



HMD FAQ's

How do I know that HMD™ actually works?

HMD™ is the only natural, patent-pending, toxic metal chelator in the world to be backed by a 3-year, double-blind, placebo controlled study with 350 people working in a metal foundry. There were many trials conducted over this 3-year period that shows conclusively that HMD™ works effectively at eliminating all metals including Aluminium, Antimony, Arsenic, Beryllium, Cadmium, Lead, Mercury, Nickel, Thallium and Uranium without removing the good, essential minerals from the body.

This research has been published in a peer-reviewed journal of Biological Medicine called Explore. It is available in our BeeWell Links section under Natural Cures.

How can I tell what toxic metals I have in my body?

This is a rather complex topic, but certainly there is no conclusive way of finding the total load of metals in the body as this would mean incinerating the body and measuring the metal content of all the ash - rather impracticable!

TISSUE HAIR MINERAL ANALYSIS

There are certain tests on the market that can give an indication of the amount of metals in the body. First, there is the Tissue Hair Mineral Analysis which measures the amount of metals in the hair as the body tends to push out the body to more inert tissues such as the hair and the nails in order to prevent these metals doing damage in the body. About 5cm or 2 inches of hair is snipped from the back of the head - you will require about 2 tablespoons of hair. This represents about 3 months growth which means that the test will show which metals have been stored in the hair over the last 3 months. This will only happen if there are metals in the blood during the last 3 months that have been stored in the hair - if no metals have been mobile as they are all stored in the body tissues and organs, then it is possible that the hair mineral analysis will not show any metals. This does not mean that there are no metals in the body, only that they are not being mobilized to be stored in the inert tissues of the hair.

PRE-POST URINE PROVOCATION TEST

A more thorough test that can determine whether toxic metals are stored in the body tissues and organs is the pre-post provocation test using urine. What this test does is take a baseline urine sample, also known as a pre-sample usually over a 6- or 24-hour collection period. After the pre-sample is collected then a provocation agent is used to push the metals out of the tissues and organs into the blood and through the kidneys where they are measured in the urine. Provocation agents will depend on what type of metals you have been exposed to, as well as your doctor's preference, so this must be discussed with your health practitioner. Once the provocation agent has been taken, then urine is collected in a container for 6 or 24-hours, depending on your practitioner's instructions. A sample of the pre- and post-urine is sent to an analytical laboratory that specializes in this type of testing using analytical instruments called spectrometers. If the body has metals stored in the tissues and organs, then we would expect to see a percentage increase of metals in the post-urine sample compared to the pre-urine sample. The amount of metals eliminated would also be an indicator as to how toxic the person is compared to reference ranges, even though the ideal "normal" range should be zero as these toxic metals cause many health problems in the body.

This is a test that can only be conducted by a qualified health practitioner.

PRE-POST FAECES PROVOCATION TEST

As metals sometimes are eliminated through the urine and faeces, there are certain practitioners that will demand both urine and faeces provocation tests. The faeces test is similar in principle to the urine test described above - a pre-sample is collected, the provocation agent is then taken and a post-sample is taken usually 48 hours later due to the slower transit time. If the body has metals stored in the body tissues and organs, then we would expect to see a percentage increase of metals in the post-faeces sample compared to the pre-faeces sample.

This test can only be administered by your health practitioner.

How do I know if toxic metals are being eliminated by my body while using the HMD™?

This is a very good question, but one that is also difficult to answer! As there is no practical way of measuring the TOTAL levels of toxic metals in the body, then consequently there are no absolute ways of determining how many metals have actually been eliminated in a 3-6 month period of time. The only thing that we can measure is the amount of metals being eliminated in any one short period of time - this is what we do with the pre-post provocation test using urine and faeces, as described above. If there are metals still being eliminated with this test, then this is an indication that metals are still present in the body and you should continue to take the toxic metal chelator. HMD™ is so gentle that it can be used for long periods of time ? the inventor of the product has been taking it every day for the last 18 months with no side effects whatsoever!

How long should I stay on the HMD™ for?

