

So if we are complex bio-electro-chemical systems, is it possible to use bio-electrical processes to safely stimulate detoxification and remineralisation of the body? Chris Erasmus investigates.

Bio-electric Detox



One of the problems with the many new medico-technological devices around at present is figuring out which of them work, who's copying who and what claims are valid and reliable.

By the time we get to the place where we are ready to write something about any such device or technology, we've usually weeded out most of the pretenders, seen through the 'smoke and mirror' shows of the also-rans and have got to the place where we are talking about something that works, at least for most people. The rest is usually about how well it works and for whom, which conditions it applies to and that sort of thing.

In the case of the Mineralizer, we are talking about one of a clutch of similar gadgets which amount to an electro-chemical device driven by a low-voltage DC current (it won't electrocute you if there're no shorts and it's used correctly) that are purported to work in one of two ways: one such device's makers claim it operates way down at the quantum level and the explanation of its operations then become a little difficult to put into simple language; the other sort, such as the Mineralizer, is said to use a couple of well-

known biochemical processes to help the body rapidly to detox and remineralise.

So far so good. So let's see what its makers say about it and what it can do.

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After pointing out just how toxic and deficiency-generating our lifestyles and eating habits are, this device's proponents say that it is an extremely simple, and if used properly, safe way to rejuvenate the entire biochemistry of the body. How it works is by pouring warm tap water (at body temperature) into a basin, placing the electrode and 5 to 10ml of coarse sea salt into the basin, immersing one's feet, switching it on and relaxing for about 45 minutes.

The Mineralizer, they say, is based on nature's healing mineral baths. For centuries mineral baths have been used and still are by many cultures. But it's not convenient for most of us to get to such a place, so they have provided a techno solution. Made for robust use, this device 'has been made for the tough conditions of Africa, such as power surges, and can withstand the duration of a long mineralisation treatment, which can last up to

an hour'.

Based on the principle that in a healthy, average-built individual, blood will circulate through the system in half an hour, their device is made to run for a significantly longer period of time at any one sitting.

Ok, so what does it do? To begin with, the warm water opens the pores, creating a gateway into and out of the body. The Mineralizer employs a low voltage direct current to separate the water molecules into positive (+) and negative ions (-). These ions pass through the body, attach to and neutralise oppositely charged particles. Osmosis allows the neutralised particles to move through whichever surface is exposed to the water. Electrolysis (encouraged by the sea salt dissolved in the water) involves the passage of direct current through a solution which results in the production of certain chemical reactions. Some chemical compounds dissolve in water to form a solution. When the compounds dissolve, they split into ions – either cations (-) or anions (+). Salt is a good example: sodium chloride (Na+Cl-) splits into sodium ions Na+ and chlorine ions Cl- which are mixed with the water molecules to form a salty solution. Because they consist of electrically charged molecules, these ions increase the conductivity of the solution. This, in turn, enables an electric current to flow easily.

When the current is switched on, opposite charges will attract, so that positively-charged cations (pronounced cat-ions) will move towards the cathode (the negative electrode). This is known as cataphoresis. Likewise, the anions (an-ions) will move towards the anode (the positively electrode). This is known as anaphoresis. The chemical reactions at these electrodes will depend upon the chemical composition of the electrolyte and the electrodes.

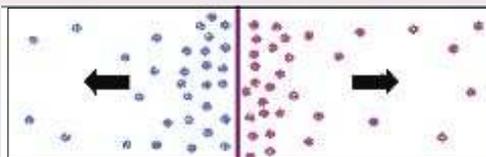
The process of separating oxygen and hydrogen is known as decomposition, which is an 'oxidation-reduction reaction'. Oxidation involves the giving up of electrons, while reduction is the gaining of electrons – the twin processes being at the very basis of most chemical reactions and much of the biochemistry of our bodies. These conjoined processes are usually referred to as the redox reaction (reduction and oxidation combined) because they almost always happen together.

The presence of positive and negative ions is essential to organic chemistry and drives both oxidation and reduction reactions. Freeing electrons and attaching them to other molecules is part of the ordinary activity inside every cell.

Without going into boring Matric-

Diffusion

Diffusion is the process by which molecules interact as a result of their kinetic energy, as in two containers of gas A and gas B separated by a divider. The molecules of both gases are in constant motion and make several collisions with the divider. The tendency to diffusion is very strong because of the high molecular velocities. Therefore the molecules move away from where there are many collisions.



type chemistry, the bottom line is that in the processes of oxygen and hydrogen molecules being separated through electrolysis-driven exchanges of electrons, some free electrons become available in the water, along with some liberated hydrogen and liberated oxygen molecules. So the first benefit of the Mineralizer is said to be the provision of these oxygen molecules which are believed to be powerfully involved in cellular detoxification, the promotion of healthy cellular activity (think how your cells would get on without oxygen) and in the maintenance of youthful looks and vigour by working as a powerful antioxidant, repairing free radical damage.

Now if you have seen one of these devices working or you look at the accompanying picture, you might be forgiven for initially going into slight shock, because in very short order, normal-looking water rapidly goes some nasty shade of dark brown or worse. If you are thinking in terms of detoxification, you would be inclined to think the person whose feet are in the water (could be your own) was so awfully toxified that they would be lucky to be alive.

