The World Health Organization

The Global Guardian of Public Health

- Established on **7 April 1948**
- **Function**: act as the UN directing and coordinating authority on international health work
- **Objective**: attainment by all peoples of the highest possible level of health
Health in all policies
Goal 6: Ensure availability and sustainable management of water and sanitation for all
Burden of disease from environmental risks

23% of all global deaths are linked to the environment. That's roughly 12.6 million deaths a year.

HOW THE ENVIRONMENT IMPACTS OUR HEALTH

People are exposed to risk factors in their homes, work places and communities through:

- Air pollution including indoors and outdoors
- Inadequate water, sanitation and hygiene
- Chemicals and biological agents
- Radiation ultraviolet and ionizing
- Community noise
- Occupational risks

World Health Organization
#EnvironmentalHealth
A flagship normative publication of WHO

“Immediate and wide recognition as essential aids to the improvement of water quality and treatment”

Demand for the document is among the highest and most sustained of all WHO publications
# WHO Guidelines for Drinking-water Quality

| **Aim** | Protection of human health  
| | Support setting of national standards and regulations |
| **Target Audience** | Regulators + (water suppliers, practitioners . . .) |
| **Approach** | Best available evidence - science and practice  
| | Risk-benefit philosophy (advisory in nature)  
| | Local adaptation considering overall health protection strategies (social, cultural, economic and environmental context)  
| | Preventive incorporating multiple barriers  
| | Incremental improvement |
Chapter 9: Radioactivity

- Criteria with which to assess safety of drinking-water with respect to radionuclide content
- Methodology to assess potential health risks (*screening approach based on individual dose criterion of 0.1 mSv/year*)
- Guidance on actions to reduce radionuclides in drinking-water and monitoring considerations (*separate guidance for radon*)
- Information on analytical methods

For situations where there could be ingestion of radionuclides in drinking-water over extended periods of time (years – lifetime)
Chapter 9: Radioactivity

Radon

• Radon dissolved in water can be released and increase radon concentration in indoor air: inhalation is the main route of entry into the body

• The WHO GDWQ do not provide a guidance level for radon and recommend to manage radon concentration in indoor air rather than in drinking-water

• Where remedial measures are in place to manage radon levels in indoor air, it is advisable to measure radon in drinking-water if the drinking-water supply comes from a nearby groundwater source
Guidance to support implementation of Chapter 9 of the GDWQ

PURPOSE
Provide practical guidance to support interpretation and implementation of the GDWQ in order to take appropriate action

AUDIENCE
Organizations that set or enforce standards related to, or manage risks from, radioactivity in drinking-water

Format
Written in the style of Q&As to enable easier reading of the issues of interest
Content overview

- **Chapter 1**: background information, information on management of radionuclides in non-emergency situations.

- **Chapter 2**: information on management of radionuclides in emergency situations.

- **Chapter 3**: supporting information common to both non-emergency and emergency situations, including information on water treatment and analytical methods.

- **Chapter 4**: case studies

- **Annex**: information to support calculation of doses and guidance levels for specific non-emergency situations.
1.6 Radon in drinking-water

1.6.1 How does radon get into drinking-water?

1.6.2 Do national standards for radon in drinking-water need to be established?

1.6.3 At what points in the water supply chain should measurements of radon in drinking-water be made?

1.6.4 What methods can be used for sampling and measuring radon in drinking-water supplies?

1.6.5 How can radon in drinking-water be managed when radon concentrations in the source water are high?
Occupational exposures

Other related new WHO publications

2018

DEVELOPING DRINKING-WATER QUALITY REGULATIONS AND STANDARDS
General guidance with a special focus on countries with limited resources

2018

WHO HOUSING AND HEALTH GUIDELINES

Just published!
27 November 2018
The Global Guardian of Public Health

E. van Deventer
vandeventere@who.int

Radiation Programme
Department of Public Health, Environmental and Social Determinants of Health
Geneva, Switzerland