There is no treatment for ricin poisoning after it has entered the bloodstream. Victims start to show symptoms within hours to days after exposure, depending on the dosage and route of administration.

- Terrorists have looked at delivering ricin in foods and as a contact poison, although we have no scientific data to indicate that ricin can penetrate intact skin.

Ricin will remain stable in foods as long as they are not heated, and it will have little effect if it is not in a food matrix. Ricin is not detected by usual food inspection procedures.

A variety of radioactive materials are commonly available and could be used in an RDD, including:

- Cesium-137
- Strontium-90
- Cobalt-60

Hospitals, universities, factories, construction companies, and laboratories are possible sources for these radioactive materials.

**Radiological and Nuclear Devices**

**Radiological Dispersal Devices (RDD)**

An RDD is a conventional device that uses radioactive material to cause destruction, contamination, and injury. They are made to look like other devices, such as fireworks, or natural phenomena, such as dust clouds.

- A passive RDD is a system in which unshielded radioactive material is dispersed or placed manually at the target.
- An explosive RDD—often called a “dirty bomb”—is any system that uses the explosive force of detonation to disperse radioactive material. For example, a simple explosive RDD consisting of a lead-shielded container—commonly called a “pig”—and a kilogram of explosive attached could easily fit into a backpack.

- An atmospheric RDD is any system in which radioactive material is converted into a form that is easily transported by air currents.

Use of an RDD by terrorists could result in health, environmental, and economic effects, as well as psychological stress and costs. RDDs are difficult to detect because they can typically be made in a matter of days with a relatively small amount of materials. RDDs are therefore considered a potential weapon of mass destruction.

**Improvised Nuclear Device (IND)**

An IND is intended to cause a yield-producing nuclear explosion. An IND could consist of diverted nuclear weapon components, a modified nuclear weapon, or an indigenous-designed device.

INDs can be categorized into two types: implosion and gun assembled. Unlike RDDs that can be made with almost any radioactive material, INDs require fissile material—highly enriched uranium or plutonium—to produce nuclear yield.

**Online Resources**

For more detailed information on the medical aspects of chemical, biological, and nuclear weapons, visit the following Internet sites:

- Medical Research and Material Command: mrmc-www.army.mil
- Medical Research Institute of Chemical Defense: chemdef.apgea.army.mil
- Medical Research Institute of Infectious Diseases: www.usamriid.army.mil
- US Department of Agriculture: www.usda.gov
- US Department of Transportation: www.dot.gov
- US Department of Commerce: www.commerce.gov
- US Environmental Protection Agency: epa.gov
- US Health and Human Services: www.hhs.gov
- World Health Organization: www.who.int
- Food and Drug Administration: www.fda.gov
- World Nuclear Association: www.world-nuclear.org
- International Atomic Energy Agency: www.iaea.org
- United Nations Office for Project Services: www.unops.org
- United Nations Office for Disaster Risk Reduction: www.emergency.un.org

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