

Better Human Health

Making a Difference with Nuclear Technology



IAEA
International Atomic Energy Agency

In health, nuclear techniques are used to diagnose and treat cancer, cardiovascular and other non-communicable diseases, which are increasing rapidly in developing countries. Nuclear techniques also help develop and monitor interventions to combat child malnutrition.



Non-communicable diseases such as cancer, diabetes and cardiovascular and respiratory diseases, will account for almost 70% of all deaths by 2030.

Eight out of ten fatal cardiac cases occur in developing countries.

Radiotherapy is a highly effective cancer treatment, but over 25 countries have no available radiotherapy units. In a further 20 low and middle income countries, more than five million people must rely on the services of a single unit.

Using a radiotherapy machine that is not properly calibrated can lead to incorrect treatment of hundreds of patients in a year.

Every day, some 26 000 children under the age of five die largely due to preventable causes, such as inadequate nutrition and medical care. Most cases of childhood mortality are found in low and middle income countries, where death rates for those under five can be up to 45 times higher than rates found in some high income countries.

Malnutrition is the world's single largest contributor to disease: 3.5 million children die each year from undernutrition, while overnutrition, a risk factor for diabetes and cardiovascular disease, affects 43 million children.

About 20% of deaths among children under five could be avoided if World Health Organization (WHO) feeding guidelines were followed, which includes breastfeeding for six months followed by appropriate complementary feeding.

The IAEA promotes safe and effective radiotherapy services and provides expertise in radiation oncology.

The IAEA works to improve cancer outcomes in low and middle income countries by providing assistance in modernizing and establishing radiotherapy facilities, brachytherapy services and education programmes.

To expand the accessibility of radiotherapy services, the IAEA works with United Nations organizations, hospitals, governments and research institutions, improving cancer control in low and middle income countries.

By facilitating appropriate human resource capacity building, the IAEA helps to establish new, and improve existing, nuclear medicine facilities. The IAEA's comprehensive quality assurance programmes in radiation medicine ensure that radiation therapy, diagnostic radiology and nuclear medicine are delivered safely and effectively.

Stable isotope techniques are used to develop and evaluate nutrition interventions that address childhood malnutrition.

The IAEA supports the use of stable isotope techniques to monitor and evaluate breastfeeding counselling programmes in support of WHO recommendations.

The IAEA helps promote the introduction of diagnostic nuclear techniques for early diagnosis and treatment of non communicable diseases.

The IAEA develops and transfers nuclear technology to Member States through coordinated research activities, the sharing of good practices and technical cooperation projects that support sustainable socioeconomic development. For more information, please visit www.iaea.org, www.facebook.com/iaeaorg or follow @iaeaorg on Twitter.