The good news is that even without any feet in the water, it will rapidly turn brown, most likely, or some or other offensive similar shade since the electrolysis taking place is creating a mineralising process through the redox reactions going on in the water. What you are seeing is the precipitation of particulates (small and previously invisible particles) which are also being neutralised by the ionisation process. Various towns and cities' water supplies have a lot of particulate matter in them, so you are going to get discolouration of some kind wherever you go.

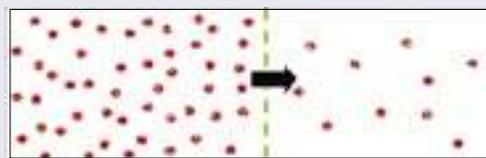
On the other hand, you can still tell the difference between the

reaction of the water alone and the reaction when there are feet in the water. The water matter will easily rinse out of the foot basin which had no feet in it, while the foot basin which had feet in it requires some labour in removing the accumulated 'sludge' from the basin. A lot of sludge comes out enclosed in adiposity and mucous, which are viscous substances. Tests that have been done to the water contents after a session have revealed the presence of urea, glucose and creatine molecules. None of that sounds good, and it isn't, for the most part. Think of the tacky dirty water mark left in your bath after a long, hot soak and multiply several times, and you get the picture.

What's going on, in short, as your feet sit in the slightly electrified water

Osmosis

Osmosis is the process when two solutions of a different concentration are separated by a semi-permeable membrane. This membrane will be permeable to the smaller solutions' molecules (solvent) but not to the larger solutions' molecules (solute). The solvent will be inclined to diffuse across the membrane from the more concentrated to the less concentrated solution. Osmosis is of great importance in biological processes where the solvent is water. The transport of water and the molecules across biological membranes is essential to many processes in all living organisms.





Colour Indications

Listed below are possible interpretations of the the resulting water colours post detox.

Yellow-green	kidneys, bladder, urinary tract, female/prostate area
Orange	joints
Brown	liver & cellular level debris
Orange/Yellow	spleen
Black	liver
Dark green	gallbladder
White foam	lymphatic system
White particles	yeast / fungus
Black particles	heavy metals
Red particles	blood materials

The electro-chemical detox device utilises the process of osmosis & diffusion

and the electrodes bubble away like some slightly demented medieval alchemical experiment, is that your body is exchanging electrons and charged molecules with the water, is absorbing minerals which have fallen into short supply in the body or getting rid of minerals and other substances which are in over-supply in the body (through the processes of osmosis and diffusion – see relevant boxes on the previous page).

Such treatments, say the Mineralizer's makers, 'complement a wide range of treatments and therapies by speeding up the release of toxins out of the body'.

There are differences with every treatment, though the water colours may appear relatively similar. But getting into these differences, what the different colour of water means and so forth is by and large a waste of time (see box above right for possible interpretations).

The main point, say those who encourage the use of these devices, is that even if we lived the cleanest life possible, we would still end up with some free radicals floating about (a single lungful of smoky diesel truck exhaust contains more free radicals than our great grandparents would have been exposed to in the entirety of their lives) and a buildup of toxic chemicals and other nasty substances in the body. Eventually, imbalances and toxic build-up create a breakdown of the body's automated corrective process known as tissue homeostasis, resulting in premature aging and, ultimately, disease and death.

Detoxification, then, appears to be one way to head off these outcomes, or at least to slow them down, and the Mineralizer is supposed to be one of the best ways to conveniently and rapidly detoxify the body, by ridding it of physical pollutants such as toxic metals, harmful industrial chemicals, parasitic disease organisms, dead cellular material, and ordinary bodily waste products.

The makers of this device admit that there are many different types of detoxification techniques, and that they all have their unique appropriateness – most often a combination may be used for optimum results.

But because of its convenience, easy of use and the fact that the feet are almost the ideal point for the body to release toxins, the

Mineralizer is claimed to be a highly efficient waste-dump system for modern folks, say its makers. Those who have successfully used foot detox patches may well agree with most of that.

Here's the catch, though. Any naturopath will tell you that detoxification isn't always a straightforward process and it's quite possible that someone with a high toxicity load can, in the course of even a simple cleansing fast, trigger the body to dump an unusually heavy load of toxins from preferred accumulation sites like fat cells or neurological tissues into the blood stream. Not only does this sort of thing result in unpleasant and even debilitating symptoms, though almost always of a temporary nature, it's not unknown for someone with an already compromised body, and with a heavy toxicity load, to initiate through a cleansing process such a heavy toxin dump into the bloodstream as to put severe pressure on their vital organs, especially the liver and kidneys, which between them filter the blood. This process can potentially permanently shut down these organs, with disastrous results.

This warning is necessary, though it is unlikely to be overly significant for most potential users of the Mineralizer. But just like warning people not to use heavy equipment after taking a substance that might inhibit their movements or make them drowsy, it's critical that the user be forewarned.

That having been said, it is clear that the Mineralizer and similar devices have the potential, if properly used and with the right supervision, to help the body restore healthful functioning by ridding it of some of its toxic burden and helping it to restore the ion and mineral balance which modern living tends to destabilise.

There is no scientific measure as yet, they say, to prove which organ or part of the body is detoxifying, so no medical claims are being made. However, tests of the used water, as mentioned earlier, give an indication that there is an interaction taking place between the basin of water, the electrode and the client's feet. Given that the main forms of toxin elimination from an one's body occurs via urination, perspiration, mucus secretions and bowel movement, and that in most of us these systems aren't always able to get the whole job done, this addition to the health arsenal may be just the right thing to help our bodies get back into much healthier functioning. ○