cancer-risk factors.

In a 2005 article published in *Alternative Therapies* titled "Metals in Medicines" the authors cited numerous examples of how new links between heavy metals and disease are leading the medical community to change its approach to disease and wellness and to increase awareness about these threats. Several breast cancer advocacy groups are also making connections between breast cancer and environmental toxins, even drawing parallels between the increased risk for developing breast cancer (one in seven) and the incredible surge in toxic exposure, especially from estrogen-mimetic pesticides, in our environment.

Research suggests that thousands of synthetic chemicals may have the ability to impair hormone function and interfere with the health of the body on a genetic level. Household cleaning supplies, health and beauty products, pesticides, and even drugs and x-rays have all been implicated in this increased danger. One study found that a chronic condition in women called endometriosis may be linked to a toxin called dioxin.

10. What can I do to combat toxic overload?

There are many things we can do to reduce our exposure to environmental toxins and to minimize their presence in and effect on the body. Drinking *purified filtered water* instead of tap water is an excellent start in decreasing your exposure to excessive fluoride, chlorine and toxic heavy metals such as mercury, arsenic and lead. *Dietary changes*, such as limiting consumption of prepared and packaged foods while emphasizing whole natural foods, are helpful. In fact, a recent study out of Seattle found that children's blood levels of pesticides dropped to almost nothing after following an organic diet for as little as a week. But as soon as they returned to their normal diet, pesticide levels shot up again. Of course, blood levels do not reflect the toxic tissue load of the children, but the message is clear that it is beneficial to *eat organic foods* when trying to decrease toxic exposure. Exclude the following types of *fish* from your seafood intake, especially if you are pregnant: tuna, shark, swordfish, king mackerel, tile fish, and all farm-raised fish.

Not smoking and *limited alcohol* consumption (one glass of organic red wine or beer daily) are also important. Smoking cigarettes and drinking alcoholic beverages increase the body's toxic exposure. Another helpful practice in reducing your exposure to environmental pollution is using natural health and *beauty products* and non-toxic *household cleaners*. In addition, it is a good idea to take prescription or over-the counter medications only when absolutely necessary.

Perhaps most important is the role of *nutritional supplements* in relieving the stress of toxic overload. Supplements are important because, although we can reduce our exposure to dangerous toxins, we cannot eliminate exposure completely. Therefore, we need to be able to do something to remove existing toxic buildup from our bodies. Integrative medicine, complementary, alternative and natural health practitioners know the importance of regular detoxification to promote optimal health. Detoxification protocols are often the hallmark of these health care professionals because they recognize that addressing toxicity and the associated damage is critical for symptom

alleviation and disease prevention. Naturally detoxifying supplements can help to safely eliminate toxins that have accumulated in the body and help prevent toxic overload.

11. What is detoxification and why is it so important?

Considering the incredible metabolic stress put on the body by the demands of the toxic environment we live in, it is nearly impossible to achieve optimal health without undergoing regular detoxification treatment. Although one can try to reduce exposure to toxins in the environment, one can never eliminate them entirely. Daily detoxification protocols are the best way to eliminate dangerous toxic buildup. In fact, research seems to suggest that detoxification can reduce risk factors for several diseases and improve the health of people with chronic conditions. Studies link heavy metal detoxification using chelation therapy to improvements in individuals with cardiovascular and kidney disease and osteoporosis.

The term "detoxification protocol" encompasses a wide variety of therapies designed to cleanse the body of toxins and other impurities. A detoxification treatment can be as simple as fasting or drinking purified water, or it can be an elaborate program involving diet and lifestyle changes, which can include taking one or more supplements. Some detoxification programs involve drinking organic fruit and vegetable juices, and avoiding processed foods, meat, and dairy products. Other programs incorporate treatments like colonics or chelation therapy. It is necessary to one's health and wellness to include regular detoxification protocols in daily life. The following are the most effective modalities:

Infra-red sauna Infra-red hand-held lasers · Lymphatic drainage Energetic bodywork Cranial-sacral work · Acupuncture · Chiropractic	Massage · Chelation Colonics · Herbs · Glutathione MSM, Cysteine, N -acetylcysteine · Chlorella, Algae
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12. Are there supplements I can take to rid my body of toxins?

