

Burning Q&A

We've burned our garbage for years—what's the big deal?

The practice of putting a match to your family's garbage has been a tradition for generations of Coloradans. Until a few decades ago, the practice was much less dangerous to your health, since most household garbage contained only paper, wood, and glass—materials that, when burned, give off smoke and ash. However, modern garbage is a mix of plastics and other synthetics that release a hazardous mixture of carcinogens and other toxins when burned. Even seemingly harmless items, like white office paper and the lightweight cardboard boxes used for frozen pizzas and vegetables you buy at the grocery store, can give off toxic emissions that cause serious environmental and health problems.

Incinerators burn garbage—why can't I?

Burn barrel fire temperatures rarely exceed 500°F, whereas municipal garbage incinerators operate at temperatures near 2200°F to insure complete combustion of the refuse and some pollutants inside. Incinerators also employ a series of sophisticated filters to reduce the amount of harmful emissions of chemicals and ash from the chimney. Because burn barrels operate at temperatures far below the level for complete combustion and lack filtration entirely, they emit a much larger quantity of toxins and ash. For each pound of garbage burned in a burn barrel, a minimum of twice as many furans, 17 times as much dioxin, and 40 times as much ash is given off compared to the emissions from the same pound of garbage burned in an incinerator.

What is given off when garbage burns?

Besides ash (particulates), furans, dioxins, and other halogenated hydrocarbons, burn barrels give off high levels of carbon monoxide, carbon dioxide, sulfur dioxide, and heavy metals such as lead, arsenic, mercury, barium, chromium, and cadmium. Together, these chemicals cause a wide variety of health problems, from mild irritation to serious chronic and deadly diseases. And they need not be directly inhaled from the smoke of burning garbage to be harmful—some of these toxins remain in the immediate vicinity and the area downwind of the burn barrel for decades. Other toxins in the ash and emissions gradually work their way into your groundwater.

This accumulation exposes you, your family, your neighbors, and future generations living on the same land to ever-increasing levels of hazardous substances. In fact, children, the elderly, and people with conditions like asthma or impaired immune systems are at much greater danger. Is this a risk you'd like to take?

Not as safe as you thought? Here's what to do.

With all of this evidence suggesting that burning your own garbage can damage your health—and the health of people for decades to come—why take a chance?

For more information contact

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Did You Know?



BURN BARRELS ARE UNHEALTHY

The pollution caused by open garbage burning is unhealthy for wildlife and people. It damages not only air quality, but also the soil and water—in your own backyard!

The Pollutants

Dioxin is a catch-all term for three chemical groups: true dioxins, furans, and polychlorinated biphenyls (PCBs). Dioxins are usually the result of human activities, some of the most toxic compounds known, and are especially persistent contaminants in the environment. Even at levels less than one part per billion, it can cause serious health impairments. Dioxin is also one of several toxic components found in Agent Orange, the Vietnam-era herbicide that continues to cause health problems for many American veterans exposed thirty years ago. It was concerns over dioxin contamination that caused hundreds of families at Love Canal (Niagara Falls, NY) and Times Beach, Mo., to abandon their homes in the mid-1970s and early 1980s.

Given off in large quantities by burning plastics, paper, and other types of packaging waste, dioxin accumulates in the soil and vegetation in areas surrounding burn barrels and also is dispersed into the air where it can travel great distances. Ground-level concentrations of dioxin resulting from burning household garbage in a burn barrel can be as much as 7,000 times the amount formed when garbage is burned in a municipal incinerator.

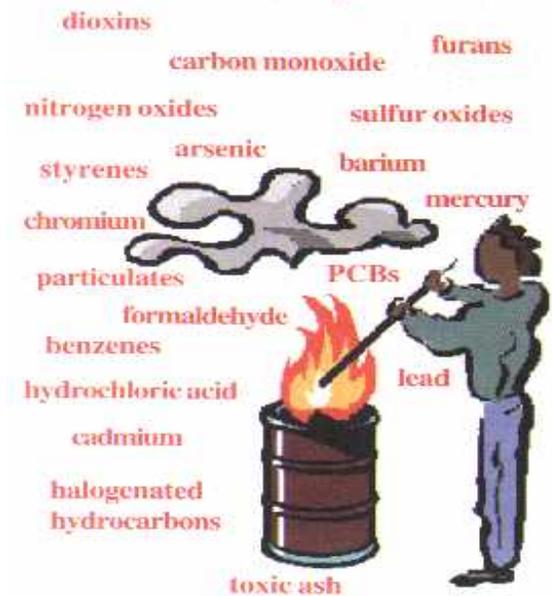
Slow to break down, dioxin lingers for centuries in the affected area and is absorbed into plants that grow in the contaminated soil. Animals that eat these plants absorb the dioxin, and ultimately dioxin makes its way into humans who eat these animals, dairy products, or crops. Once dioxins have entered the environment or body, they are there to stay for many years due to their chemical stability and uncanny ability to dissolve and accumulate in fats.

The available data concerning health effects in humans are limited to studies involving occupational or accidental exposures to complex mixtures that include dioxins. Exposures to chemical mixtures that include dioxins during pregnancy and as the result of breastfeeding have been associated with subtle developmental changes.*

Based on studies conducted in animal populations, dioxin has been linked to a long list of adverse health effects, including:

- several types of cancer: The most potent type of dioxin (2,3,7,8-TCDD) is listed as a known human carcinogen (“cancercausing”)
- fatal wasting disease
- impairment of the immune system
- reproductive disorders
- endocrine disruption (alteration of sex and thyroid hormone levels)
- skin problems such as chloracne
- liver damage
- muscle dysfunction
- increased susceptibility to infections
- endometriosis
- impairment of the nervous system

** The American Academy of Pediatrics and many other professional organizations have concluded that the benefits of breastfeeding far outweigh the potential effects of dioxin in breast milk. Breast milk is known to be the most complete form of nutrition for infants and may also reduce the risk of sudden infant death syndrome and may lower rates of childhood cancer.*



Heavy metals such as lead, mercury, arsenic, barium, chromium, and cadmium move through the soil into the groundwater and cause a host of serious health problems when taken internally. Lead accumulates in blood, bones, and soft body tissues, where it affects the kidneys, central nervous system, and all blood-forming organs. It eventually can lead to brain damage, mental retardation, seizures, and behavioral disorders.

Cadmium used in metal plating and in batteries, can cause kidney and bone-marrow diseases and emphysema.

Ash and other particulate matter can irritate the eyes and throat, damage the lungs, cause bronchitis, emphysema, lung cancer, and restrict visibility. They can seriously affect people with asthma or certain allergies. Burn barrel ash laden with heavy metals is particularly toxic, and often seeps into the groundwater.

