"How To Avoid The Biggest Mistake You Can Make When Selecting A Zeolite Product..."
# Table of Contents

Introduction .......................................................................................................................... 3  
Why we have written This Report ....................................................................................... 3  
What is a Zeolite? ................................................................................................................... 3  
Origins of Activated Liquid Zeolite Products ....................................................................... 3  
About Zeolites ....................................................................................................................... 3  
The Critics ............................................................................................................................. 4  
Zeolite Activation .................................................................................................................... 4  
Zeolite And Cancer ................................................................................................................ 4  
Other Chelating Agents and Detoxification Options ............................................................ 4  
  Chelation .............................................................................................................................. 5  
  Colon Cleanse ...................................................................................................................... 5  
  Nutrition ............................................................................................................................... 5  
What Is A Safe Zeolite? .......................................................................................................... 5  
Use of Clinoptilolite for Humans ........................................................................................... 6  
Natural Cellular Defense ....................................................................................................... 6  
Liquid Zeolite Products .......................................................................................................... 6  
  Z-Naturals ........................................................................................................................ 6  
  Liquid Zeolite Company ..................................................................................................... 7  
  Zeolite Enhanced ............................................................................................................. 7  
  Zeo Active 8 ....................................................................................................................... 8  
Testimonials .......................................................................................................................... 8  
Guarantee .............................................................................................................................. 9  
The Activation Process .......................................................................................................... 10  
Clinical Studies ..................................................................................................................... 10  
Conclusion ............................................................................................................................. 11  
References .............................................................................................................................. 13  
  Anticancer and anti-oxidative effects of micronized zeolite clinoptilolite ......................... 13  
  Humic Acid Induces Oxidative DNA Damage, Growth Retardation, and Apoptosis in Human Primary Fibroblasts ................................................................. 13  
Appendix 1. Comparison of Zeolite Suspensions ................................................................ 14  
Download this document here (Adobe pdf file) .................................................................. 14  
  John Gaydon's Test Results Before and After Liquid Zeolite ............................................. 14  
  Tony Perkin’s Test Results Before and After Using Natural Cellular Defense .................. 15  
  Results of Carlene Fuch's Patient with Lead and Cadmium .............................................. 16
Introduction

First we wish to thank you for your interest in ridding your body once and for all of the nasty heavy metals and toxins that left unchecked accelerate aging and lead to a variety of serious health conditions.

Why we have written This Report

The purpose of this report is to discuss a volcanic mineral called clinoptilolite, one of the family of zeolites. This mineral has some very unique properties which make it more than useful as an adjunct to any other supplements you are currently taking. We believe that no matter what else you are doing to maintain or regain health, adding our activated liquid zeolite to your list of supplements will make a profound difference.

What is a Zeolite?

Zeolites are natural volcanic minerals with an unique, complex crystalline structure. It's honeycomb framework of cavities and channels (like cages) works at the cellular level trapping, heavy metals and toxins. In fact, because it is one of the few negatively charged minerals in nature, zeolite molecules act as a magnet drawing toxins to it, capturing them in its cage and removing them from the body.

In the past, Zeolites have been widely used in water and air filtration to remove toxins. They are also used in soil maintenance to purify the soil. Animal feed often has Zeolite added. The Russians even used Zeolite powder at Chernobyl to soak up excess radiation.

Origins of Activated Liquid Zeolite Products

In April 2005, a company named Waaira released a product called Natural Cellular Defense. This single product revolutionised the supplement world, resulting in rapid growth for the company. The reason - many people with serious illnesses heard about the product and had dramatic improvements in their health, often in a few weeks. This resulted in recommendations for the product on a whole series of websites.

Testimonials started to appear on anti-cancer sites with implications that it could help cancer patients. Naturally, this upset the drug companies and others who make millions from the treatment of this disease group.

Pretty soon amongst all the positive comments, a few knockers appeared. There are claims that Zeolites are dangerous and can cause liver and kidney damage, or even lung cancer! Let's address this first.

About Zeolites.

There are 49 naturally occurring Zeolites in nature. They come in three families.