Several supplements are known to have detoxifying properties including herbs like garlic, echinacea, dandelion root, cayenne, ginger, licorice root, and goldenseal, as well as antioxidant supplements like vitamins C and E. But perhaps the most exciting newly-available chelating natural mineral is liquid zeolite which has the capability to bind and eliminate several kinds of toxins, viral sub-particles, allergens, and heavy metals from the body.

13. What are zeolites? See picture at the end

Zeolites are naturally occurring crystalline minerals made up of an alumino-silicate backbone. Commonly found in rock deposits, these micro-porous compounds are formed by the crystallization of volcanic rock and ash when they come in contact with fresh or salt ground water over millions of

years. The name , "zeolite," coined in the 1700s by Swedish mineralogist Axel Fredrik Cronstedt, comes from the Greek meaning "boiling stone" because of the bubbles and steam that form on its surface when rapidly heated (the result of zeolite's water content).

14. How do zeolites work?

The molecular structure of zeolites actually resembles a honeycomb. Each honeycomb-like cell or cavity in a zeolite is made of an alumino-silicate matrix. The cell carries an overall negative charge, and like a magnet, attracts positively charged particles. For charge stability, a zeolite attracts and carries positively charged ions, such as calcium, sodium, magnesium, potassium, and iron, within it to balance out the negative charge.

Positively charged ions outside the zeolite structure, such as heavy metals, free radicals, and viral sub-particles, can' also enter the porous zeolite by simply exchanging places with another less-tightly bound ion that's already inside. This exchange of one particle for another that has a greater affinity with the zeolite is what gives the compound its detoxifying properties. Also, because liquid zeolite comes "pre-activated" with health-promoting ions like calcium, magnesium, iron, and potassium, it provides a two-for-one benefit. The exchange removes toxins from the body and replaces them with essential nutrients.

Zeolites are capable of selectively attracting and binding toxic particles, whether they are heavy metals, radioactive particles, viruses, or other dangerous substances, and safely removing them before they negatively affect overall health. Not only do zeolites eliminate toxic buildup, they also enhance immune function, alkalize the body, improve metabolic function and nutrient absorption, and improve the body's resistance to diseases like cancer through activity on the p21 suppressor onco-gene.

15. How long have zeolites been used to improve health?

Zeolites, particularly zeolite powder, have a long history of traditional medicine use dating back at least a thousand years. Records show that the zeolite has been a part of traditional remedies throughout Asia, and in a more recent example, zeolite powder was given to victims of the Chernobyl fallout to reduce radiation levels in their bodies. In fact, twenty tons of zeolite were dumped on Ukraine and Belarus to bind the radioactive elements, strontium and cesium. Zeolites have also been used for decades to improve the digestive health and weight gain of stock animals in Europe and the Mediterranean regions that long ago banned the use of hormones and antibiotics as growth promoters. Zeolites are now being recognized for their exceptional characteristics in promoting human health.

16. What scientific research exists to back up the health benefits of zeolite?

Although zeolite supplements are relatively new on the health scene, the compound has been well researched by scientists who have found many tested medical and industrial uses for the mineral compound. Research into zeolite's health benefits is currently expanding. In fact, there is currently a patent for using liquid zeolite as an anti-cancer agent. Promising research is currently underway examining how this emerging health supplement binds and eliminates toxins; the research also

considers its immune-boosting benefits and its uses as treatment for cancer, alleviating digestive complaints, and improving blood sugar regulation.

17. How does zeolite remove heavy metals from the body?

The heavy metals most dangerous to human health are mercury, lead, cadmium, and arsenic. Despite the known risks associated with heavy metal toxicity, exposure to these toxins continues to increase through the use of dental mercury amalgam and the mercury vaccine preservative, Thimerosal..

Liquid zeolite's negatively charged-matrix structure allows for the attraction, binding and removal of positively charged particles from the body through a process called "cation exchange." The heavy metals with the highest affinity for the zeolite, in order, are: mercury, lead, arsenic, aluminum, and excess iron. The binding affinity is based upon charge, size, weight and density of these ions. Once in the matrix, the toxins are tightly bound and, within hours, eliminated through the urinary tract from the body. The long-term effects of using liquid zeolite supplements for heavy metal elimination could include reduced risks for cancer and heart disease.

