

## The Detoxification Myth

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*Everyone wants to "detoxify" their bodies. Is this for real?*

By Brian Dunning, Skeptoid Podcast  
Episode 83, January 15, 2008  
<http://skeptoid.com/episodes/4083>

Today we're going to head into the bathroom and suck the toxins out of our bodies through our feet and through our bowels, and achieve a wonderful sense of wellness that medical science just hasn't caught onto yet. Today's topic is the myth of detoxification, as offered for sale by alternative practitioners and herbalists everywhere.

To better understand this phenomenon, it's necessary to define what they mean by toxins. Are they bacteria? Chemical pollutants? Trans fats? Heavy metals? To avoid being tested, they leave this pretty vague. Actual medical treatments will tell you exactly what they do and how they do it. Alternative detoxification therapies don't do either one. They pretty much leave it up to the imagination of the patient to invent their own toxins. Most people who seek alternative therapy believe themselves to be afflicted by some kind of self-diagnosed poison; be it industrial chemicals, McDonald's cheeseburgers, or fluoridated water. If the marketers leave their claims vague, a broader spectrum of patients will believe that the product will help them. And, of course, the word "toxin" is sufficiently scientific-sounding that it's convincing enough by itself to many people.

Let's assume that you work in a mine or a chemical plant and had some vocational accident, and fear that you might have heavy metal poisoning. What should you do? Any responsible person will go to a medical doctor for a blood test to find out for certain whether they have such poisoning. A person who avoids this step, because they prefer not to hear that the doctor can't find anything, is not a sick person. He is a person who wants to be sick. Moreover, he wants to be sick in such a way that he can take control and self-medicate. He wants an imaginary illness, caused by imaginary toxins.

Now it's fair for you to stop me at this point and call me out on my claim that these toxic conditions are imaginary. I will now tell you why I say that, and then as always, you should judge for yourself.

Let's start with one of the more graphic detoxification methods, gruesomely pictured on web sites and in chain emails. It's a bowel cleansing pill, said to be herbal, which causes your intestines to produce long, rubbery, hideous looking snakes of bowel movements, which they call mucoid plaque. There are lots of pictures of these on the Internet, and sites that sell these pills are a great place to find them. Look at DrNatura.com, BlessedHerbs.com, and AriseAndShine.com, just for a start. Imagine how terrifying it would be to actually see one of those come out of your body. If you did, it would sure seem to confirm everything these web sites have warned about toxins building up in your intestines. But there's more to it. As it turns out, any professional con artist would be thoroughly impressed to learn the secrets of mucoid plaque (and, incidentally, the term mucoid plaque was invented by these sellers; there is no such actual medical condition). These pills consist mainly of bentonite, an absorbent, expanding clay similar to kitty litter. Combined with psyllium, used in the production of mucilage polymer, bentonite forms a rubbery cast of your intestines when taken internally, mixed of course with whatever else your body is excreting. Surprise, a giant rubbery snake of toxins in your toilet.

It's important to note that the only recorded instances of these "mucoid plaque" snakes in all of medical history come from the toilets of the victims of these cleansing pills. No gastroenterologist has ever encountered one in tens of millions of endoscopies, and no pathologist has ever found one during an autopsy. They do not exist until you take such a pill to form them. The pill creates the very condition that it claims to cure. And the results are so graphic and impressive that no victim would ever think to argue with the claim.

Victims, did I call them? Creating rubber casts of your bowels might be gross but I haven't seen that it's particularly dangerous, so why are they victims? A one month supply of these pills costs \$88 from the web sites I mentioned. \$88 for a few pennies worth of kitty litter in a pretty bottle promising herbal and organic cleansing. Yeah, they're victims.

It's already been widely reported that alternative practitioners who provide colon cleansing with tubes and liquids have killed a number of their customers by causing infections and perforated bowels, and for this reason the FDA has made it illegal to sell such equipment, except for use in medical colon cleansing to prepare for radiologic endoscopic examinations. There is no legally sold colon cleansing equipment approved for general well being or detoxification.