1. The first category includes asbestos. These Zeolites are bad and cause cancer
2. Globular Zeolites are very large and used as anti caking agents
3. Sheathe like Zeolites are thin sheaves and include Cliniptilolite These are used in air and water purifiers and animal feed to counter heavy metals. They have been used throughout Asia in traditional medicine for over 800 years.
The Critics
What these unscrupulous people have done is to take the worst scenario, i.e. asbestos, and
generalise it to all Zeolite products. The ability of clinoptilolite to absorb heavy metals is
indisputable and backed up by many animal studies. So the only way to attack it is from the
safety standpoint. Jonathon Campbell, who sells his own Natural Cancer Treatment, is
leading the charge here. There is absolutely no scientific basis for his criticism!

Zeolite Activation
You will discover in your research something called “Activation” of liquid Zeolite. In its raw
form zeolite is a rock. You can buy it to sprinkle on your garden and it is great for the soil.
For animals they ground it to a small particle size and place it in feed. Zeolite in nature
attracts toxins because it is negatively charged. This is what it does.

Over thousands of years natural Zeolite is full of toxins. They won’t get into your body, but
they mean the product can’t absorb that many more toxins. The Activation process removes
these toxins making the product super absorbable. Read the information on other products
carefully. Only one product is fully activated. Claims that the natural environment where
some Zeolites are mined means activation is unnecessary are simply false. Tests show 5-7
times the toxins unactivated Zeolite products. This is very important!

Zeolite And Cancer
Many are interested in Zeolite for its Cancer Fighting Properties. Originally, the patented
activation process was thought to stop the spread of cancer cells. There are no human trials
by recognized institutions to back this. There are studies in mice showing Zeolite shrinking
tumours. It is well known that toxins can cause cancer, so it is logical that removing them
may help, but we can’t claim this. Anyone that does, while appealing to cancer sufferers,
risk prosecution. They park their websites in places where authorities are powerless to do
anything.

Activated liquid Zeolite does raise pH, important in slowing the spread of disease, and it
does remove toxins. We can make no claims for cancer, but logically, it won’t hurt and it just
might help. There are many stories at http://www.testimonyinfo.com Take a look and judge
for yourself!

Other Chelating Agents and Detoxification Options
There are a number of other ways to remove toxins and heavy metals from the body. None
are as efficient as Natural Cellular Defense.

The main advantage of Zeolites compared to other chelating agents is that they capture
Heavy Metal and Toxic ions at the cellular level and contain them within the Zeolite cage.
This is in contrast to many chelating agents which attach the heavy metal particle to the
outside of the chelating molecule. The Heavy Metal particles can then damage kidney and
liver as they pass through, acting like a file. The second challenge is that these agents also
attract vitamins and minerals, necessary for life. These simply do not fit in the Zeolite cage.
You can tell if you are being offered this type of chelating agent because you will be strongly
advised to increase your vitamin and mineral intake to counter the negative effects.
Chelating agents of this type include DMSA, EDTA, etc.
**Chelation.**

EDTA chelation has been around since world war II to remove lead to which soldiers were exposed during the war. You ingest a chelating agent which attracts positively charged particle to it and then eliminates them. DMSA is a similar treatment for Mercury. The challenge is that these treatments are indiscriminate and attract vital minerals as well as heavy metals, requiring medical supervision and vitamin injections to avoid serious side effects. The other challenge is that the toxins are attached to the outside of the chelating agent, meaning they can do damage to the kidney or liver during elimination. This is something you really don't want to do unless it is absolutely necessary.

**Colon Cleanse.**

There is plenty of literature around to suggest that a good colon cleans will get toxins out of the body. During the course of digestion, toxins make their way to the intestines for elimination. If they are not removed from the body, they are reabsorbed through the gut wall causing secondary toxification. There is a definite benefit of cleaning out the colon. It is considered 24 hours for ingested material to be processed and waste eliminated is reasonable and 2 or more bowel movements a day indicate that you are eliminating waste sufficiently to maintain good health. The challenge with Colon cleanse is that it only takes waste from the gut, and relies on nutritional intake to loosen the toxins and heavy metals from the cells.

**Nutrition.**

Another popular method of detoxification is to flood the body with high level nutrients, such as antioxidants. We flood the body with high potency nutrition and it activates the immune system to discard unwanted toxins and pesticides.

---

**What Is A Safe Zeolite?**

Nevertheless, although Clinoptilolite is harmless, it must be ground down to a very small particle size to be effective. The recognised safe level is 5 microns. Any product whose particles are greater than this can cause damage. Because of this, it is important to look for Zeolite products which have independent safety testing for particle size. Natural Cellular Defense has an average particle size of 0.9 microns.