18. Is liquid zeolite supplementation another form of oral chelation therapy?

The short answer is "yes." Oral chelation therapy was originally developed to treat heavy metal poisoning, especially lead poisoning. The term "chelate" (pronounced *kee-late*) refers to the ability of a compound to combine with a heavy metal, allowing the toxin to then be excreted by the kidneys and liver during detoxification. Traditional chelation treatment generally involves using certain chemicals that have an affinity for toxic heavy metals, such as EDTA, DMSA, and DMPS. Many negative effects could occur during traditional chelation therapy, due to the weak binding of the agents to the heavy metals, which could allow the heavy metals to be re-deposited elsewhere in the body or brain and not be excreted.

Liquid zeolite, on the other hand, irreversibly binds the toxic heavy metals and quickly removes them through the urinary tract. The zeolite is also able to correct pH balance by loosely attracting the large hydrogen ions on the basis of concentration gradient. Conventional chelating agents, on the other hand, tended to worsen the pH balance. The only side-effect associated with using the liquid zeolite is possible mild dehydration, which is totally preventable by drinking plenty of fluids while using the supplement.

Whereas some experts worry that traditional chelation treatments may also remove from the body essential minerals, as well as possibly increasing the likelihood that some heavy metals will be absorbed by the body during therapy, liquid zeolite does not have these same risks and does not have the same liver and kidney burden as chelation treatment. Because it is so safe, pregnant and nursing women are encouraged to use the liquid zeolite to help decrease toxins going through the placenta to the fetus and to detoxify the breast milk the infant requires.

19. What are antioxidants and what are the antioxidant properties of zeolite?

Although oxygen is necessary for proper cell function, cellular processes involving oxygen to create energy also result in something called oxidation. Oxidation is a chemical process that results in certain atoms losing electrons and becoming unstable. This is the same process that causes a coin to tarnish or a banana to turn brown. These destabilized molecules are known as free radicals, and they can cause cellular damage by stealing electrons from healthy cells. In fact, between 1 and 3 percent of the oxygen we inhale results in the creation of free radicals, and our cells are exposed to billions of free radicals each day.

Oxidative stress can also be increased when we are exposed to pollution or chronic infections. Even regular exercise can increase oxidation. If they are not neutralized, free radicals attack and damage healthy cells and their DNA. They can cause premature aging, immune dysfunction, and a myriad of diseases, including cancer, cardiovascular disease, Alzheimer's, and Parkinson's disease.

Some oxidative stress is dealt with using the body's own internal defenses, but the best way to counteract the effects of oxidation is by using antioxidants found in foods, and supplements such as vitamins and minerals. Antioxidants neutralize free radicals through the donation of an electron, thereby protecting the body from oxidative damage. Some of the more well-known antioxidants include vitamins C and E, and foods such as acai berry, mangosteen, goji, green tea, grapes, and pomegranates.

Zeolite is also considered to have antioxidant properties. Its structure traps not only toxins such as heavy metals, but also free radical molecules. However, unlike classic antioxidants, zeolites do not neutralize free radicals by donating an electron to stabilize them. Instead, the structure of the zeolite is such that it captures the free radical and locks it safely away so that it cannot harm the body. Once trapped in the zeolite, the inactivated free radical can then safely be eliminated from the body.

Although zeolite may be an effective antioxidant, it should not replace traditional antioxidants such as vitamins E and C, which promote optimal health in more than ways than just fighting free radicals. For optimal antioxidant effect, consider using zeolite along with traditional antioxidants for a synergistic effect.

20. Can zeolite supplementation help combat the common cold, flu, and other viruses?

Yes, zeolite fights viral infections through a two-pronged approach. First, it is believed to attract and bind viral sub-particles, there by interfering with viral replication in the body and halting its progression by eliminating them from the body. Zeolite supplementation may also interfere with viral proliferation. A study on the antiviral activity of micronized zeolite found that it slowed the proliferation of human enteroviruses and type-1 herpes simplex through nonspecific antiviral activity. The study suggested that there may be a therapeutic application for zeolite in the treatment of herpes virus (topical use) and enterovirus (oral use).

In addition to its broad-spectrum antiviral properties, zeolite boosts immune function, which protects the body and helps it fight infection. By interfering with viruses themselves and boosting

immunity, zeolite may offer the right combination of safe, natural immune support necessary for optimal health. And because zeolite removes heavy metals and other toxins from the body, the immune system is more likely to be healthier and better able to deal with microbial invaders.

