

# Radiation Fact Sheet

## Common Exposures to Radiation

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[www.scdhec.gov](http://www.scdhec.gov)

### Common Exposures to Radiation

Gastrointestinal series (upper & lower).....	<b>1,400 millirem per exam</b>
Cigarette Smoking (average – several packs/day).....	<b>1,300 millirem per exam</b>
CT Scan (head & body).....	<b>1,100 millirem per exam</b>
Nuclear medicine examination of the brain.....	<b>650 millirem per exam</b>
<b>Average annual background dose to humans</b> (simply existing on Earth).....	<b>620 millirem per exam</b>
Nuclear medicine examination of the thyroid.....	<b>509 millirem per exam</b>
Barium Enema.....	<b>405 millirem per exam</b>
Upper gastrointestinal tract series.....	<b>245 millirem per exam</b>
Radon in average household.....	<b>200 millirem per year</b>
Dose to members of airline crews.....	<b>170 millirem per year</b>
Nuclear medicine examination of the lung.....	<b>150 millirem per exam</b>
Computerized tomography of the head.....	<b>110 millirem per exam</b>
Plutonium-powered pacemaker.....	<b>100 millirem per year</b>
Natural radioactivity in your body (120,000 pCi/L).....	<b>40 millirem per year</b>
Cosmic Radiation.....	<b>31 millirem per year</b>
Mammogram.....	<b>30 millirem per year</b>
Smoking Cigarettes (1 cigarette/day).....	<b>15 to 20 millirem per year</b>
Consumer products.....	<b>11 millirem per year</b>
Using natural gas in the home.....	<b>9 millirem per year</b>
To spouses of recipients of certain cardiac pacemakers.....	<b>7.5 millirem per year</b>
Chest X-ray.....	<b>6-8 millirem per exam</b>
Foods grown on lands (where phosphate fertilizers are used).....	<b>5 millirem per year</b>
Road construction material.....	<b>4 millirem per year</b>
Dental X-ray.....	<b>3 millirem per exam</b>
The use of gas mantles.....	<b>2 millirem per year</b>
Domestic water supplies.....	<b>1 to 6 millirem per year</b>
Living near a nuclear power station.....	<b>1 millirem per year</b>
Air travel (every 2006 miles).....	<b>1 millirem per trip</b>
(Cross-country flight).....	<b>2 millirem per trip</b>
Television receivers.....	<b>1 millirem per year</b>
Eating ½ lb. of Brazil nuts.....	<b>0.5 millirem per bag</b>
Drinking a quart of Gatorade each week.....	<b>0.2 millirem per year</b>
Sleeping with one's spouse (or "significant other").....	<b>0.1 millirem per year</b>

**Sources:** U.S. Department of Energy (DOE) – Oak Ridge  
2004 U.S. DOE Annual Site Environmental Report Summary

Millirem is an extremely small measure of energy; much like millimeter is an extremely small measure of length. These amounts are well within what is acceptable and not harmful to health or life.

Even sitting in the office, walking through the grocery store or eating certain foods will increase your radiation dose (how much radiation you encounter):

Compact fluorescent light bulb (Krypton-85)	<b>15,000 pCi per year</b>
Salt Substitute	<b>2,400 pCi per teaspoon</b>
Airborne radioactivity from nuclear power plants	<b>550 pCi per year</b>
Common lawn & garden fertilizer	<b>30 to 50 pCi per 50-lb. bag</b>
Loose leaf of spinach	<b>8 pCi per salad</b>
Bananas	<b>4 pCi per banana</b>
Waterborne radioactivity	<b>0.6 pCi per year</b>

**Sources:** *KAPL Analysis, 2000*

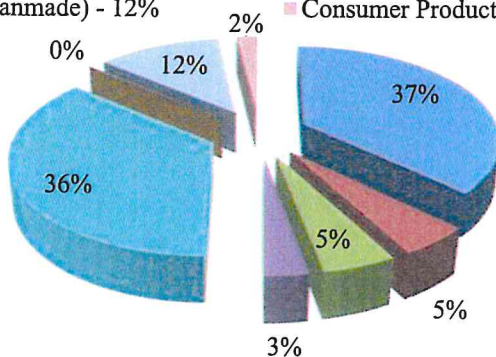
*National Council on Radiation Protection and Measures Report No.160*

*U.S. NRC Report NUREG/CR-2907, Vol. 14, Annual Report 1993*

A significant amount of radiation comes to us from the sun and from cosmic radiation – so that people at higher elevations like Colorado and adjacent Rocky Mountain States receive more than those who live at sea level. However, a lot of radiation also comes from the soil and rocks around us. Granite and marble have background levels of radioactivity. A relatively small additional amount comes from our man-made technology (non-medical).

### Sources of Radiation Exposure in the United States

- Radon and Thoron (natural, background) - 37%
- Cosmic (space, background) - 5%
- Internal (background) - 5%
- Terrestrial (soil, background) - 3%
- Medical Procedures (manmade) - 36%
- Industrial and Occupational (manmade) - 0.1%
- Nuclear Medicine (manmade) - 12%
- Consumer Products (manmade) - 2%



**Source:** *National Council on Radiation Protection and Measures Report No.160*

<http://ncrponline.org/publications/reports/ncrp-report-160/>

#### Is a radiation dose of 620 millirem (or 0.62 Rem) in a year harmful?

No. No effects have ever been observed at doses less than 5,000 millirem (5 Rem) delivered over a one-year period. In fact, effects seen when humans are exposed to 100,000 millirem (100 Rem) over a short time period are temporary and reversible. It takes a short-term dose of greater than 500,000 millirem (500 Rem) to cause a fatality. For additional information on radiation visit: [www.scdhec.gov/radiation](http://www.scdhec.gov/radiation)

For more information on radiation and DHEC's role in response, contact:

**Mary Nguyen Bright**

Public Information Director

**S.C. Department of Health and Environmental Control**

Nuclear Response and Emergency Environmental Surveillance

301 Gervais Street, Columbia, South Carolina 29201

[brightmn@dhec.sc.gov](mailto:brightmn@dhec.sc.gov)

(803) 896-4099 or 1-844-723-7377