One common form of Zeolite product being marketed is the powdered form. The Zeolite is mined, ground down to a fine powder and then sold in bags. This is a very cheap product to produce and used in animal feed and agriculture. There are numerous studies indicating positive results with removing heavy metals and balancing vitamin and mineral levels in animals using powdered Zeolite.

When used for humans, there are a couple of challenges with the powder.
Use of Clinoptilolite for Humans

First, you need to make sure that particle size is less than 5 microns. The other challenge is that zeolites naturally absorb heavy metals and toxins. As a result of this, mined Zeolite is already full of contaminants. This can be related to a sponge. When you squeeze the sponge and expel the liquid, it absorbs large quantities of liquid. Once the sponge is removed, this liquid can be expelled into a waste system. If you take a sponge full of liquid, it simply doesn't mop up very much. The same can be said for mined Zeolite. While it does absorb some toxins, because it attracts them while in the ground, the ability to absorb toxins in the body is limited, unless you start eating bucket loads. This is something most people will not want to do, and the less stuff you put in your body the better, no matter how safe it is!

Natural Cellular Defense

This is the world’s first Activated Liquid Zeolite. In the manufacturing process, particles are reduced to less than 1 micron, small enough to get toxins out of the cells of the body. The particles are so small they won't damage the kidneys. The proprietary activation process removes all heavy metals and other toxins from the zeolite cage and replaces them with minerals. These minerals exchange for heavy metals in the body. The process is continually improved as more research comes to hand. The Zeolite is suspended in water to give a pure product. It is like a supersopper compared to a wet rag in terms of Absorption.

With the popularity of Natural Cellular Defense, a new type of Zeolite product has emerged. In fact there are several, but they are similar in many ways. You see, the secret of Natural Cellular Defense is that it is activated by patented processes. Waiora's scientists are continually working on ways to remove all the contaminants from the Zeolite cage, giving it super absorption of toxins and heavy metals.

In the case of Natural Cellular Defense, the company that manufactures it took the trouble to have it independently tested for safety and efficacy. The FDA (Food and Drug Administration) in the USA was happy to certify Zeolite as GRAS (Generally Recognised As Safe) status because it doesn't interfere with other body processes. In Australia, the TGA (Therapeutic Goods Administration) has made no decision on whether it is prepared to approve the product for sale, despite no evidence to the contrary. They have granted permission for people to import it for personal use, so Australians do have access to this important technology. Many other important products are in this situation.

Many other companies manufacturing a form of liquid Zeolite simply grind the powder to a very fine particle size, and mix it with some liquids. There is a lot of misinformation about this and many false claims being made.

Liquid Zeolite Products

Let's look at some of the alternate products. Rik Deitsch, Waiora's Scientific Advisory board head had many of these analysed by an independent testing facility, ENO Laboratories.

Z-Naturals

First, let's look at Z natural, a product which claims to be the same as Waiora's.

Research noted in appendix A. reveals that there are no clinical studies on this product and laboratory analysis demonstrates no discernable levels of Zeolite in the product!

How to avoid the biggest mistake you can make when selecting a Zeolite product
Liquid Zeolite Company

Another cheap product is produced by the liquid Zeolite Company. This is what they promote as being in their product.

“Food grade humic mineral complex, fulvic acid, volcanic Zeolite (clinoptilolite) and an angstrom colloid blend of 72 trace minerals, phyto-nutrients, macro-nutrients & micro-nutrients, "M-Power Water", "Living-water". Our product also goes through several frequency enhancing processes.”

Testing shows that this product has ground up Zeolite with no attempt to clean out toxins. To make it seem better they have added humic acid ( This product sells for as little as $6 a bottle in bulk and they have pictures on their website which resemble suspiciously Natural Cellular Defense). We know that the activation process is expensive, so this product can be dismissed on price alone. They simply couldn't afford to sell it cheaper if they underwent the rigorous activation process Waiora use. Further, we have included a research article that clearly states that humic acid can inhibit wound healing. If you search "humic acid human" on google, you will find a variety of scientific articles suggesting dangers of this substance, and companies selling it who suggest it is wonderful. In any case, the Zeolite in the product would not be activated. You might as well eat buckets of powder!

**Note:** Tony Perkins is a man who had extremely high lead levels. They were so high that his doctor advised him that using EDTA chelation therapy might damage him permanently. He chose to use Natural Cellular Defense and after 3 months had a 6 fold decrease in lead levels.

