


**YOU CANNOT  
SEE IT,  
SMELL IT,  
FEEL IT OR  
TASTE IT** 

**CECURUS**

## **A Terrorist's Weapon of Choice - Why the "Dirty Bomb" is So Dirty**

Since 9/11, a bit of a pall continues to hang over the U.S. for many people. They wonder "with what, where and when will terrorists strike again?"

While the "where" and "when" seem to be a matter of anyone's guess, there appears to be a fair amount of consensus among experts that a dirty bomb is a potential answer as to "what."

People often mistakenly link the impact of a dirty bomb with the horrific destruction of a nuclear bomb. But, in reality, they are not even close.

### **A Weapon of Mass Disruption**

"A dirty bomb is what we call a radiological dispersal device, or RDD," said Dr. David A. Edwards, Assistant Professor of Environmental and Emergency Management at Arizona State University. "An RDD has three components: (1) a detonator, (2) an explosive, and (3) radioactive powder or pellets. The latter could potentially include, for example, Cesium-137 materials stolen from controlled hospital devices."

The dirty bomb is thought to be a terrorist's method of choice because:

- It is relatively easy to build and transport
- The ensuing terror and panic that would likely follow a dirty bomb explosion would cause more disruption than the explosion itself.
- The immediate area around the detonation site would be restricted in terms of civilian access and would likely require extensive clean-up costing millions or perhaps billions of dollars, causing severe disruption to commerce and people's lives for many years. ([Link here for a detailed risk and economic analysis of a dirty bomb attack.](#))

That's why dirty bombs are often referred to as a "weapon of mass *disruption*."

According to Edwards, "When the explosive in an RDD is detonated, radioactive particles are thrown out into the surrounding environment. Depending on the type and size of the device and the

weather, these radioactive particles can be transported great distances, up to miles away. Inhaling even small particles can be highly damaging to one's long-term health. "

### **Preparation is Key to Minimizing Your Exposure and Risk**

"There are many variables impacting what kind of affect the dispersed radioactive material will have," said Walton W. McCarthy, M.E., author of the 2002 book *"PRINCIPLES OF PROTECTION", The US Handbook of NBC (Nuclear, Biological, Chemical) Weapon Fundamentals and Shelter Engineering Design Standards*. "Due to many factors, evacuation will likely not be an option, but with proper precautions, the risk of bodily harm can be greatly minimized or likely eliminated altogether."

McCarthy said, "The keys to ensuring your safety are to reduce your risk of exposure and avoid being thrust into the midst of a potentially panicked populace."

So, first things first: minimizing exposure. While reviewing the information that follows, keep in mind a detonation could take place in a city where you and/or your family are visiting, during the school day or while everyone is out there battling traffic.

The [Centers for Disease Control](#) (CDC) suggest that:

#### ***If you are outside and close to the incident***

- Cover your nose and mouth with a cloth to reduce the risk of breathing in radioactive dust or smoke.
- Don't touch objects thrown off by an explosion—they might be radioactive.
- Quickly go into a building where the walls and windows have not been broken. This area will shield you from radiation that might be outside.
- Once you are inside, take off your outer layer of clothing and seal it in a plastic bag if available. Put the cloth you used to cover your mouth in the bag, too. Removing outer clothes may get rid of up to 90% of radioactive dust.
- Put the plastic bag where others will not touch it and keep it until authorities tell you what to do with it.
- Shower or wash with soap and water. Be sure to wash your hair. Washing will remove any remaining dust.
- Tune to the local radio or television news for more instructions.

#### ***If you are inside and close to the incident***

- If the walls and windows of the building are not broken, stay in the building and do not leave.
- To keep radioactive dust or powder from getting inside, shut all windows, outside doors, and fireplace dampers. Turn off fans and heating and air-conditioning systems that bring in air from the outside. It is not necessary to put duct tape or plastic around doors or windows.
- If the walls and windows of the building are broken, go to an interior room and do not leave. If the building has been heavily damaged, quickly go into a building where the walls and windows have not been broken. If you must go outside, be sure to cover your nose and mouth with a cloth. Once you are inside, take off your outer layer of clothing and seal it in a plastic bag if available. Store the bag where others will not touch it.

- Shower or wash with soap and water, removing any remaining dust. Be sure to wash your hair.
- Tune to local radio or television news for more instructions.

***If you are in a car when the incident happens***

- Close the windows and turn off the air conditioner, heater, and vents.
- Cover your nose and mouth with a cloth to avoid breathing radioactive dust or smoke.
- If you are close to your home, office, or a public building, go there immediately and go inside quickly.
- If you cannot get to your home or another building safely, pull over to the side of the road and stop in the safest place possible. If it is a hot or sunny day, try to stop under a bridge or in a shady spot.
- Turn off the engine and listen to the radio for instructions.
- Stay in the car until you are told it is safe to get back on the road.

**Shelters Provide the Ultimate Protection**

As you can see, everybody knowing what to do can be very important, because shortly thereafter, a whole new set of questions begin to arise. Can I drink the water? What food is safe to eat? If the event occurs in the middle of winter or summer, what are the problems of being in a room without ventilation?

Having stores of food and water can go a long way in this type of situation. Stored provisions would not only be safe to consume but would enable everyone to be self-sustaining for a considerable amount of time while the “disruptions” caused by the detonation subside.

Another level of preparation is shelters designed to protect people from this and other types of catastrophic events.

“You cannot see, smell, feel or taste radiation,” said McCarthy, who is also president of RADIUS ENGINEERING, a manufacturer of protective shelters. “A person can never be really sure how safe their surrounding environment is from radiation until officials use special equipment to assess the area and its life support infrastructure. And that”, he noted, “could take quite a bit of time.”

[RADIUS ENGINEERING's](#) shelters provide their own air filtration system, power plant, water supply and communications to keep people out of harm's way for extended periods of time.

McCarthy said that a properly stocked shelter can provide a family with a comfortable and safe living environment for months at a time.

You are probably sensing a common theme for protection against a dirty bomb: Be prepared. As individuals, there may not be a lot we can do to prevent events such as the detonation of a dirty bomb, but there are an extraordinary number of things we can do in advance to minimize how those events will affect ourselves and our families.

There's much to be said for looking ahead and being prepared rather than someday looking back and wishing you had.