This question has more or less been answered above, but to recap briefly; if your pre-post provocation test has shown that you are still eliminating metals in the post-urine and faeces samples, then this means that you still have these stored in the body. Taking the HMD™ for a further few months would then be indicated - it really does take a long time to remove metals from the body, and even then it is literally impossible to completely eliminate them as we are constantly being exposed to them through the air that we breathe, the food that we eat, the amalgam fillings in our mouths, as well as other sources. This is one very good reason to take HMD™ on and off in order to reduce this load on the body.

How do people get exposed to toxic or heavy metals?

There are many sources of toxic metals in the world that we live in. Here are some examples, even though this is not a conclusive list:

- Mercury amalgams in the mouth
- Thimerosal, a mercury preservative in some vaccinations given to young babies
- Fish which can be toxic in mercury as well as other metals
- Chicken - in some cases chickens are toxic in arsenic as this is intentionally given to them as a growth stimulator
- Vegetables - if the vegetables are grown near major roads then they could have accumulated lead and other petrochemicals from vehicle pollution

Does HMD™ remove other good minerals and trace elements?

In some of the testing that was done it showed that this was not the case. In fact, due to the natural minerals and trace elements that some of HMD's™ ingredients contain, such as the Cilantro and the Chlorella Growth Factor, we have reason to believe that it is actually feeding the body with these good minerals.

Is HMD™ effective at removing mercury?

In the test trials that have been done, the answer is "yes". There was about a 448% increase in mercury in the post-urine sample, compared to the pre-urine sample.

Does HMD™ have a nice taste, or is it bitter?

Tastes seem to differ from one person to another, but certainly HMD™ is not bitter, neither is it sweet. As it contains algae and vegetables it seems to have a veggy taste which many find quite pleasant.

Does HMD™ eliminate most metals through the urine or the faeces?

All the trials that were conducted showed that HMD™ prefers the urinary route - many more metals are eliminated in the urine compared to the faeces. This is probably an advantage as metals are prevented from being reabsorbed in the gut.

Does HMD™ have any side effects?

In the final trial using HMD™ on 84 people, only a couple reported minor headaches that lasted a couple of hours. Otherwise, no-one else reported any other side-effects whatsoever, which is in direct contrast to what people report when taking synthetic drug chelators.

Is HMD™ expensive?

The simple answer is "no", it is actually one of the cheapest natural heavy metal chelator in the market, even though it has undergone research that cost in excess of \$1 million. We believe that HMD™ should be amenable to all people all over the globe and can be taken like a food supplement over prolonged periods of time without costing more than the daily cost of an ice-cream! Comparing other natural chelators on the market, a 4 oz bottle of HMD™ lasting one month for adults and up to 3 months for children, sells for \$60 or the equivalent currency, while a month's equivalent of NDF sells for \$79.95 for a 1 oz. bottle, Metal-Free is \$129.00 and Detoxamin suppositories are \$269 for a months supply.

**Why does the patient need to take 40 drops at breakfast, 50 drops at lunchtime and 60 drops at dinner?
Why not take the same dosage throughout the day?**

During the research trials it was found that HMD™ has a dose-dependent relationship. What that means is that it will eliminate certain metals at 40 drops, others at 50 drops and others at 60 drops. So, in order to get the full benefit of eliminating all metals in a 24-hour period, the dosage needed to be rotated between 40 and 60 drops at different times of the day. This may actually be an advantage as the liver and kidneys that have to detoxify these metals will be less burdened.

How does HMD™ compare to other drug chelators?

We don't really know as research in this field has not been conducted to compare. We believe, however, that HMD™ may not eliminate the same degree of metals as these drug chelators, but it certainly does remove considerable amounts of most metals such as arsenic, antimony, aluminium, cadmium, lead, mercury, thallium, uranium and others.

If the blood, urine and faeces tests show that the person is suffering from an acute toxicity of toxic metals where the levels are extremely high, then it would be wiser to use a strong drug chelator in order to reduce the levels quickly. It is possible, however, to combine the HMD™ with these drug chelators in order to give an element of protection to the liver and kidneys, the red blood cells, the immune system and other body organs. This has been demonstrated in other research studies that have been conducted on two of the natural ingredients of HMD™, namely Cilantro (*Coriandrum sativum*) and the Chlorella Growth Factor (CGF).

Does HMD™ chelate iron and copper?