21. Does zeolite "cure" cancer?

While the rise of modern industry has resulted in an increase in cancer-causing chemicals, one of the great challenges of modern medicine is the task of preventing, treating and curing cancer. The potential for using zeolite to treat cancer has recently gotten the attention of some scientists. A growing body of evidence supports zeolite's role in cancer treatment.

Zeolite may help to eliminate carcinogenic toxins from the body, especially a category of carcinogens called nitrosamines. The most common sources for these nitrates include processed meats, cigarettes, and beer, and they have been linked to pancreatic, stomach, and colon cancers. Even with diet restrictions, most people still consume more nitrates than they should for optimal health. Zeolites, however, can reduce nitrate absorption as well as the absorption of several other carcinogenic substances.

Even more interesting is research demonstrating the ability of zeolite to suppress tumor growth. Studies conducted using cell models and animals have been promising. In one study, zeolite was found to target certain tumor suppressor genes, thereby inhibiting tumor growth. In another study, zeolite was given to animals with varying types of cancer. Supplementation with zeolite led to tumor shrinkage and overall health improvement in some animals, with one of the most exciting results involving skin cancer. Although the degree of improvement varied depending on the animal and type of cancer, significant improvements were seen in some animals, and none suffered any side effects.

Zeolite's antioxidant properties may also prove beneficial to cancer patients since antioxidants have a long track record of aiding cancer treatment programs, though in some cases, the exact mechanism that makes antioxidants useful for cancer treatment is still not well understood.

Although research shows that liquid zeolite may prove helpful to individuals suffering with cancer, zeolite treatment cannot be classified as a "cure" for the disease. To make such a claim using the sampling of studies available, even studies with promising results using zeolite to treat cancer, is not just misleading -- it would be irresponsible and bad science. No food supplement, however promising, is allowed to make such claims without extensive, rigorous testing. Nevertheless, zeolite may safely be integrated into a cancer treatment program. The only caveat to using liquid zeolite with other anti-cancer modalities would be regarding the potential for interaction of the zeolite with any chemotherapeutic agent comprised of heavy metals such as cis-platinum. It is recommended to avoid using zeolite both two days before and two days after exposure to a chemotherapeutic agent such as cis-platinum. This is based upon the half life of the zeolite in the body, which is 4-6 hours.

22. Can zeolite help control blood sugar levels?

Research on using zeolite supplements for this purpose is encouraging. Since the glucose molecule carries a positive charge, though it is too large to fit inside the zeolite's cavities, it will attach itself to the outside of the negatively charged zeolite. Zeolite's ability to eliminate excess glucose and, as a result, help regulate blood sugar levels makes it a great candidate for treating diabetes. As a side benefit, zeolite reduces nitrate uptake by capturing nitrates in the digestive tract before they can be absorbed. Nitrates, commonly found in processed meats, have been linked to type-II diabetes.

23. How can liquid zeolite counteract the effects of pesticides, dioxins, and other pollutants?

Although zeolite does not eliminate these toxin sources directly, it does provide a safe, non-toxic method of removing toxic heavy metals and thereby mitigating their damaging effects, which include immune suppression and poisoning of the liver's detoxification pathways. Both a healthy liver and an efficient immune system are critical for protecting the body from the carcinogenic effects of pesticides, dioxins, and other toxic chemicals.

24. Can I use zeolite supplementation as part of a nutritional program for hormone balance?

Including zeolite in your nutritional regimen can prove beneficial for hormone support, given its usefulness in reducing levels of known hormone disruptors, such as toxic heavy metals, dioxins and pesticides. For example, many people have very low amounts of Free T3. This is the active thyroid hormone responsible for many necessary functions in the body. This hormone will not be produced in the body if mercury, cadmium, and lead are present due to their inactivation of the 5'-de-iodinase enzyme, which is required for the production of Free T3 from the inactive pro-hormone Free T4.

