

Detoxification

From Wikipedia

Detoxification (detox for short) is the physiological or medicinal removal of toxic substances from a living organism, including, but not limited to, the human body. It can also refer to the period of withdrawal during which an organism returns to homeostasis after long-term use of an addictive substance. In medicine, a person can achieve detoxification by decontamination of poison ingestion and the use of antidotes as well as techniques such as dialysis and (in a limited number of cases) chelation therapy.

Many alternative medicine practitioners promote various types of detoxification such as detoxification diets. Scientists have described these as a “waste of time and money.” Sense About Science, a U.K.-based charitable trust determined that most commercial products’ “detox” claims lack any supporting evidence.

Alcohol Detoxification

Main article: [Alcohol detoxification](#)

Alcohol detoxification is a process by which a heavy drinker’s system is brought back to normal after using alcohol on a continuous basis. Serious alcohol addiction results in decreased production of GABA, a re-uptake inhibitor, because alcohol acts to replace it. Precipitous withdrawal from long-term alcohol addiction without medical management can cause severe health problems and can result in death. Alcohol detox is not a treatment for alcoholism. After detoxification, the patient must undergo other treatments to deal with the underlying addiction that caused the alcohol abuse.

Drug Detoxification

Main article: Drug detoxification

Drug detoxification will reduce or relieve withdrawal symptoms while helping the addicted individual adjust to living without drug use; drug detoxification is not meant to treat addiction, but rather, it's an early step in long-term treatment. Detoxification is achievable drug free or may use medications during treatment. Often drug detoxification and treatment will occur in a community program that lasts several months and takes place in a residential rather than medical center.

Drug detoxification varies, depending on the location of treatment, but most detox centers provide treatment to avoid the symptoms of physical withdrawal to alcohol and other drugs. Most also incorporate counseling and therapy during detox to help with the consequences of withdrawal.

Metabolic Detoxification

An animal's metabolism can produce harmful substances, which it can then make less toxic through reduction, oxidation (collectively known as redox reactions), conjugation and excretion of molecules from cells or tissues. This is called xenobiotic metabolism. Enzymes that are important in detoxification metabolism include cytochrome P450 oxidases, UDP-glucuronosyltransferases, and glutathione S-transferases. These processes are particularly well-studied as part of drug metabolism because they influence the pharmacokinetics of a drug in the body.

Alternative Medicine

Main article: [Detoxification \(alternative medicine\)](#)

Certain approaches in alternative medicine claim to remove "toxins" from the body through herbal, electrical or electromagnetic treatments (such as the Aqua Detox treatment). These toxins are undefined and have no scientific basis, making the validity of such techniques questionable. There's no evidence for toxic accumulation in these cases, as the liver and kidneys automatically detoxify and excrete many

toxic materials, including metabolic wastes. Under this theory, if toxins are too rapidly released without safe elimination (such as metabolizing fat that stores toxins), they can damage the body and cause malaise. Therapies include contrast showers, detoxification foot pads, oil pulling, Gerson therapy, snake-stones, body cleansing, Scientology's Purification Rundown, water fasting, and metabolic therapy.