



Human Health Risks of Lead

Lead is a potent neurotoxicant that is unsafe for humans.ⁱ Lead poisoning has been documented in humans for over 2,500 yearsⁱⁱ and today, its effects on human health are widely known. Over the years, lead has been removed from various paints, gasoline, pipes and a host of other items to protect human health and our environment. Yet lead exposure through hunting ammunition continues to pose a threat to humans and is likely the most under-regulated form of lead use in the country. The Centers for Disease Control states that there is no safe level of lead exposure.ⁱⁱⁱ

Effects on Children and Adults

Although the effects of lead exposure are a potential concern for all humans, young children are most at risk. Lead can cause irreversible damage to the brain and nervous system, behavioral problems, anemia, liver and kidney damage, hearing loss, hyperactivity, developmental delays and, in extreme cases, death.^{iv}

In adults, lead poisoning can cause poor muscle coordination, nerve damage to the sense organs and nerves controlling the body, increased blood pressure, hearing and vision impairment and reproductive problems (e.g. decreased sperm count and infertility).^v **Failure to treat lead poisoning in the early stages can cause long-term or permanent health damage.**

“Officials: Kids shouldn’t eat animals killed with lead bullets.” *USA Today, November 2008*

Health Risks from Consuming Game Shot with Lead

Individuals who consume meat from animals killed with lead ammunition are at risk for lead exposure.^{vi} Several studies using x-ray imaging have shown that lead ammunition is highly fragmentable and nearly impossible to completely remove from meat.^{vii} These studies have found lead fragments as far as 18 inches from the bullet exit hole.^{viii} Lead hunting ammunition needlessly exposes humans to this life-threatening poison. Venison is a common dietary staple for many families throughout the United States and several studies have revealed that lead-based ammunition fragments found in venison can substantially raise the amounts of lead in human bodies.^{ix}

Protecting Families from Lead-Tainted Game Meat

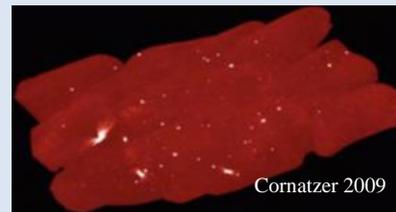
The best way for people to avoid risk of lead exposure from ammunition is to avoid eating wild animals shot with unknown ammunition. For the safety of families in need across the country, food pantries and meal sites should not accept any hunter-donated meat without first verifying that the animal was not shot with lead ammunition and was not processed in a facility that may have lead contamination from other wild-killed animals.^x

Hunter-Donated Venison Pulled from Food Pantries

After learning about lead poisoning of California Condors from spent ammunition, Dr. William Cornatzer, a North Dakota physician and hunter, conducted a study to determine how much spent lead ammunition may be contaminating game meat intended for human consumption.

With the help of health officials, Dr. Cornatzer collected packages of ground venison from food pantries throughout North Dakota and ran CT scans on the meat. His study led to the discovery of lead fragments in nearly 60 percent of the meat tested.

In March 2008, the North Dakota Health Department confirmed the presence of lead in its own tests and pulled hunter-donated venison from food pantries. As a result, state officials in Minnesota and Iowa took similar precautions.^x



Cornatzer 2009
CT image of ca. 20 one-pound venison packages from Dr. Cornatzer’s study. Bright spots are lead fragments embedded in the venison.

ⁱ Centers for Disease Control and Prevention. 2013. Lead Factsheet. National Biomonitoring Program. http://www.cdc.gov/biomonitoring/Lead_FactSheet.html.

ⁱⁱ Eisler, R. 1988. Lead hazards to fish, wildlife, and invertebrates: a synoptic review. United States Fish and Wildlife Service. Biological Report 85.

ⁱⁱⁱ Centers for Disease Control and Prevention. 2013. Lead Factsheet. National Biomonitoring Program. http://www.cdc.gov/biomonitoring/Lead_FactSheet.html.

^{iv} Environmental Protection Agency. Human Health and Lead. <http://www.epa.gov/superfund/lead/health.htm>

^v *Id.*

^{vi} D.J. Pain, et al. Potential hazard to human health from exposure to fragments of lead bullets and shot in the tissues of game animals. *PLoS ONE* 2010; 5: e10315.

^{vii} U.S. National Park Service. 2011. Lead Bullet Risks for Humans & Wildlife. <http://www.nps.gov/pinn/naturescience/leadinfo.html>.

^{viii} Minnesota Department of Natural Resources. Examining Variability Associated with Bullet Fragmentation and Deposition in White-tailed Deer and Domestic Sheep: <http://www.dnr.state.mn.us/hunting/lead/short-summary.html>

^{ix} W. Cornatzer, et al. Qualitative and quantitative detection of lead bullet fragments in random venison packages donated to the Community Action Food Centers of North Dakota, 2007. DOI 10.4080/lsa.2009.011

^x *Id.*