

## WORKING LANGUAGE

The working language of the Forum will be English.

## REGISTRATION FEE

No registration fee is charged to participants.

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## CONFERENCE WEB PAGE

Detailed information on administrative procedures including participation and registration is provided on the Forum web site:

<http://www-pub.iaea.org/iaeameetings/50817/Scientific-Forum>

International Atomic Energy Agency  
Scientific Forum

# Nuclear Techniques in Human Health

*Prevention*

*Diagnosis*

*Treatment*



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Vienna International Centre  
Board Room D, C Building, 4th Floor



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IAEA 60 Years  
Atoms for Peace and Development

## BACKGROUND

Nuclear techniques play a vital role in the prevention, detection, diagnosis and treatment of major diseases, including cancer and cardiovascular conditions. These technologies are becoming increasingly relevant considering that globally, cancer kills more than 8.2 million people every year, and cardiovascular diseases remain the number one cause of death worldwide. Nuclear technology can also contribute to better nutrition, which is the foundation of good health. This year's Scientific Forum will highlight how nuclear science can improve people's health and well-being, and support countries' efforts to achieve Sustainable Development Goal 3, namely to ensure healthy lives and promote well-being for all at all ages.

The two-day forum will be opened by IAEA Director General Yukiya Amano along with high-level keynote speakers and will consist of five sessions. Leading scientists and experts from around the world will give examples of the latest trends in radiation medicine, and present case studies showcasing good practices to increase access to nuclear science for human health.

## SESSION 1

### PREVENTING DISEASE THROUGH BETTER NUTRITION

The first session will highlight the vital role that nutrition plays in preventing non-communicable diseases (NCDs). In a world where undernutrition and obesity coexist, it is important to define targeted actions that combat all forms of malnutrition. Through the use of nuclear and isotopic techniques, health professionals are able to develop and evaluate actions to address undernutrition, obesity and the related risks of NCDs simultaneously. In addition, these techniques can help understand the impact of environmental factors on child growth and human health. The session will also highlight new trends in medical imaging to better assess nutritional status.

## SESSION 2

### LOOKING BEYOND THE VISIBLE: NEW FRONTIERS IN DIAGNOSTIC TECHNIQUES

The second session will present cutting-edge clinical applications and technologies, including the use of nuclear techniques to identify disease in its early stages, and to assess the location and spread of disease in the body, as well as patients' response to medical therapy. The integral role of nuclear technology in the medical diagnosis of NCDs such as cancer and cardiovascular, infectious and neurological diseases, including dementia, will be discussed. Furthermore, the session will illustrate how technologies have evolved to allow for personalized health care through medical imaging.

## SESSION 3

### ADDRESSING IMPLEMENTATION CHALLENGES IN COUNTRIES

The third session will emphasize the various challenges that countries face in ensuring the safe use of nuclear medicine for the early detection, diagnosis and treatment of diseases. The impact of new medical technologies on health expenditure budgets will also be considered, as will countries' different needs in this area. Additionally, the different levels of diagnostic services available to countries — from basic infrastructure to intermediate and advanced services — will be explored. This session will also highlight the use of data to support decision-making in cancer care.

## SESSION 4

### RADIOTHERAPY: SAVING AND IMPROVING QUALITY OF LIFE OF CANCER PATIENTS THROUGH NEW APPROACHES

The fourth session will explore the use of radiotherapy to treat cancer, highlighting the importance of a multidisciplinary approach for optimal patient management. It will also look at the future of radiotherapy, including personalized treatment and the latest technological innovations to improve patient care.

## SESSION 5

### ENSURING QUALITY AND SAFETY

The fifth session will focus on quality and safety aspects in all disciplines of radiation medicine, in order to ensure that patients get the best possible outcome. Issues such as the need for peer reviews, clinical audits and quantification of performance will be explored. This session will also review the requirements for quality and safety in imaging and therapy, and the challenges that countries may face in implementing these, as well as examples of successful IAEA projects to assist in this respect.

## CLOSING SESSION

IAEA Director General Yukiya Amano will lead the final session of the Forum with high-level panelists to underline findings and draw conclusions for Member States and the IAEA.