He then switched to the product from the liquid Zeolite company to save money! After all they said the only difference was the extra humic acid and the price. After 6 months Tony had another hair analysis. It showed **no decrease in heavy metals** with the cheaper product. It was like drinking water at $10 per 30 mls. We now have clear evidence that this product is not activated and has little effect on people (except perhaps placebo). Do not be fooled, independent analysis is essential in deciding whether a product is safe or has any benefit.

**Case Study Shows No Removal Of Heavy Metals With This Product!**

Zeolite Enhanced

There is a web site called cancerfightingstrategies.com which promotes this product. Originally the person who produced this web site marketed Natural Cellular Defense and quoted quite a few cancer testimonials to back his claims. When told not to make cancer claims for the product, he switched brands, but kept the stories which were from people who used Natural Cellular Defense.

The product sold was the one from the Liquid Zeolite Company. Then they claimed some magical frequencies made it even better and finally added DHQ (Dihydroquercetin) which it is believed enhances the effectiveness of vitamin C. We are prohibited from making any cancer claims on our product because there are no double blind studies from reliable
institutions. The product is sold from Alaska and the web site looks like an information site only. We had considerable difficulty getting information on this product.

The question is, “Why would you add vitamins and minerals to a product that is designed to detox the body. Pure water is the only thing that should be added.

The Liquid Zeolite Company product with an additive to make it more attractive.

Zeo Active 8.

This is an Australian product. According to the information on their web site it is available for practitioners only.

"ZeoActiv8™ is available only through your Medical Practitioner with specific dosage directions to suit your personal health needs. If adverse conditions arise discontinue use immediately and consult your prescribing Physician or medical professional."

We have just had the Zeo Active8 tested by an independent Laboratory. While it would be nice to think this product was great, the only advantage it has over powder is that it is micronized to around 3 microns particle size. Particle size ranged from 2.5 to 10 microns. That’s 3 times the particle size of Natural Cellular Defense, so it is much less absorbable. NCD particle size ranged from 0.41 to 5 microns.

Analysis of the Zeolite shows that raw zeolite contains 6.5 times the heavy metals of natural cellular defense while ZeoActiv8 contains 4.37 times the heavy metals. This means there is a much lower capacity for ZeoActiv8 and raw Zeolite to absorb heavy metals while passing through the body.

ZeoActiv8 contains preservatives while NCD has none.

In summary, ZeoActiv8 is probably one of the better Zeolite products. But when compared with Natural Cellular Defense it has only 20% of the absorption and 20% of heavy metals removal capability. Natural Cellular Defense once again proves to be the best Zeolite product available due to its micronisation and activation processes.

ZeoActiv8 Is Raw Micronised Zeolite Not Activated In Any Way

Testimonials.

We have researched the web extensively looking for Zeolite Testimonials. Almost without exception, all of them come as a result of taking Natural Cellular Defense. There are thousands, and we have a few case studies on our web site for you to peruse. Because the product is classified as a supplement, not a drug, we are prohibited from making claims with respect to any disease or cure, so we won't. There are plenty of freely available testimonials from others which back our assertions.

Here is one story for you.

"Since taking Natural Cellular Defense as a Not For Resale Customer, I had a 2/3rds reduction in Barium, lowering of several heavy metals, and my PH went from 6.2 to 7.35. Warts have disappeared, I have more energy and am working out in the gym and building
I am often asked if I take liquid zeolite and of course I do. Here is my experience.

After travelling in India for many years, I contracted a cocktail of parasites including Giardia and amoeba. I spent many years and many doses of the recommended medications to eradicate them. I also tried lots of different practitioners but couldn't get rid of the problem. I was very run down and suffering from fatigue, liver damage and joint aches and pains. I tried many doctors and even went back to India to get treated by the doctors there assuming they would be more familiar with it. By the end, I didn't know whether it was the parasites or the medication causing the liver damage.

I tried the liquid zeolite for myself and finally my energy started to rise and all my symptoms started to go. My liver started to heal. I was so impressed by finally getting results, I became a zeolite distributor.

All my family, including the dog and the cat are on it also. My daughter and son-in-law have used the urine tests and have seen the heavy metals disappear after using the zeolite. My son-in-law had a graphic demonstration of this. He had been painting the front steps and his urine registered cadmium and lead. He started taking the liquid zeolite until his urine was registering no heavy metals after a few weeks.

