

“Depleted” Uranium Ammunition: Nuclear Waste as a Weapon



Enrichment of uranium for use in nuclear weapons and reactors produces various waste products, including so-called “depleted” uranium (DU). For the past twenty-five years, the U.S. Department of Defense has produced ammunition using this nuclear waste, which is both radioactive and chemically toxic. Evidence of environmental and human health damage caused by “depleted” uranium has steadily increased, despite Pentagon assertions that such impacts would not occur. The United Nations Human Rights Commission Sub-Commission on Prevention of Discrimination and Protection of Minorities considers DU munitions to be “weapons of mass destruction or with indiscriminant effect” and incompatible with international humanitarian law.

WHAT IS “DEPLETED” URANIUM?

“Depleted” uranium (DU) is a waste byproduct of the enrichment of natural uranium for use in nuclear reactors and nuclear weapons. DU is mostly composed of Uranium isotope 238, but does contain small amounts of more highly radioactive U-234 and U-235. DU created when used nuclear fuel is reprocessed may also contain plutonium and other extremely dangerous substances. The half-life of DU (the time it takes for half to decay and turn into another substance) is 4.5 billion years.

The term “depleted” uranium is misleading and does not mean that DU is harmless. DU is somewhat less radioactive than natural uranium that has been processed and concentrated, but can still harm humans. DU emits about 60% as much alpha radiation as naturally occurring uranium that has been processed and concentrated, about 85% as much gamma radiation, and essentially the same amount of beta radiation. DU’s chemical toxicity is the same as that of natural uranium.

DU WEAPONS

The U.S. military has produced weapons made of “depleted” uranium for over twenty-five years. These weapons have proliferated to at least seventeen other countries and are being sold on the world arms market by U.S. manufacturers and others. The most common DU weapons in the U.S. arsenal are 120mm shells fired by M1 tanks and 30mm shells fired by A-10 aircraft.

DU weapons were first used in conflict during the first Gulf War in 1991. Over 350 tons of DU were left in the soil, air, and water of Iraq and Kuwait at that time. DU was also definitely used in Bosnia (1994-1995), Kosovo (1999), and Iraq (2003), and may have been used in Afghanistan (2001-2003).

DU has been processed and tested at dozens of locations throughout the U.S., creating extensive contamination.

- The National Lead Industries factory in Colonie, NY, closed in 1980 after DU particles were found 26 miles away and DU levels in soil were 500 times higher than neighboring areas. (Len Dietz, 1996)
- The Starmet plant in Concord, MA dumped 400,000 pound of DU and other toxic substances into an unlined pit over twenty-five years. DU contaminated soil and groundwater, and is moving toward drinking water supplies. (Citizens Research and Environmental Watch, Concord, MA)
- The former Jefferson Proving Ground in Madison, IN contains over 150,000 pounds of DU shells and fragments. The U.S. Army wants to walk away from the contamination without performing any cleanup or ongoing environmental monitoring. (U.S. Army & Nuclear Regulatory Commission)

“Veterans and civilians in these wars WERE exposed to DU, and this inhaled DU represents a seriously enhanced risk of damaged immune systems and fatal cancers.”

- Rosalie Bertell, Ph.D, GNSH

HEALTH AND ENVIRONMENTAL DAMAGE

When a DU shell hits a hard target such as a tank or building, it burns and produces a tiny ceramic dust that can be inhaled. These particles can remain in the environment for many years, travel for miles on air currents, re-suspend into the air when disturbed, and migrate into soil and groundwater. DU particles that are ingested or inhaled can lodge in the lungs, bones, kidneys, and reproductive organs and cause damage through radiation and toxic properties. Studies have linked DU exposure with damage to the kidneys; immune, nervous, respiratory, and reproductive systems; cancer; and genetic mutations.

“People have always assumed low doses are not much of a problem, but they can cause more damage than people think.”

**- Alexandra Miller, U.S.
Armed Forces
Radiobiology Institute**

Research over the past decade has produced increasing evidence that DU can harm humans.

- DU has been found in the urine of Gulf War veterans and Iraqi civilians eight years after exposure. (Rosalie Bertell, Ph.D, GNSH, Gulf War Illness Conference, 1999)
- Animal studies found that DU lodges in high concentrations in a variety of organs; causes changes to the brain; crosses the placenta to the fetus; and is associated with mutations. (U.S. Armed Forces Radiobiology Institute)
- A recent U.S. military study found that DU damages the chromosomes that carry human genes. (U.S. Armed Forces Radiobiology Institute)
- Radioactive and toxic properties of DU appear to reinforce each other, causing more extensive damage than the properties would separately. “You can get more than an eight-fold greater effect that you’d expect,” says DoD scientist Alexandra Miller. (*The Guardian*, April 17, 2003)

DU remains in the environment for many years after testing or combat use and can reach humans through a variety of pathways, including soil, air, drinking water, and food.

- At the former Jefferson Proving Ground in Indiana, DU has entered the food chain and been found in deer, clams, and fish. (Lockheed Analytical Services)
- DU was found in Kosovo over two years after its use there. Researchers found localized DU contamination at 10,000 times normal, found DU contaminated with plutonium, and found evidence of airborne movement of DU dust. (United Nations Environment Programme)
- Investigators found widespread DU contamination in soil, air, and lichen in Serbia and Montenegro over two years after the conflict there. (United Nations Environment Programme)
- DU remains in Bosnia and Herzegovina over seven years after its use. Particles were found suspended in the air inside buildings and in drinking water. (United Nations Environment Programme)

TAKE ACTION

Individuals and organizations around the world are demanding an end to the production, sale, and use of DU weapons. U.S. Representative Jim McDermott recently introduced H.R. 1483, the Depleted Uranium Munitions Study Act of 2003. This bill would require an independent study of the health effects of DU exposure for veterans and their children; a health assessment of people connected to DU production and use; comprehensive environmental study of DU contamination at every site in the U.S. where DU has been produced or used; and cleanup of DU around the country.

FOR MORE INFORMATION

The Military Toxics Project – a non-profit network of communities challenging military environmental contamination – has recently published a sixteen-page fact sheet on DU. We previously published a variety of longer reports on DU, and fact sheets on other topics. Contact us by phone at (207) 783-5091 or by email at mtp@milttoxproj.org if you’d like to receive more information or join our network.

Military Toxics Project

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