25. How does zeolite balance the body's pH levels and what health benefits does such balance provide?

It is critical for proper cellular function that the body maintain a healthy pH balance of acid and alkaline levels in the body. A slight alkalinity (pH of 7.35-7.45) is considered optimal for good health. The body regulates blood in several ways. The kidneys and lungs provide mechanisms for pH regulation; the kidneys remove excess hydrogen ions, called protons, in a relatively slow process, and the lungs remove extra CO₂ in a much faster process, often during exercise. The acid-alkaline equilibrium is also regulated by a series of acid-base buffers composed of a weak acid and a salt base. Zeolite's chemical makeup, and its ability to attract excess hydrogen ions based upon the concentration gradient, helps to correct and maintain a healthy body pH balance, which reduces acid reflux symptoms, arthritis, infections, and cancer, and improves overall cellular function.

26. Can zeolite supplementation improve digestion and nutrient absorption?

Zeolite's digestive benefits have been well researched, and zeolite has been used with positive effect to treat the symptoms of diarrhea. In one animal study, zeolite supplementation was able to improve the symptoms of intestinal disease in test subjects. Later human studies confirmed zeolite's

benefit in treating acute diarrhea symptoms and led to the approval of a pharmaceutical drug for this use called *Enterex*.

Zeolite supplementation promotes healthy digestion and encourages nutrient absorption. It's believed the reason for this is related to zeolite's ability to capture ammonium ions during digestion, creating a more friendly and less toxic digestive system that is better able to absorb nutrients during digestion. It may also balance the pH levels of the digestive tract, creating an optimal environment for beneficial microflora in the digestive tract. Also, the binding of toxic heavy metals that compete for the same receptors in the gut provides for increased absorption and assimilation of the nutrient minerals such as calcium, magnesium and iron. The binding of the toxic heavy metals also reduces the damage that leads to "leaky gut syndrome." With a healthy, balanced, digestive system, it is only natural that incidents of diarrhea, flu, and infections are reduced. And since the body is better able to digest, absorb, and assimilate essential nutrients when the intestinal tract is functioning properly, the overall health of the body will improve as well.

27. How can liquid zeolite help those who suffer from chronic allergies?

Some researchers believe that zeolite may also attract allergens and antigens that trigger allergies, capturing them and eliminating them from the body. Zeolite supplementation may offer additional allergy support by reducing occurrences and symptoms of allergies and related conditions, including asthma. The key system involved here is the immune system. The toxic heavy metals, mercury, cadmium, and lead, in particular, adversely affect this system by interfering with metabolic pathways involving the omega fatty acids. The omega-3 fatty acid is involved with anti-inflammatory pathways. The omega-6 and omega-9 fatty acids are involved with pro-inflammatory pathways producing such toxic substances such as histamine and leukotrienes. High levels of these chemicals in the tissues cause asthma, allergic reactions, rheumatoid arthritis, SLE (lupus), and other autoimmune conditions. As the levels of toxic heavy metals decrease in the body, these pathways can be restored to proper function and balance and associated autoimmune conditions will markedly diminish.

28. How can zeolite supplementation help to combat aging?

Both zeolite's ability to reduce toxic overload and its antioxidant properties may also prove beneficial in the fight against aging. Exposure to damaging oxidation and toxins interferes with metabolic functions and cellular repair. Detoxifying the body with a health-promoting supplement like zeolite helps to offset these effects and keeps the body's reparative and regenerative functions operating efficiently, keeping us young and healthy.

29. How does liquid zeolite support healthy immune function?

Zeolite supplementation can influence the health of the immune system in several ways. The most obvious effect zeolite has on immunity is its ability to remove toxins, heavy metals, and allergens from the body. All of these things have been known to negatively affect the effectiveness of the immune system and may seriously compromise overall health. Zeolite is also believed to have nonspecific antiviral properties. By eliminating these potential health threats, zeolite indirectly improves immune function.

But that is not all. A growing body of evidence suggests that zeolite also has immuno-modulatory effects. What does this mean? Basically, the chemical composition of zeolite may actually have nonspecific immuno-stimulating effects. Scientists believe that zeolite may be able to activate large groups of T-cells. In a study on patients being treated for immunodeficiency, six to eight weeks of zeolite supplementation was found to increase the blood counts of certain immune cells.

30. Why do zeolites remove only bad substances from the body?

Studies on zeolite have shown that the compound has a great affinity for attracting heavy metals and other toxic particles. The size, shape, weight, density, and electrical makeup of each toxic heavy metal is specific and binds tightly to the zeolite cavity. Meanwhile, nutrient minerals, like calcium, magnesium, and phosphorus, are larger and lighter. In fact, *liquid zeolite is pre-activated with these healthy mineral ions, so that when the zeolite binds onto a toxic particle, it leaves a healthy nutrient in its place.* This is called *cation exchange*.