My 16 year old cat had a growth on his back for many years. I put him on the zeolite and put a few drops on the growth daily. It scabbed up and dropped off. It is now a fraction of its size and I am continuing his treatment.

My dog is 13. She has had arthritis and became extremely ill, so much so, I had to take her into emergency 3 times in one weekend. The vets couldn't find out what was wrong with her and only offered pain relief with narcotics. I put her on the zeolite drops. She is now running around and chasing the ball like a puppy.

The clients in my clinic are also getting great results. If your health problems are caused by heavy metals or other toxins, acidity or lowered immunity, this product can be life changing.

Deborah Howlett -
BA, Dip Ad Acupuncture, Enar/Scenar Therapist

Guarantee

We do offer a 30 day iron clad guarantee that the product is totally safe. If you are not satisfied, send it back and get your money refunded! You can't be fairer than that.
The Activation Process.
While this is proprietary, the difference with Natural Cellular Defense is that by a complex process, impurities are removed from the Zeolite cage. Here, again are Rik Deitsch's comments.

"Our proprietary activation process removes nearly all of the extraneous metals and empties out the Zeolite cage - therefore removing any toxins that were found with the zeolite and 'activating' the molecule to be at its most effective. Understand again that the Zeolite molecule is, for all practical purposes, indestructible. Heat up to 900 degrees Fahrenheit will not crack the molecule and it can be frozen in solution and defrosted without any change in activity. It is also amphoteric – meaning that it exists just as well in an acidic or a basic environment. We activate the Zeolite in a very weak acid under high temperature conditions. This does not break the zeolite down; it simply forces the evacuation of stored toxins in the Zeolite cage.

The only thing left in solution after activation is the micronized Zeolite and some larger metals that remain in solution. These are: calcium, sodium, magnesium and potassium. These healthy metals migrate back into the Zeolite and help stabilize the molecule. After ingestion, they easily undergo cationic exchange with metals that are higher in the affinity scale of the Zeolite (i.e. Mercury, Lead, Cadmium, etc.). Without undergoing this process, other Zeolite products may contain toxins and heavy metals as part of the Zeolite cage. We have completed thirteen clinical trials on the NCD with four more studies underway. These will all be published eventually, which should quiet our detractors. Although none of our studies have been published yet, I have presented our clinical trial with NCD in a population of West Virginia coal miners at several scientific conferences. The coordinators of these meetings review lecture submissions to ensure that the clinical information is sound and relevant. The data had been reviewed for admission at these conferences and was well-accepted as adequate for submission. When all is said and done, the NCD is unique, safe and highly effective – and this has been proven in numerous clinical studies".

Clinical Studies.
Well, Waiora have completed 15 clinical trails using NCD. If you are still interested in another Zeolite product, ask them what clinical trials they are doing and what results are they getting?

When you undertake a Clinical Trial, it has no real value in the Scientific Community until published in a recognised journal. This can take some time. Until the process happens, we cannot obtain the actual data from the study, however we have some feedback on some of the trials. This information is accurate, although at this time can't be verified. The proof is in the many personal stories and Scientific validation of our product.

Here are official studies authorised by Waiora.

Natural Cellular Defense therapy in healthy individuals without chronic exposure to heavy metal toxins.
A short-term (7-day) trial in five individuals to evaluate changes in urinary excretion of heavy metals. Urinary excretion was measured with Atomic Absorption Spectroscopy (AAS). Four out of five individuals showed increase in heavy metal excretion.
Natural Cellular Defense therapy in healthy individuals and short-term "non-responders" without chronic exposure to heavy metal toxins
An intermediate-term (30-day) trial in twenty (20) individuals to evaluate changes in urinary excretion of heavy metals. Urinary excretion was measured with Atomic Absorption Spectroscopy (AAS). **Participants demonstrated an 8-12 fold increase in heavy metal excretion. 100% had raised levels of heavy metals excreted through their urine.**

Natural Cellular Defense therapy in otherwise healthy individuals with chronic, employment-related exposure to heavy metal toxins (WV Coal Miners)
A long-term (84-day), blinded, clinical trial in fifty (50) individuals to evaluate changes in urinary excretion of heavy metals and determine longevity of the effect. Urinary excretion was measured with Atomic Absorption Spectroscopy (AAS). Additionally, hair and saliva was collected at the beginning and the end of the trial and measured for heavy metal content. **Participants continued to excrete heavy metals throughout the trial at a rate of up to 12 times normal. All had more energy, better sleep patterns and greater mental acuity.**

Electrolyte levels with the use of Natural Cellular Defense
A trial to evaluate changes in vital serum electrolytes in healthy individuals following 30-day Natural Cellular Defense therapy.

