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www.who.int1211 GENEVA 27 SWITZERLAND - TELEPHONE: (41) 22.791.21.11 - FAX: (41) 22.791.31.11 - E-MAIL: inf@who.int**Note for the media WHO/15
21 June 2005**

WHO LAUNCHES PROJECT TO MINIMIZE RISKS OF RADON

Geneva -- In an effort to reduce the rate of lung cancer around the world, the World Health Organization (WHO) is launching the International Radon Project to help countries reduce the health risks associated with radon gas. The Project will identify effective strategies for reducing the health impact of radon, promote sound policy options for countries and increase public and political awareness about the consequences of exposure to radon.

Radon is a natural radioactive gas that emanates from the ground into the air. Radon gas in the air is present worldwide, its concentration depending on the highly variable uranium content of the soil. It is the second most important risk factor for lung cancer, causing between 6 and 15% of all cases. Yet, there is little public awareness of radon as a threat to human health, that can be mitigated with relatively simple measures.

"Radon poses an easily reducible health risk to populations all over the world, but has not up to now received widespread attention," said Dr Mike Repacholi, coordinator of WHO's Radiation and Environmental Health Unit. "Radon is all around us. Radon in our homes is the main source of exposure to ionizing radiation, and accounts for 50% of the public's exposure to naturally-occurring sources of radiation in many countries."

Although the average exposure to radon varies enormously, recent studies have shown that, when exposed to a radon concentration of 100 Bq (Bequerels)/m³, a non-smoker's risk of lung cancer by age 75 years increases by 1 in a 1000 compared to non-exposed persons. Among those who smoke and are exposed to the same radon concentration, the risk of lung cancer is about 25 times greater. On a global level, tens of thousands of lung cancer deaths annually can be attributed to radon. Most of the radon-induced lung cancer cases occur among smokers.

Radon is a chemically inert, naturally occurring radioactive gas without odour, colour or taste. It is produced from radium in the decay chain of uranium, an element found in varying amounts in all rocks and soil. Radon gas escapes easily from the ground into the air and emits heavily ionizing radiation called alpha particles. These particles are electrically charged and attach to aerosols, dust and other particles in the air we breathe. As a result, radon progeny may be deposited on the cells lining the airways where the alpha particles can damage the DNA and potentially cause lung cancer.

Due to dilution in the air, outdoor radon levels are usually very low. Radon can also be found in drinking water, the concentration depending on the water source, and this can sometimes present

Note for the media WHO/15

Page 2

a hazard. Radon levels are higher indoors, and much higher radon concentrations can be found in places such as mines, caves and water treatment facilities, and an increased lung cancer risk has been found in uranium miners. For the average citizen, by far the greatest exposure to radon comes in the home.

The concentration of radon in a home depends on the amount of uranium producing the radon in the underlying rocks and soils as well as the routes available for its passage into the home and the rate of exchange between indoor and outdoor air. Radon gas enters houses through openings such as cracks at concrete floor-wall junctions, gaps in the floor, small pores in hollow-block walls, and also sumps and drains. Consequently, radon levels are usually higher in basements, cellars or other structural areas in contact with soil, and the radon concentrations in houses directly adjacent to each other can be very different.

Radon exposure in homes can be easily mitigated during the construction of new homes, but existing buildings can also be protected from radon. Most measures such as increasing under-floor ventilation and sealing cracks and gaps in the floor require simple alterations to the building, but other approaches may have to be taken in areas with high radon concentrations. Overall, reducing radon exposure is an important contribution to the goal of good quality indoor air.

The project is initially expected to run for three years (2005-2007). As a first step, the WHO International Radon Project is setting up a global network of radon scientists, regulators and policy makers to collaborate in the project.

Coordination will be provided by WHO. Working groups will focus on risk assessment, exposure guidelines, measurement and mitigation of radon levels, investigations of cost-effectiveness and risk communication. WHO guidelines based on this work will help national authorities to develop, promote and strengthen activities at country or regional level. The WHO fact sheets produced in the course of the Project will be a central communication tool to increase public awareness about radon. The WHO International Radon Project also aims to create a global radon database and provide improved global estimates of the disease burden associated with radon worldwide. Overall, together with global tobacco control activities and initiatives on healthy indoor air, the Project is expected to be a key step towards reducing lung cancer risk worldwide.

For further information please refer to the WHO fact sheet and to www.who.int/ionizing_radiation/

More information about radon in water can be found at: http://www.who.int/water_sanitation_health/dwq/gdwq3_9.pdf

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All WHO Press Releases, Fact Sheets and Features as well as other information on this subject can be obtained on the Internet on the WHO home page www.who.int