



# OHIO BRINE TASK FORCE



**“We are concerned about the long-term impacts on health and the environment”**

## **RADIUM-226 & 228**

### **What is RADIUM-226 & 228?**

Radium is a radioactive metal found in nature. Radium forms when uranium and thorium break down in rocks and soil. Radium undergoes radioactive decay which releases, alpha, beta and gamma ray particles. Beta particles can penetrate the skin, while gamma radiation can go through the body.

### **Where can radium-226 & 228 be found and how are they used?**

Radium is present at low levels in rocks and soil. It can also be found in air. High levels of radium are found in water, in some parts of the U.S. Radium in the soil may be taken in by plants and can also build up in fish life found in water.

### **How can people be exposed to radium-226 & 228?**

**Breathing** it in the air. When burning coal or other fuels, radium can enter the air and people can be exposed to it.

**Drinking** it in water. Radium in drinking water is usually low. Higher levels can be found in contaminated water sources.

**Touching** it at worksites. High exposure is present at radioactive waste disposal sites, rock and uranium mining sites.

### **How does radium-226 & 228 affect the body?**

After breathing radium will slowly enter the blood and be taken to all parts of the body. If ingested, some will enter the blood and be taken to all parts of the body, mostly to the bones. After exposure, very small amounts will leave the body every day through urine and waste matter.

### **How can radium-226 & 228 affect my health?**

Exposure to higher levels of radium over a long period can lead to death and other severe health problems. High levels of radium can cause cancer (bone, liver and breast cancer), anemia, fractured teeth and cavities, and cataracts.

### **How is radium 226- 228 exposure treated?**

There are no treatments for radium poisoning. Decontaminating the exposed person and clothing is essential to remove radiation. If inhaled or ingested, special agents will help remove the radiation from the bloodstream.

### **What should I do if exposed to radium 226- and 228?**

All work sites and medical facilities should have procedures to handle radiation exposure. If exposed, decontaminate immediately. Emergency workers should wear proper gear. Call your emergency services for local instruction.

### **What factors limit use or exposure to radium 226- and 228?**

Test your home for radon. Radon is produced when radium decays. Hazardous waste sites may contain radium. If you live near one, do not touch soil that contacted radium. Do not breathe dust that is contaminated by radium.

### **Is there a test to show exposure to radium 226 and 228?**

A urine test can show if you were exposed to radioactivity. There is also a test to measure the amount of radon. Another high exposure test can measure the total amount of radioactivity in the body. Tests cannot determine effects of exposure.

### **Technical information for radium 226- and 228**

CAS Number: 7440-14-4

Chemical Formula: Ra-226 or  $^{226}\text{Ra}$  and Ra-228 or  $^{228}\text{Ra}$

Carcinogenicity (EPA): Known carcinogen.

MCL (Drinking Water): 5 picocuries per liter (5 pCi/L)

OSHA Standards: No standards specifically for radium.

NIOSH: No standards specifically for radium.

Taken in part from Delaware Health and Social Services. <https://dhss.delaware.gov/dhss/dph/files/radiumfaq.pdf>

### **References and Sources**

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