Exercise recovery with Natural Cellular Defense
A trial to evaluate the effect of Natural Cellular Defense therapy on post-workout recovery-time in competitive athletes vs. non-competitive participants. This trial consisted of 300 athletes, both elite and weekend warriors. **80% of participants noted more energy, less soreness, and faster recovery after exercise.**

PH balancing with Natural Cellular Defense
A trial to evaluate the effect of short- vs long-term Natural Cellular Defense therapy on serum and salivary pH in healthy and compromised individuals.

There are other non Waiora endorsed studies in the areas of autism, cancer, chronic fatigue, etc.

A series of animal studies backs up claims of Zeolite's ability to absorb a wide range of toxins and heavy metals, balance PH, and normalise vitamin and mineral levels. Some are included here.

**Conclusion.**
The title of this report is "How To Avoid The Biggest Mistake You Can Make When Selecting A Zeolite Product..."

We believe that in reading the evidence we have presented, you will conclude, as we have, that there is overwhelming evidence that regardless of price, the biggest mistake you could make is to purchase a Zeolite product other than Natural Cellular Defense!

It really is unfortunate that unscrupulous and clever people are offering inferior products, often denying the very benefits that people like yourself are seeking.

How to avoid the biggest mistake you can make when selecting a Zeolite product
How to avoid the biggest mistake you can make when selecting a Zeolite product
Anticancer and anti-oxidative effects of micronized zeolite clinoptilolite.
Ruder Boskovic Institute, Division of Molecular Medicine, Bijenicka 54, HR-10000 Zagreb, Croatia.

BACKGROUND: Treatment of cancer-bearing mice and dogs with micronized zeolite clinoptilolite (MZ) led to improvement of the overall health status, prolongation of life span and decrease of tumor size in some cases. It also reduced lipid peroxidation in the liver of mice. MATERIALS AND METHODS: The experiments were performed on various tumor cell cultures and tumor-bearing animals. Immunohistochemistry was used to analyze if MZ could interfere with Doxorubicin-induced lipid peroxidation and consequential production of 4-hydroxynonenal (HNE). RESULTS: MZ reduced the metabolic rate of cancer cells and increased binding of HNE to albumin in vitro. It selectively reduced generation of HNE in vivo in tumor stroma after Doxorubicin treatment leaving onset of lipid peroxidation intact in malignant cells. Combined treatment with Doxorubicin and MZ resulted in strong reduction of the pulmonary metastasis count increasing anticancer effects of Doxorubicin.

CONCLUSION: Interference of MZ with lipid peroxidation might explain some of the beneficial effects of this particular zeolite in combined cancer therapy.

PMID: 12820427 [PubMed - indexed for MEDLINE]

Humic Acid Induces Oxidative DNA Damage, Growth Retardation, and Apoptosis in Human Primary Fibroblasts
Mei-Ling Cheng*, Hung-Yao Ho†, Yi-Wen Huang*, Fung-Jou Lu‡ and Daniel Tsun-Yee Chiu*,†

* Graduate Institute of Medical Biotechnology and School of Medical Technology, Chang Gung University, Kwei-san, Tao-yuan, Taiwan;
† Ronald O. Perelman Department of Dermatology, New York University School of Medicine, New York, New York 10016; and
‡ Department of Biochemistry and Internal Medicine, College of Medicine, National Taiwan University, Taipei, Taiwan

Humic acid (HA) has been implicated as an etiological factor of Blackfoot disease endemic in the southwest coast of Taiwan. Dysfunction of endothelial cells and vasculopathy have been proposed to explain the onset of ulcerous changes at extremities. However, little is known about the effect of HA on activities of cells in these nonhealing wounds. In the present study, we demonstrate that HA adversely affects the growth properties of fibroblasts, one of the key players in wound repair. HA treatment caused growth arrest and apoptosis in human foreskin fibroblasts (HFF). This was accompanied by a significant increase in the level of 8-hydroxy-2' -deoxyguanosine (8-OHdG) in cellular DNA. The increased fluorescence in dichlorofluorescin (H2DCF)-stained and HA-treated cells suggests the involvement of reactive oxygen species (ROS) in HA-induced biological effects. Conversely, vitamin E pretreatment, which significantly reduced the 8-OHdG formation in HA-treated cells, alleviated the growth-inhibitory and apoptosis-inducing effects of HA. These results indicate that HA initiates oxidative damages to fibroblasts, and leads to their dwindling growth potential and survival. The present study suggests that HA-induced growth retardation and apoptosis of fibroblasts may play a role in the pathogenesis of Blackfoot disease.
### Appendix 1. Comparison of Zeolite Suspensions