31. If zeolites attack foreign particles and metal ions, will they damage dental fillings, artificial joints, or breast implants?

Absolutely not. Liquid zeolite can only remove heavy metals that are in a free solution. Zeolites operate passively; they will not attack foreign particles or pull mercury from fillings, titanium from hip replacements, or silicone from breast implants.

32. Are there any side effects associated with taking zeolite supplements?

Liquid zeolite, the preferred supplement form, is considered 100 percent safe and non-toxic by the FDA. There are no documented side effects associated with using zeolite as a health supplement. Zeolite remains in the body for only five to seven hours, and is considered safe for children, pregnant and nursing mothers, and the sick and elderly. It is, however, recommended that anyone using zeolite remain well-hydrated since the process of removing toxic heavy metal ions from the body can result in slight dehydration. The recommended eight to ten glasses of water per day should suffice in most cases. If you have any concerns, please speak to a health professional.

33. Are there any contraindications for using liquid zeolite with any prescription drugs?

There is no mechanism for interaction of zeolite with pharmaceutical drugs. The exception would be chemotherapy agents, which contain heavy metals such as cis-platinum. In this case, the recommendation would be to stop the zeolite 48 hours prior to chemotherapy and to resume the zeolite 48 hours following chemotherapy. People who are diagnosed with bipolar affective disorder (BAD), or manic depression, are often times prescribed a mineral supplement called lithium. This therapy has been around since the 1940's. The affinity studies show minimal binding attraction for lithium. If a person is concerned, there is a urine test available to follow the lithium levels as well as the blood test that are required every month. Lithium is very toxic with many side effects. Those who are taking lithium would definitely benefit from removing the toxins from the brain, so that they can regain optimal function. Lithium does not fix the brain toxicity problem.

34. I have heard that aluminum in deodorant and makeup is harmful to the body. Why isn't the aluminum in zeolite dangerous?

The aluminum in liquid zeolite is bonded in such a way that the body cannot absorb it; it is completely unavailable for use in the body. Temperatures of more than 900°F would be required to break the metal from its crystalline bond. In fact, the supplement is designed to remove existing aluminum that has accumulated in the body just as it removes other heavy metals.

35. Can zeolite supplementation negatively affect liver or kidney function?

There are no reported problems associated with liquid zeolite supplementation negatively affecting liver or kidney function. In fact, by detoxifying the body, zeolite may actually improve function by making the jobs of the liver and kidneys much easier. By reducing the strain on the organs from dangerous toxins, supplementation with liquid zeolite may lead to a healthier liver and kidneys. The most common source of kidney dysfunction is lead toxicity and with the use of the zeolite, kidney function often times improves.

36. Is zeolite supplementation safe for children?

Our children are exposed to the same toxins as adults, and in some cases, their environment may be more toxic. Because children's immune, neurological, and endocrine systems are actually less developed than the typical adult's, they are more susceptible to these toxins. Not only is liquid zeolite completely safe for children (though they should consume a smaller dose reduced in proportion to their weight), it may prove even more beneficial for children than adults because of their still developing systems.

37. Is zeolite supplementation safe for pregnant or nursing women? .

The FDA considers liquid zeolites safe, and nontoxic for everyone, regardless of age or gender. Since it is also excreted in its entirety, zeolite will not accumulate in the body and should be considered safe for pregnant and nursing women. In fact, a recent Red Cross study found more than 200 toxic compounds, nearly half of them carcinogenic, in the umbilical cord blood of newborn babies. Zeolite supplementation may prove to be necessary for optimal health of the mother and child.

38. How long does zeolite stay in the body? Can zeolite accumulate in the body over time?

Zeolite is eliminated from the body completely and does not accumulate with time. Liquid zeolite has a half-life of five to seven hours, which is the amount of time required for the dosage amount to be reduced by half either through absorption or elimination. It takes five half-lives for all of an agent to be processed out of the body; therefore the range of 25-35 hours is given for total excretion of the zeolite dose.

