



## FACT SHEET

### Facts About DTPA

Diethylenetriaminepentaacetate (DTPA) can remove certain radioactive materials from people's bodies, but it must be taken under the guidance of the Radiation Emergency Assistance Center/Training Site (REAC/TS) of the Oak Ridge Institute.

People may become internally contaminated (inside their bodies) with radioactive materials by accidentally ingesting (eating or drinking) or inhaling (breathing) them. The sooner that these materials are removed from the body, the fewer and less severe the health effects of the contamination will be. DTPA currently is available to help remove these materials when doctors have determined that a person is internally contaminated.

#### What DTPA Is

DTPA is a calcium or zinc salt that has been used for more than 40 years to perform medical imaging of the brain, kidneys, and lungs.

#### Use of DTPA to Treat Radioactive Contamination

Since the 1960s, doctors have successfully used DTPA to treat people who have been internally contaminated with certain radioactive materials, such as americium, plutonium, californium, curium, and berkelium. With special permission from the U.S. Food and Drug Administration (FDA), DTPA also may be used to treat people who have been internally contaminated with the following radioactive materials: cerium, yttrium, lanthanum, promethium, scandium, zirconium, and niobium.

#### How DTPA Works

DTPA comes in two forms: calcium (Ca-DTPA) and zinc (Zn-DTPA). Both forms are capable of binding to certain radioactive materials (refer to previous section) and speeding up the release of these materials in the urine, thus reducing the amount of internal contamination.

#### Who Can Take DTPA

People may be prescribed DTPA during an emergency when radioactive materials, such as plutonium or americium, have entered their bodies. Because DTPA is approved only for limited use, it must be taken under the guidance of REAC/TS.

Ca-DTPA is safe for most adults, but it **should not be taken** by people who have kidney disease or bone marrow depression. Also, **Ca-DTPA should not be taken** by children younger than 18 years of age, by pregnant women, or by people who have bone marrow problems. Children and pregnant women who are under a doctor's care can take small doses of Zn-DTPA. **Ca-DTPA and Zn-DTPA should not be used** to treat people who are internally contaminated with the radioactive materials uranium or neptunium.

#### Side effects of DTPA

Most DTPA is excreted (released) in the urine within 12 hours after it is given, so it does not build up in the body or cause long-term health effects. Side effects of treatment with DTPA can include nausea, vomiting, diarrhea, chills, fever, itching skin, and muscle cramps, but these symptoms decrease between treatments. Also, although DTPA increases the loss of the mineral zinc from the body, zinc supplements can be taken to offset this loss.

## **Facts About DTPA**

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### **How DTPA is Given**

DTPA can be injected into a vein in the arm over a 2-hour period in a slow drip of liquid from a bag or over a 3- to 5-minute period using a syringe. When neither of these methods is possible, DTPA can be injected into the muscle. However, injecting DTPA into muscle causes significant pain in the area of the injection.

### **What the Treatment Plan Is**

Because Ca-DTPA causes the body to lose some necessary minerals, such as zinc and magnesium, people usually are given Ca-DTPA only during the first several days of the treatment. During these first several days, doctors collect urine and blood samples from the people who are undergoing treatment. The urine and blood samples provide information about levels of radioactive materials in the body. Zn-DTPA is used after the first several days, because it does not cause the body to lose minerals as quickly.

DTPA may need to be administered as often as 5 days a week for a period of several years to ensure that the body excretes as much radioactive material as possible.

### **Where You Can Get DTPA**

DTPA for the treatment of internal radioactive contamination is not routinely available. When approved for use by REAC/TS, it is shipped to a doctor who will administer it.

### **Where You Can Get More Information**

More detailed information on DTPA can be found at the REAC/TS web sites, [www.orau.gov/reacts/zinc.htm](http://www.orau.gov/reacts/zinc.htm) and [www.orau.gov/reacts/calcium.htm](http://www.orau.gov/reacts/calcium.htm). The FDA web site [www.fda.gov/cder/drug/infopage/DTPA/default.htm](http://www.fda.gov/cder/drug/infopage/DTPA/default.htm) also offers information.

You can also call the CDC Public Response line at 1-800-311-3435 or visit the web site at [www.cdc.gov/netinfo.htm](http://www.cdc.gov/netinfo.htm) to request more information.

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For more information, visit [www.bt.cdc.gov/radiation](http://www.bt.cdc.gov/radiation), or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español), or (866) 874-2646 (TTY)

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