<table>
<thead>
<tr>
<th>Product</th>
<th>Natural Cellular Defense</th>
<th>Spirit of Sunshine ZNatural</th>
<th>Trilogy Essentials ZNatural</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Particle Size</strong></td>
<td>Over 95% of cages ≤ 5 microns</td>
<td>No detectable particles</td>
<td>No detectable particles</td>
</tr>
<tr>
<td><strong>Plasma Concentration</strong></td>
<td>Absorbed into the bloodstream. 1.03 picograms/dL</td>
<td>No zeolite detected</td>
<td>No zeolite detected</td>
</tr>
<tr>
<td><strong>Elemental Analysis</strong></td>
<td>Si, Al, Mg, Ca, K</td>
<td>Si, Al, Mg, Ca, Fe</td>
<td>K, Al, Si, Mg, Na</td>
</tr>
<tr>
<td><strong>Contamination</strong></td>
<td>Below reporting limits for heavy metals</td>
<td>Sb, As, Pb</td>
<td>Very low levels of Pb and Ni</td>
</tr>
<tr>
<td><strong>Micro-Analysis</strong></td>
<td>No bacterial or fungal growth</td>
<td>Bacterial growth and fungal growth detected</td>
<td>No bacterial or fungal growth</td>
</tr>
<tr>
<td><strong>Powder Diffraction Analysis</strong></td>
<td>Conclusively identified as &quot;Clinoptilolite&quot;</td>
<td>No particles to analyze</td>
<td>No particles to analyze</td>
</tr>
<tr>
<td><strong>Active Surface Area</strong></td>
<td>Highest ratio of surface area (lgOft2)</td>
<td>Very little available surface area</td>
<td>Very little available surface area</td>
</tr>
<tr>
<td><strong>Clinical Research</strong></td>
<td>Subject of more than 14 clinical studies</td>
<td>No clinical studies</td>
<td>No clinical studies</td>
</tr>
</tbody>
</table>

**Report of Analysis**

Spirit of Sunshine (SOS) ZNatural Trilogy Essentials (TE) ZNatural
Natural Cellular Defense (NCD)

2 bottles 2 bottles 2 bottles

This study was undertaken to compare and contrast 3 detoxification supplement products, NCD, SOS and TE. Analyses conducted were particle size analysis, elemental analysis, powder diffraction analysis, measurement of serum concentration of product after ingestion and trace metal analysis by Atomic Absorption Spectroscopy (AAS) and Inductively Coupled Plasma Mass Spectroscopy (ICP-MS). Microbial analysis was conducted on the products to evaluate presence of contaminants. Data is compiled from several laboratory sources - Lubrizol Advanced Materials, Inc., Watson Analytical Services, LLC, Microbac Laboratories, Inc., and AnalytiKem Services, Inc.

Comparison of ZeoActiv8 and Natural Cellular Defense.

Download this document here (Adobe pdf file)
Appendix 2 Hair Analysis Results

John Gaydon's Test Results Before and After Liquid Zeolite

John Gaydon here. Well finally, I have had my 6 month Hair analysis test done after taking liquid Zeolite. In truth I took the product on and off over the period of time, usually 10 drops a day after the first month.

Follow Up test results show everything except molybdenum in the normal range. The tests prove conclusively that long term use of Liquid Zeolite has maintained nutrition at normal levels, while eliminating heavy metals and other toxins. Many people have commented that I look better in recent months. Now I know why! I can now unreservedly recommend Liquid Zeolite to anyone wishing to maintain youth and good health.

Here is a summary of the results.

Let's start with Toxins and Heavy Metals. Unfortunately, I didn't have high levels to start with.

