

Improve Your Health by Removing Toxins from Your Body

What does “detox” mean?

Detoxification or “detox” diets are ways to remove “toxins” from the body to improve health. This is different from alcohol or drug detox. Instead, it refers to toxins in our environment or even our food. Detox diets may last for a day or weeks. Some methods involve fasting, removing foods from a diet, drinking juices, or taking supplements. They are said to help with a variety of illnesses such as fibromyalgia, fatigue, obesity and intestinal problems.¹

Although “detoxes” or “cleanses” are increasingly common, the idea of removing impurities from the body has been around for centuries. Ayurveda (an ancient Indian science) and traditional Chinese medicine both use this method.² Fasting, or limiting foods on certain days, is also part of many modern religions. Today, we hear about it in magazines and TV shows. Hollywood celebrities have their own brands. There are many books, expensive supplements, juices, natural products and internet packages that all advertise them. However, we don’t yet have scientific proof that mainstream or fad detoxes are helpful.

What is a “toxin”?

Scientists and doctors don’t have a clear definition of a toxin. Toxins can be the waste products that our body naturally produces, like carbon dioxide. Most people think of toxins as chemicals that are bad for people and the environment.

Some chemicals have been tested for safety. But we don’t know much about the long-term health effects of most chemicals. We know even less about mixtures of these chemicals. What we do know is some of them, like persistent organic pollutants (POPs), have been connected with heart disease, cancer, hormonal problems, growth problems for children, and brain problems.¹

We are surrounded by thousands of industrial chemicals. They are in our air, food, water and household products. They come from pesticides, herbicides, smoke, flame retardants (chemicals that make things resistant to fire), and other chemicals used in factories. The Centers for Disease Control and Prevention (CDC) monitors industrial chemicals. Scientists at the CDC sampled a number of people living in the United States. From their research, we know that every person in the United States has chemicals in their bodies.³ The CDC even found 200 industrial chemicals, pollutants, and pesticides in newborns.⁴

We are also exposed to chemicals or toxins through households products. Some examples include pesticides from lawns and non-organic foods, cleaning products, and food additives. There are also chemicals in plastic food wraps and containers and non-stick surfaces.⁵

Just as with the chemicals above, stress can interfere with our body's ability to heal.⁶ Reducing stress can help your body remove toxins. Examples of where stress comes from are:

- Money worries
- Being upset emotionally (feeling fear, anger, sadness)
- Mental health concerns, like addictions or overeating
- Too much time around TVs, phones, noise, light, computers
- Feeling lonely, isolated, or without a purpose in life

How does my body get rid of toxins?

Our body has built-in ways to remove toxins. For example, our body produces carbon dioxide when it converts food to energy. Carbon dioxide is a waste product or toxin, and we get rid of it by breathing it out. Other organs that help remove toxins include the liver, skin, kidneys, intestines, lymph nodes, and blood vessels. In addition to breathing out, we remove toxic products through urine, feces, and sweating.

How can I test for toxins?

There are ways to test for toxins in hair, blood, and urine. However, these tests are not always useful and can be expensive. Since we know every person has toxins in them and the tests are not helpful, experts do not recommend routine testing.^{3,6}

In rare cases, a medical professional may recommend testing. It is usually when someone is exposed to a harmful chemical at work or somewhere else. Some people with dental work or metal implants in their bodies may also be tested, though it is not clear that fillings cause harm. Most people will not benefit from testing.

How do I reduce toxins in my body?

First, you can reduce the amount of toxins you are exposed to and/or put in your body. You can also support the body's natural process of removing toxins, which is explained further under "What is a safe way for me to detox?"

Steps to reduce toxins include the following:^{5,6}

- Consume fewer pesticides by buying organic fruits and vegetables. If you can't afford all organic, use the "Dirty Dozen" and "Clean Fifteen" as a guide. The fruits and vegetables listed under the "Dirty Dozen" have the most pesticides. They are the ones most important to buy organic, if you can. The "Clean Fifteen" have the least amount of pesticides. This list is updated regularly(www.ewg.org).

Environmental Working Group's 2021 Shopper's Guide to Pesticides in Produce™

Dirty Dozen ⁷ (Better to Buy Organic)	Clean Fifteen ⁸ (Less Important to Buy Organic)
1. Strawberries	1. Avocados
2. Spinach	2. Sweet corn
3. Nectarines	3. Pineapples

Dirty Dozen ⁷ (Better to Buy Organic)	Clean Fifteen ⁸ (Less Important to Buy Organic)
4. Apples	4. Cabbages
5. Grapes	5. Onions
6. Peaches	6. Sweet peas frozen
7. Cherries	7. Papayas
8. Pears	8. Asparagus
9. Tomatoes	9. Mangoes
10. Celery	10. Eggplants
11. Potatoes	11. Honeydew melon
12. Sweet bell peppers	12. Kiwis
	13. Cantaloupes
	14. Cauliflower
	15. Broccoli

- Eat smaller fish such as sardines, anchovies, or small salmon. Large fish have more mercury and other chemicals in their bodies than small fish.⁵ Fish is considered healthy, and many experts suggest eating it two to three times per week.
- Don't store food or microwave it in plastic containers. Use re-usable glass or steel containers for water instead of plastic water bottles. Some plastics and some canned foods contain bisphenol A (BPA). Choose BPA free products when available.
- Read food labels. Consider avoiding foods that have artificial ingredients or food dyes.
- Reduce the amount of alcohol you drink.
- Don't drink too much caffeine.
- Look through your household cleaning products, makeup, and personal care products (such as toothpaste), and only buy things with safe ingredients. The Environmental Working Group (www.ewg.org) has good information on safety of different foods and products.
- Don't smoke. Ask your health care team for help quitting if you do. Avoid second hand smoke.
- Reduce stress and make time daily or weekly for rest, relaxation and enough sleep.

