

[https://mde.maryland.gov/programs/Water/water\\_supply/Pages/radium.aspx](https://mde.maryland.gov/programs/Water/water_supply/Pages/radium.aspx)

## **What are the health risks from radium ingestion?**

Radium like other elements of the earth's crust naturally enters the body through drinking water and food. In the body, radium acts much like calcium. When swallowed, a small amount of radium attaches to bones, but most of the radium will leave the body naturally in feces or urine. Studies of workers who ingested high levels of radium from occupational activities have shown it to cause bone cancer.

For radium 226 and 228, the U.S. EPA estimates that the additional lifetime risks associated with drinking water containing 5pCi/l is about 1 in 10,000. This means that if 10,000 people were to consume two liters of this water per day for 50 years, one additional fatal cancer would be estimated among the 10,000 exposed individuals. According to the EPA model, as the level of radium increases, so does the risk. For example, increasing the concentration of radium from 5 to 10 pCi/l would increase the lifetime risk from approximately one to two additional deaths per 10,000 individuals.

The risk associated with consuming water containing 5 pCi/l of radium for one year is comparable to one chest X-ray, or the cosmic radiation received during five or fewer round trip flights from Maryland to California. The risks to health from radium in water do not represent a health emergency and radium can be readily controlled through using treatment or finding a supply with lower levels.