39. What is the recommended dosage when using zeolite? Can I take too much?

Liquid zeolite supplements are nontoxic, so taking more than the recommended dosage will most likely not do any harm, but it will do no good either. The body will simply eliminate excess zeolite, instead of absorbing and using it. Average dosing is 10-15 drops three or four times daily, taking with vitamin C for maximum absorption. Maximum dose for those who are very sick, or for aggressive detoxification and immuno-modulation, may take up to 40 drops four times a day. Be sure to consume more fluids at the higher dosing of zeolite.

40. How much liquid zeolite is absorbed by the body?

More than half of ingested liquid zeolite is absorbed into the blood. The remaining zeolite is absorbed into the intestinal lining, where it helps protect the body by absorbing gut toxins. Although taking more zeolite than recommended is not toxic, the maximum absorbable level of liquid zeolite is 40 drops at a time, taken with vitamin C diluted in water.

41. Is it better to take zeolite with food or on an empty stomach?

Unlike other detoxification therapies, where the presence of food in the stomach may affect the absorbability or effectiveness of the treatment, liquid zeolite is just as effective whether taken with food or alone. Just be sure to drink the recommended amount of fluid (eight to ten glasses a day) for optimal health while using zeolite supplements.

42. Is liquid zeolite considered a drug or food supplement?

Many natural medicines, such as vitamin C or acidophilus, are considered food supplements even though they improve health. Whether a compound is classified as a drug or food supplement has less to do with its effectiveness or its number of contraindications for use and more to do with the FDA's current classification process. Many traditional health experts do not understand the role nutritional and natural compounds can play in improving health and fighting disease, and they often ignore the fact that most food supplements have far fewer side effects than do prescription drugs. Liquid zeolite is currently considered to be a food supplement, specifically a "bioactive" mineral water. Still, the supplement is patented for use as a cancer drug.

43. Do liquid zeolite supplements require refrigeration?

Since liquid zeolite is a stable mineral solution, it does not require refrigeration before or after opening. However, the bottle should have a use-by date of generally two to three years, similar to that of regular bottled water. After the use-by date, there is the potential for bacterial growth in the solution.

44. What does liquid zeolite taste like?

Liquid zeolite is a tasteless solution added to water, so it is easy to incorporate into any diet, even that of the pickiest eater, the elderly, and the smallest child.

45. I know zeolite is found all over the world. Where is the zeolite used in liquid supplements found?

Because purity is so important when using zeolite for health reasons, sources for liquid zeolite supplements are carefully chosen. The zeolite mines in Texas and Montana, renowned for their exceptionally pure zeolite product, are the primary sources of zeolite used in liquid form.

46. How does liquid zeolite differ from regular zeolite?

Raw zeolite has many uses, but in order to prepare it for use as a nutritional supplement, it undergoes a process to purify it and activate it for optimal effect in the body. Basically, scientists start with top-grade sources. They are heated and purified, and then activated with magnesium, calcium, and phosphorus, among other minerals, so that they are "preloaded" with health-promoting compounds. These compounds are then exchanged with damaging heavy metals and other toxins in the body, so that individuals taking zeolite supplements receive the dual benefit of a reduced toxic load and increased nutrition.

47. If zeolite is so great, why hasn't my doctor heard of it? It seems too good to be true.

This is often the reaction of individuals upon first hearing about zeolite. It is normal to be initially skeptical. For several reasons, U.S. conventional medicine has been and continues to be resistant to natural health products, even those supported by years of scientific data. For instance, despite the stacks of research supporting several antioxidants, traditional medical circles still resist including them in every day patient treatment and recommending them for disease prevention. This bias against safer, more cost-effective alternatives for improving health in favor of expensive prescription drug treatments means that many conventional doctors are unaware of effective complementary and alternative health treatments. Often, grassroots efforts are required to test health-promoting supplements and offer them to the public. It therefore becomes the job of the discerning consumer to be proactive and educate themselves and their health providers about new proven ways to enhance health.



**RAW ZEOLITE CRYSTAL
(clinoptilolite)**

To find out more about Natural Cellular Defense, a new breakthrough in nutrition technology which excels in it's ability to remove heavy metals and toxins from our bodies, go to: <http://www.mywaiora.com/475030> or contact Phillip W. Warren at: phillip_warren@telus.net or go to www.rebprotocol.net and access the information there. Phone and voice mail: (604) 946-4919