As usual, the alternative practitioners stay one step ahead of the law. There are a number of electrical foot bath products on the market. The idea is that you stick your feet in the bath of salt water, usually with some herbal or homeopathic additive, plug it in and switch it on, and soak your feet. After a while the water turns a sickly brown, and this is claimed to be the toxins that have been drawn out of your body through your feet. One tester found that his water turned brown even when he did not put his feet in. The reason is that electrodes in the water corrode via electrolysis, putting enough oxidized iron into the water to turn it brown. When reporter Ben Goldacre published these results in the *Guardian Unlimited* online news, some of the marketers of these products actually changed their messaging to admit this was happening — but again, staying one step ahead — now claim that their product is not about detoxification, it's about balancing the body's energy fields: Another meaningless, untestable claim.

But detoxifying through the feet didn't end there. A newcomer to the detoxification market is Kinoki foot pads, available at BuyKinoki.com. These are adhesive gauze patches that you stick to the sole of your foot at night, and they claim to "draw" "toxins" from your body. They also claim that all Japanese people have perfect health, and the reason is that they use Kinoki foot pads to detoxify their bodies, a secret they've been jealously guarding from medical science for hundreds of years. A foolish claim like this is demonstrably false on every level, and should raise a huge red flag to any critical reader. Nowhere in any of their marketing materials do they say what these alleged toxins are, or what mechanism might cause them to move from your body into the adhesive pad.

Kinoki foot pads contain unpublished amounts of vinegar, tourmaline, chitin, and other unspecified ingredients. Tourmaline is a semi-precious gemstone that's inert and not biologically reactive, so it has no plausible function. Chitin is a type of polymer used in gauze bandages and medical sutures, so naturally it's part of any gauze product. They probably mention it because some alternative practitioners believe that chitin is a "fat attractor", a pseudoscientific claim which has never been supported by any evidence or plausible hypothesis. I guess they hope that we will infer by extension that chitin also attracts "toxins" out of the body. Basically the Kinoki foot pads are gauze bandages with vinegar. Vinegar has many folk-wisdom uses when applied topically, such as treating acne, sunburn, warts, dandruff, and as a folk antibiotic. But one should use caution: Vinegar can cause chemical burns on infants, and the American Dietetic Association has tracked cases of home vinegar applications to the foot causing deep skin ulcers after only two hours.

Since the Kinoki foot pads are self-adhesive, peeling them away removes the outermost layer of dead skin cells. And since they are moist, they loosen additional dead cells when left on for a while. So it's a given that the pads will look brown when peeled from your foot, exactly like any adhesive tape would; though this effect is much less dramatic than

depicted on the TV commercials, depending on how dirty your feet are. And, as they predict, this color will diminish over subsequent applications, as fewer and fewer of your dead, dirty skin cells remain. There is no magic detoxification needed to explain this effect. (*Later news: In fact, Kinoki footpads contain powdered wood vinegar, which always turns brownish black when exposed to moisture, such as sweat. - BD*)

Anyone interested in detoxifying their body might think about paying a little more attention to their body and less attention to the people trying to get their money. The body already has nature's most effective detoxification system. It's called the liver. The liver changes the chemical structure of foreign compounds so they can be filtered out of the blood by the kidneys, which then excrete them in the urine. I am left wondering why the alternative practitioners never mention this option to their customers. It's all-natural and proven effective. Is it ironic that the only people who will help you manage this all-natural option are the medical doctors? Certainly your naturopath won't. He wants to sell you some klunky half-legal hardware.

Why is it that so many people are more comfortable self-medicating for conditions that exist only in advertisements, than they are simply taking their doctor's advice? It's because doctors are burdened with the need to actually practice medicine. They won't hide bad news from you or make up easy answers to please you. But that's what people want: The easy answers promised by advertisements and alternative practitioners. They want the fantasy of being in complete personal control of what goes on inside their bodies. A doctor won't lie to you and say that a handful of herbal detoxification pills will cure anything that's wrong with you; but since that's the solution many people want, there's always someone willing to sell it.



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