In the research trials we did not find this to be the case, even though in some of the people that worked in the metal foundry who had extremely high levels of copper and iron, which were part of the by-products of the smelting process, there were considerable amounts of copper and iron eliminated in the post-urine and faeces samples compared to the pre-samples. It may be that the HMD™ is acting as an adaptagen and balancing the body's essential minerals according to need.

Can HMD™ be taken PREVENTATIVELY even though there are no overt symptoms?

Absolutely, and it is HIGHLY RECOMMENDED as it would be true to say that everyone living on this planet is affected by heavy metals in some way or other. It's in the air we breath, the water we drink, the food we eat such as fish, in our teeth (amalgams), in vaccinations (thimerosal and aluminium) given to our young ones, mother's milk, in various household furniture and bedding that we use every day, etc., etc.

This is one excellent reason why it is important to take a heavy metal chelator that can eliminate these heavy metals that are the underlying cause of many chronic diseases. It would be possible to take a variety of "drug" chelators that must be given by a medical doctor, but this would mean expensive visits to the doctor and the possibility of having adverse side-effects as these drugs are generally quite aggressive and all have known side effects. It is much wiser to take a "gentle chelator" such as HMD™ that has been proven to eliminate metals without any side effects. Use it daily for a few months as a preventative; it is a wise health insurance and investment that will keep your health optimised and protect you from all sorts of chronic, degenerative diseases.

Does HMD™ have a Certificate Of Analysis for microbes etc?

Yes, there are Certificate of Analyses of all the raw materials used. Indeed, one of the microbial tests showed that there were high numbers of Lactobacillus colonies, a very beneficial bacterium present in the HMD™, probably being maintained by the rich nucleopeptide nutrients present in the HMD™.

Are your manufacturers GMP certified?

Yes, most certainly.

What's the storage and shelf life of HMD™?

It has been tested now for 24 months and the product is still intact and active. It is predicted that the shelf life should be in excess of 4-5 years, as is the case with most herbal remedies.

Who should NOT take HMD™?

Pregnant women and possibly epileptics, as well as people who have just had a major operation. However, these people should always seek the advice of their health practitioner who would have the history of the patient and can therefore make more bespoke decisions as opposed to general guidelines.

What's the "healing crisis" when taking HMD™?

As when taking any type of heavy metal chelator, or undergoing a detoxification protocol to clean the body and organs, it is possible that the patient will have certain "detox" symptoms such as headaches, dizziness, feelings of malaise, tiredness, "brain fog", difficulty concentrating, aches and pains in muscles and joints. All these symptoms are transitory and usually do not last more than about 12 hours - they are all due to heavy metals and toxins being released from the tissues and organs and eliminated from the body. It is important to drink at least 10 glasses of mineral water while taking the HMD™ to help flush the metals out of the body, mainly through the kidneys. Taking DRAINAGE REMEDIES would also be wise as these help "open-up" and make more efficient the detoxification pathways of the liver and kidneys. Obviously if symptoms persist for days then you should consult your health practitioner.

Generally, during the hundreds of people that took part in the HMD™ trials, no major side effects were recorded, apart from two people that complained of a minor, transitory headache. Kidney, heart, liver and electrolyte blood tests showed that there were no pathological parameters during the provocation phase.

Moreover, Heart Rate Variability Testing (HRV), a measure of the functioning of all the physiological systems of the body, showed a significant increase in 40% of the people tested in only 48 hours.

What's the mechanism involved in the heavy metal removal?

Definitive, empirical research has not yet been undertaken to determine the exact mode of action of HMD™. However, based on research of similar products such as Chlorella Growth Factor, which is a neuropeptide, it is possible that the peptides in HMD™ bind to several receptor sites on the metal molecule creating a strong irreversible bond with little chance of competition from other competitor molecules - this means less reabsorption of the metal by the body.

Peptides really stick to metals with an order of magnitude far greater than their synthetic chelating counterparts. This means that the metals are more likely to be eliminated by the body as opposed to being reabsorbed. The research that has been conducted on HMD™ to date has clearly shown that it has a natural affinity for eliminating metals through the urinary tract, as opposed to the biliary tract. This again will lessen the likelihood of metals being reabsorbed in the gut.

It is freely absorbed by the oral mucosa and it is postulated that it will also cross the blood-brain barrier, but more work is required to confirm this hypothesis.

