



RADON: AN INVISIBLE DANGER AT HOME

“ The World Health Organization has determined that Radon gas is the **second leading cause of lung cancer** after tobacco smoke ”



Average Radon concentration (Bq/m ³)	Cancer risk for a non-smoker	Cancer risk for a smoker
0	1%	25%
600	2%	50%

“ In Italy, according to local health authorities, every year there are more than **3000 deaths** from lung cancer caused by Radon ”



WHAT IS RADON?

Do you know what Radon is? Don't you?! Don't worry, most people ignore the existence of this substance.

Radon is a **radioactive gas** that is **odorless** and **colorless** and it often accumulates in our houses.



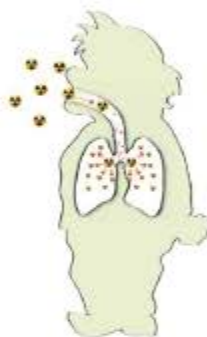
The Radon is **present** almost **everywhere** in soil and rocks, it is produced by the uranium's radioactive decay. This gas fills the air from the ground and from the water. In a closed environment, Radon can accumulate and reach hazardous concentrations.

WHY IT IS HARMFUL TO YOUR HEALTH?

Its **decay products** may be deposited on the walls of the bronchus and lungs and within about half an hour they decay by emitting ionizing radiation that can **damage** the DNA of cells.

Most DNA damages is repaired by specific cellular mechanisms, but some of them may eventually develop into a lung tumor. Epidemiological studies showed that:

- Lung tumors are rare until the age of 45 years;
- The risk of lung cancer increases: proportionally to the increase of the concentration of Radon inhaled and duration of exposure, if the exposure is accompanied by the synergic action of other carcinogenic substances (in particular those contained in cigarette smoke).



MAY MY HOUSE BE AT RISK?

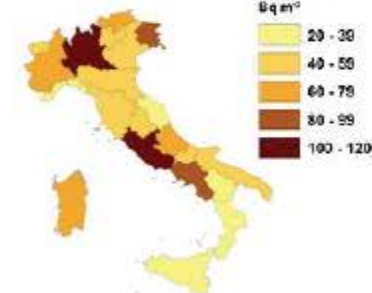


This **radioactive gas** is **everywhere**, so, we should measure the concentration of radon, especially where the risk is higher: in basements and old buildings.

HOW CAN I MEASURE THE RADON IN MY HOUSE?

Knowledge of the radon's concentration in a house allows you to evaluate whether to undertake remedial actions.

The measurement can be carried out in a simple, reliable and inexpensive way through small devices (**dosimeters**) sensitive to radiations. Dosimeters have to be placed in the areas to be monitored for few months and then they will be analyzed by a certified laboratory.



HOW TO PROTECT YOURSELF FROM RADON?



In general we can distinguish between the **remediation** of radon in an existing house and the **prevention** in a new building, however, it is impossible to completely eliminate this problem.



In the case of restoration, the countermeasures should be adapted to an existing structure, as a consequence, the results are not always satisfactory. The main abatement actions are:

- **Ventilate closed environments**, in particular, the basements (It is considered a provisional measure because of the significant loss of heat).
- **Seal the routes of entry**.
- **Ventilate the basement or the crawl space by means of active methods** (fans).

For a smoker, instead, the most effective action is to quit smoking: in this way lung cancer risks due to radon and its synergy with cigarette smoke are reduced.

