



The DIRT Society Managing Lead in Garden Soil

Lead poisoning is as preventable as it is serious, and yet it is still widely misunderstood. As a gardener, farmer, consumer or parent, it is critical that you educate yourself about leaded soil and the effective methods of prevention.

Who is at risk? Everyone can ingest or inhale lead. Lead poisoning affects children the most severely; inhibiting development which could result in learning or physical disorders. That said, the majority of children with detrimental amounts of lead in their bloodstreams are minority, or live in impoverished neighborhoods¹. Lead can be stored in the body's bone reserves, which could be accessed during stages of malnutrition or pregnancy. The lead in a mother's bloodstream could negatively affect fetal development.

What are the symptoms? Lead poisoning can be rampant while showing little sign of its presence. The effects of lead poisoning are long-term developmental handicaps with varying degrees of severity.

How does lead enter the body? Most often, lead is either consumed or inhaled. Lead particles are found in dirt, dust and food. A common method by which children will consume lead is putting unwashed hands or foreign material into their mouths.

Where are the levels of lead the highest? Lead is everywhere. Dangerously high levels of the metal are around locations built before the mid-seventies, when lead-based paints were finally banned for residential use. Lead was also present in gasoline prior to 1986, so remnants will be found wherever automobiles were stored, maintained or driven. "Drip Zones," the areas within six feet of homes and drives, will contain considerably higher percentages of the metal.

How did lead become such a problem? It was used in paints and gasoline, as mentioned above. One should also note that, in areas where soil was tilled, shifted, turned or moved, large quantities of lead might have been driven deeper beneath the surface; thereby complicating its removal². Since the implementation of lead-based product bans in the 1970s and 1980s, lead poisoning has diminished considerably. However, improper handling and removal have integrated huge amounts of the metal in yards, lots, gardens, parks, and other common areas.

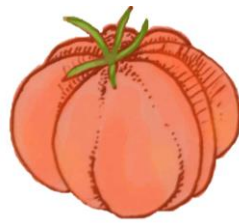


¹ Natural Resources Defense Council, Our Children at Risk: The 5 Worst Environmental Threats to Their Health, Chapter 3: Lead, Washington, DC, 1997. Available at <http://nrdc.org/health/kids/ocar/ocarinx.asp>

² U.S. Environmental Protection Agency, Air Quality Criteria for Lead, Research Triangle Park, NC, EPA600-8-83-018F, 1986.

Is there lead in my garden? Yes. However, the quantity varies greatly. Only soils with significant amounts of lead are threats to public health. In general, urban gardens and gardens kept close to a house, drive or roadway have the highest lead content. You can pay to test your soil for this and other potentially harmful materials.

If there's lead in my garden, how can I prevent it from being ingested or inhaled? The long term solutions include careful removal of earth, or the addition of significant amounts of organic material that will bind lead to the soil. As a short term solution, consider constructing raised beds or growing food in container gardens. It is also wise to rinse garden crops well; peeling roots and removing the outer leaves of leafy greens when possible. Choosing plant varieties that produce fruit for harvest, as opposed to leaves, will also ensure that only minimal amounts of lead are transmitted. The single most important rule when preventing the internalizing of lead particles is: Do not allow dust and dirt into the mouth and airways. Wash hands frequently, and remove garden shoes before entering the home. If possible, keep children's play areas and pet runs away from high-risk drip zones.



You should not let the presence of lead particles keep you from gardening, farming or homesteading. The best thing you can do to prevent lead poisoning in yourself and others is to be aware of the risks and follow the basic steps that will keep lead at bay.

Don't Spread that Lead!

- **Take a test.** Consider getting your soil professionally tested for lead levels. A small monetary investment could prevent lead poisoning.
- **When in doubt, garden above the soil.** Use raised beds or container gardens to put valuable distance between your food and your lead.
- **Lay on the organic matter!** Over time, organic materials decompose and lock lead into removable layers of earth. In high lead areas, layer organic mulch, woodchips or compost and let nature take care of the problem.
- **Wash your hands.** If you've been in the garden or yard, wash hands with soap and water. No antibacterial ingredients are necessary.
- **Leave the lead outside.** Remove gardening and play shoes before coming indoors. Also consider a clean floor mat at entryways.
- **Paws off.** Keep your pets away from high-risk areas if possible. Not only can they ingest and inhale lead themselves, they can track it into the house or common areas unwittingly.