What is a safe way for me to detox?

It is safest to avoid extreme approaches.⁶ Extreme detoxes tend to be expensive and claim to have major results. Programs that have you make healthy lifestyle changes (such as healthy eating, more exercise, less stress) are the safest.⁶ Positive lifestyle changes help reduce how many toxins we are exposed to and keep our organs healthy so they can remove toxins better.

There are six basic parts of a good detox program:

1. Exercise daily through yoga or walking in nature.
13. Sweat regularly through exercise, a sauna, or a steam room. Our bodies release waste products through our sweat. Sauna therapy has also been found to improve asthma, lower blood pressure, and reduce pain.⁹ Saunas are popular and used regularly in places like Norway, Sweden, Iceland, and Finland. If you have a heart condition, talk with your health care provider before starting sauna therapy.

14. Eat a healthy diet with plenty of fruits, vegetables and clean water. Cruciferous vegetables such as kale, broccoli, cauliflower and Brussels sprouts are good for your liver.¹⁰ Make sure you eat enough fiber; aim for 25–35 grams, per day. Ask for help from a dietitian.
15. Make time to relax. Meditation, prayer, and breathing techniques can all help.
16. Consider getting a massage or acupuncture, which may be helpful.⁶
17. Reduce or avoid soft drinks and coffee. Drink plenty of clean water to help flush out your system.

Is taking a supplement a safe way to detox?^{1,9}

Some dietary supplements may naturally help remove toxic metals from the body. There is limited evidence, but for the most part they are safe.

- Cilantro (coriander) is a widely available herb often used in Asian and Mexican foods. The evidence is unclear on whether it may be able to reduce levels of cadmium and other heavy metals. It is a food and is safe in moderate amounts.
- Chlorella is a green algae that may help remove mercury and lead. It can cause diarrhea and abdominal cramps. People who take the blood thinner, warfarin, should not use this supplement.
- Milk thistle is common in “liver detoxes.” It protects the liver and is thought to help people with chronic liver disease and cirrhosis.

Can detox cause any harm?¹

Many companies advertise supplements, products, foods and packages that are meant to remove toxins from your body. They have little to no scientific proof and can be quite expensive.

Some detox programs have so few nutrients that a person may not get what they need for health, growth, and the body to work properly. Some are very low in calories, which over time can be harmful. One danger is rapid weight loss. With rapid weight loss, toxins stored in fat go into the blood. From there, they can affect other organs. Fasting or being constantly hungry causes stress. When the body is stressed, the stress hormone cortisol goes up. High cortisol levels increase appetite and cause weight gain. Fasting or very low calorie diets can be safe and helpful when done under medical supervision.

Some detox programs say that side effects like fatigue, headaches, nausea, and anxiety are because of toxins leaving the body. These are most likely caused by not eating enough calories. Stress from doing a detox may make eating problems, such as bingeing, worse. Drinking too much water can be dangerous. If you have chronic medical problems, especially diabetes, talk with your health care team before trying a detox program.

Chelation therapy is a way to remove heavy metals from the body. Heavy metals include iron, mercury, copper, nickel and lead. It involves injecting a solution, ethylenediaminetetraacetic acid, EDTA, into the bloodstream. The solution grabs heavy metals and removes them from the body. We don't have a lot of research showing that chelation works, except for a recent trial that chelation may help prevent heart disease.¹¹ Sometimes, chelation can be harmful. It can



lower blood pressure to much, or lead to heart rhythm problems and kidney failure. It is perhaps best to try other things first.⁹

“Colonic” is another term for enema. Detox enemas may use water, coffee, herbs, or other materials. They are part of some traditional medicine systems. They are put into the colon through the rectum to help the body detoxify. There is no scientific evidence that colonics are useful. They should be used with caution, because they can rarely cause bowel tearing, infection, nausea, diarrhea, bloating and cramping.⁹

For you to consider:

- Is there anything in particular that grabs your attention in this handout?
- Are you concerned about toxins in your body? If so, is there a particular toxin you are concerned about? Talk to your health care team about your concerns.
- Have you tried a detox program in the past? If so, how did you feel when you did it? Do you feel it was a safe thing to do? Do you think it helped?
- When you look at the “Safe ways to detox” list from earlier, are any options interesting you? If so, which one(s) will you focus on first? Consider developing a plan. What will you do? When? Where?

The information in this handout is general. **Please work with your health care team to use the information in the best way possible to promote your health and happiness.**

For More Information

ORGANIZATION	RESOURCES	WEBSITE
University of Wisconsin Integrative Health Program	A variety of Integrative Whole Health handouts on your surroundings	https://www.fammed.wisc.edu/integrative/resources/modules/
Environmental Working Group	Large variety of information to empower people to live healthier lives in a healthier environment	http://www.ewg.org/
Integrative Health Program, University of Wisconsin Department of Family Medicine and Community Health.	Patient handout outlining a safe detox program: Detoxification to Promote Health: A 7-Day Program	http://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/handout_detoxplan.pdf

This handout adapted for the University of Wisconsin Integrative Health Program from the original written for the Veterans Health Administration (VHA) by Suhani Bora MD, Integrative Health Family Physician and former Academic Integrative Health Fellow, Integrative Health



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