What's the excretion route for the eliminated heavy metals when using HMD™?

As mentioned above, the preferred route of excretion is the urinary route. If we compare the top table 2 showing the degree of elimination in the urine, with the bottom table 3 for faeces, we can clearly see that the preferred route of elimination is the urinary route, which has obvious advantages in preventing the possible re-absorption of metals back into the body.

What mechanisms do heavy metals use in the body for causing diseases and how do they damage the body?

Heavy metals such as mercury, cadmium, lead, and tin affect chemical synaptic transmission in the brain and the peripheral and central nervous system. They also have been found to disrupt brain and cellular calcium levels that significantly affect many body functions: such as:

- (a) calcium levels in the brain affecting cognitive development and degenerative CNS diseases
- (b) calcium-dependent neurotransmitter release which results in depressed levels of serotonin, norepinephrine, and acetylcholine. These are related to mood and motivation.
- (c) cellular calcium-sodium ATP pump processes affecting cellular nutrition and energy production processes.
- (d) calcium levels in bones causing skeletal osteodystery.

Toxic metals have also been found to affect cellular transfer and levels of other important minerals and nutrients that have significant neurological and health effects such as magnesium, lithium, zinc, iron, Vitamins B-6 & B1-12. Based on thousands of hair tests, at least 20% of Americans have been shown to be deficient in magnesium and lithium, with zinc deficiencies also common. The resulting deficiency of such essential nutrients has been shown to increase toxic metal neurological damage.

Studies have also found heavy metals to deplete glutathione and protein-bound sulfhydryl (SH) groups, resulting in the inhibition of SH-containing enzymes and the production of free radicals such as superoxide ion, hydrogen peroxide, and hydroxyl radical. This has been found to be a major factor in neurological and immune damage

caused by the heavy metals, including damage to mitochondria and DNA, as well as chronic autoimmune conditions and diseases.

Attention deficit hyperactivity disorder (ADHD), impulsivity, and inability to inhibit inappropriate responding have all been associated with high lead levels. High aluminium levels are related to encephalopathies and dementia. Some individuals have been found to be more sensitive to toxic metals depending on genetic sensitivity and past exposure to toxic substances. Nickel exposure is common and nickel exposure has been found to be significantly related to mortality in animal studies. Large numbers of people affected by allergic conditions such as eczema and psoriasis vulgaris and serious autoimmune conditions such as lupus and CFS have also been found to have high levels of nickel in their body.

The endocrine system organs such as the pituitary gland, thyroid and hypothalamus can be affected by heavy metals such as mercury which can result in developmental delays such as learning and behavioural disabilities, mental retardation and autism. Other more subtle neurological effects can be seen such as small decreases in IQ, attention span, and connections to delinquency and violence, which can have potentially serious consequences for society. The incidence of neurological conditions in children such as autism has increased over 200% in the USA in the last decade, with a 600% increase in the US - mercury has been found to be a factor in most of those tested.

Recently, Dr. Stearns and her team at the Northern Arizona University, USA, are the first to show that uranium could be chemically genotoxic and mutagenic through the formation of strand breaks and covalent U-DNA adducts.

How do heavy metals cause Cardiovascular Disorders and Central Nervous System problems?

Let's take CNS problems and neuropathology first. There are a number of mechanistic bases for metal neurotoxicity such as:

- * Disturbances of macromolecular synthesis and metabolism, such as those of protein and nucleic acids
- * Disturbance of Ca²⁺ homeostasis
- * Oxidative injury
- * Aberrant protein phosphorylation
- * Some metals such as lead will affect the integrity of the blood-brain-barrier (bbb) leading in changes to astrocyte functioning.

There is a wide variety of neuropathologies induced by metals:

- * Generalized neuronal degeneration and necrosis in the cerebral gray cerebellar cortex and brainstem nuclei
- * Generalized encephalopathy of the CNS
- * Edematous changes in the meninges, corpus collosum and brain matter
- * Vascular and glial proliferations

Effects of Metals on the Hematopoietic System and Heme Metabolism

The hematopoietic system is a complex organ comprising the bone marrow, spleen, lymph nodes, and reticuloendothelial tissues, as well as the three major groups of formed elements of blood consisting of erythrocytes, leukocytes and platelets.