<table>
<thead>
<tr>
<th>Element</th>
<th>July 2006</th>
<th>January 2007</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>0.10</td>
<td>0.006</td>
<td>40%</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.008</td>
<td>0.004</td>
<td>50%</td>
</tr>
<tr>
<td>Aluminium</td>
<td>0.4</td>
<td>0.3</td>
<td>25%</td>
</tr>
<tr>
<td>Barium</td>
<td>0.61</td>
<td>0.23</td>
<td>62%</td>
</tr>
<tr>
<td>Vanadium</td>
<td>0.008</td>
<td>0.004</td>
<td>50%</td>
</tr>
<tr>
<td>Strontium</td>
<td>0.23</td>
<td>0.07</td>
<td>70%</td>
</tr>
</tbody>
</table>

Nutritional Elements

All elements except Molybdenum are now in the normal range. Previously Iron and copper levels were also low.

Significant Ratios.

All of these are now in the normal range. Preciously the Sodium/Magnesium ratio was low.

Toxic Ratios.

All are in the acceptable range. Previously Iron/Mercury was below average and Iron/Lead ratio marginal.

Metabolism has changed from slow to fast.

Conclusions by Laboratory.

The reduction in Barium indicates less chance of heart problems. Many of the changes are indicative of heavy metal elimination.

My conclusion. Use of Liquid Zeolite has balanced out my nutritional levels so that the only area of concern in the entire analysis now is low Molybdenum!

How to avoid the biggest mistake you can make when selecting a Zeolite product...
Tony Perkin's Test Results Before and After Using Natural Cellular Defense

Here is a summary of the results. You can view the actual before and after results by clicking on the report pages.

Let's start with **Toxins and Heavy Metals**. Notice the difference in lead levels. The Zeolite has a high affinity for lead. This means that while it is chelating lead, it will not have a great effect on other toxins until lead levels stabilise.

<table>
<thead>
<tr>
<th>Element</th>
<th>Oct 2006</th>
<th>May 2007</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>0.26</td>
<td>0.27</td>
<td>0</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.003</td>
<td>0.003</td>
<td>0</td>
</tr>
<tr>
<td>Aluminium</td>
<td>0.9</td>
<td>0.7</td>
<td>22%</td>
</tr>
<tr>
<td>Lead*</td>
<td>1.1</td>
<td>0.2</td>
<td>82%</td>
</tr>
<tr>
<td>Nickel</td>
<td>0.26</td>
<td>0.17</td>
<td>35%</td>
</tr>
<tr>
<td>Strontium</td>
<td>0.32</td>
<td>0.17</td>
<td>47%</td>
</tr>
</tbody>
</table>

* Lead has a high affinity for Zeolite. It is removed first. Plus values mean the amount increased!

Tony Perkin's Test Results Before and After Using The Liquid Zeolite Company Product at 60 drops a day for 6 months.

<table>
<thead>
<tr>
<th>May 2007</th>
<th>November 2007 on Liquid Zeolite Product</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.27</td>
<td>0.32</td>
<td>+18.5%</td>
</tr>
<tr>
<td>0.003</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>0.7</td>
<td>0.6</td>
<td>14%</td>
</tr>
<tr>
<td>0.2</td>
<td>0.20</td>
<td>0%</td>
</tr>
<tr>
<td>0.17</td>
<td>0.37</td>
<td>+117%</td>
</tr>
<tr>
<td>0.17</td>
<td>0.21</td>
<td>+24%</td>
</tr>
</tbody>
</table>

Tony sent us a third Hair Analysis after 6 months on the Liquid Zeolite Company Product. This showed **no further improvement** after 6 months at double the rate he was taking our Activated Liquid Zeolite! There was even an **increase in Arsenic, Nickel and Strontium**.
Results of Carlene Fuch's Patient with Lead and Cadmium

Let's start with **Toxins and Heavy Metals**. 

<table>
<thead>
<tr>
<th>Element</th>
<th>February 2007</th>
<th>June 2007</th>
<th>%Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>0.18</td>
<td>0.013</td>
<td>28%</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.040</td>
<td>0.021</td>
<td>48%</td>
</tr>
<tr>
<td>Lead</td>
<td>0.090</td>
<td>0.040</td>
<td>56%</td>
</tr>
<tr>
<td>Mercury*</td>
<td>0.17</td>
<td>0.17</td>
<td>0</td>
</tr>
</tbody>
</table>

Note significant reductions of Arsenic, Lead and Cadmium

* Mercury reduces after lead and Cadmium as the Zeolite has a higher affinity for these heavy metals

Carlene's Comments
These changes occurred after 4 months of taking NCD at dose of 10 drops x 3 daily.