Heavy metals can cause pancytopenia through impairment of bone marrow function. Anemia, leucopenia, prominent basophilic stippling and depression of bone marrow erythropoiesis are also common. Several metals are also known to have direct hemolytic effects.

All eight steps of the heme biosynthetic pathway are catalyzed by enzymes which require functional sulfhydryl (-SH) groups for optimal catalytic activity, either as part of the active site configuration or to maintain their structural integrity. Since most metals have a strong affinity for nucleophilic ligands, especially thiols, each step of the heme biosynthetic pathway is theoretically susceptible to direct inhibition as a result of metal-mercaptide bond formation with functional SH groups.

What are the indications that HMD™ is actually working once you have taken it?

This really depends on the degree of heavy metal toxicity as well as other health problems that may be present. Generally, one is expected to have an increase in well-being after taking it for at least 3 months - more energy, stamina, better skin condition, less headaches and better cognitive functioning. It encourages the rejuvenation of the body's own DNA/RNA.

HMD™ DOSAGE GUIDELINES

The research data with 350 people clearly showed that there was a dose-dependent relationship. This means that a certain dosage was eliminating certain metals, while a different dosage was eliminating other metals. However, to simplify the dosage schedule, it is best to take the HMD™ in the following way:

50 drops x 3 times daily

Take a little BEFORE meals in a glass of water or fruit juice. Make certain that you are drinking at least 8-10 glasses of mineral water daily and more if you are living in a hot climate.

CHILDREN

It is considered safe for children to take HMD™ with no side-effects. The following dosages by weight are recommended, but these can be adjusted according to your health practitioner's advice. It is highly recommended with children that you begin with only one drop of the HMD™ before food and watch for any reactions. Some children are very sensitive to certain herbs or may have compromised detoxification pathways, so it is important to err on the side of caution. The following day the dosage can be increased a few drops - if there is no reaction then the child can take the full dosage according to their weight - see the table below. In the testimonials section of the website there are examples of very hypersensitive children who could not tolerate any other heavy metal chelator, not even natural ones, but really benefited from the HMD™ with demonstrable behavioral and cognitive changes.

HMD™ Dosage for Children & Teenagers by Weight									
Child's weight more than: lbs	7	14	21	28	42	56	80	112	154
Child's weight more than: kg	3	6.5	9.5	12.5	19	25	36	50	70
Total amount: (drops x 3 daily)	2x3	3x3	5x3	7x3	10x3	14x3	20x3	28x3	40x3
ml x 3 daily:	0.05	0.08	0.14	0.2	0.3	0.4	0.5	0.8	1.14

At these dosages, children can take the HMD™ for 3 months or more without any undue stress on their detoxification pathways. With very toxic children with known heavy metal toxicity, these dosages can be increased under the advice of a health practitioner that is knowledgeable in heavy metal detoxification. If additional drainage remedies are not taken, then it is a good idea to allow the detoxification organs of the body to take a rest for one day per week, so the HMD™ could be taken for 6 days per week, with one day of rest. If your practitioner has recommended drainage remedies, then this may not be necessary. Many of the ingredients in HMD™ have been well researched and have been found to have many other health benefits such as:

- It stimulates and builds the immune system
- Act as a hepato-protective agent.
- It improves cellular efficiency and integrity.
- It helps to detoxify other xenobiotics.
- It strengthens the body's ability to recover quickly from exercise and disease.
- It mitigates some side-effects of chemo and/or radiation treatment.
- It can lower blood sugar levels.
- It combats damaging free radicals.
- It enhances production of interferon.
- It accelerates and enhances the re-growth of damaged tissue even when ulcerated, burnt and resistant to other healing modalities.
- It activates cellular functions and increases metabolism.
- It normalizes the metabolism of fats.
- It activates protein synthesis.
- It regulates liver and kidney functions.
- It increases the growth of beneficial bacteria in your colon.
- It promotes rapid healthy growth in children without adverse side effects.
- It enhances RNA/DNA functions responsible for the production of proteins, enzymes and energy at the cellular level.
- It helps you to resist the effects of premature aging.
- It encourages the rejuvenation of the body's own DNA/RNA, thus you will look and feel younger, typically beginning with visible positive changes as it strengthens and improves hair, skin, and nails.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.