

IAEA NUTRITION PROGRAMMES FEED GLOBAL DEVELOPMENT

Najat Mokhtar, Head of the IAEA's Nutritional and Health-Related Environmental Studies Section, and her colleague Christine Slater, a nutrition specialist in the same Section, explain to writer Sasha Henriques why nutrition is such a critical issue for the Agency.

Q: Why is the IAEA involved in nutrition?

As an organization, the IAEA has a statutory requirement to “accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world.”

Good nutrition is the cornerstone of good health and the development of nations. That's why the IAEA is involved in nutrition.

Nutrition is a holistic issue. Poor nutrition is one of the leading causes of disease and death. It affects brain development and the ability to learn, resulting in scholastic underperformance. Poor nutrition in infancy can lead to diseases like diabetes, hypertension, and cardiovascular disease in adulthood.

If we don't tackle nutrition from conception to two years of age, when the foundation is being set for the rest of a person's life, it's often impossible to make a difference later on.

Q: At first glance, nuclear and nutrition don't fit together. What's the connection?

The IAEA's Member States use nuclear methods to move their nutrition programmes forward. These nuclear techniques include the use of stable isotopes (which have no radioactivity) to better understand how nutrients are absorbed, utilized, or stored in the body. These very precise and powerful techniques can be safely and non-invasively used on everyone, from babies to the elderly, in order to determine nutritional status, and measure the effectiveness of nutrition programmes.

Nuclear techniques often provide answers that are not available by any other means.

By training Member States in the use of nuclear techniques for nutrition, the IAEA complements the work that these countries are



doing with other international organizations and not-for-profit groups around the world to combat malnutrition in all its forms and to promote health.

Good nutrition in early life is essential for healthy growth. Mother and baby at a health centre in Burkina Faso.

(Photo: N. Mokhtar, IAEA)

Q: Nutrition can seem like a small, niche issue. Why do you think nutrition requires national and international attention?

Nutrition deserves global attention because it has a direct, proven impact on health and on the economic growth of nations. For a country to grow, it needs to have people who are healthy and capable of learning new skills. The population needs to be physically and mentally sound. Poor nutrition affects both the body and the brain.



In many countries in economic transition, obesity and related NCDs have reached epidemic proportions. IAEA is assisting the national authorities in Seychelles to build capacity for the evaluation of an intervention programme for the control and prevention of childhood obesity.

(Photo: N. Mokhtar, IAEA)

Nuclear science provides invaluable data that assist in the formulation of better nutrition intervention strategies.

For example, exclusive breastfeeding in the first six months of a baby's life is proven to be the best nutritional start a mother can give her child. But many mothers don't consider that giving their babies water or a little herbal tea for a stomach upset means that they aren't "exclusively breastfeeding".

Using conventional monitoring methods (like questionnaires), health professionals would be unable to catch such discrepancies. However, the use of stable isotope techniques provides unassailable data about the practice of exclusive breastfeeding, so that policymakers, doctors and nutritionists can change their approach accordingly.

In addition to measuring human milk intake in breastfed infants, nuclear and isotope techniques are also used to assess body composition and energy expenditure; to evaluate the bone health of the elderly; to track how the body takes in, uses, and retains important nutrients such as protein, carbohydrates, fat, vitamins, and minerals; to measure vitamin A reserves; and to measure how well iron and zinc from local foods and diets are utilized by the body.

Q: Does malnutrition go beyond not having enough to eat?

In more prosperous countries and countries in economic transition, an epidemic of

overweight and obesity is emerging. This is a major public health challenge, and people of all ages and backgrounds face this form of malnutrition.

As a consequence, rates of diabetes, cardiovascular disease and other diet-related non-communicable diseases (NCDs) are escalating worldwide.

The costs of NCDs are increasingly a burden in low-income and middle-income countries, affecting people in the prime of their lives and putting more pressure on already over-stretched health systems and government and family budgets. Low- and middle-income countries bear 86% of the burden of premature deaths due to NCDs, resulting in huge economic losses and millions of people trapped in poverty. Most of these premature deaths from NCDs are largely preventable, but require a multisectoral approach to policies that influence risk factors such as unhealthy diet, lack of physical activity and inadequate access to health care.

Overweight and obesity often start early in childhood. Globally, about 43 million children under age five are overweight, according to the World Health Organization's (WHO) 2011 figures. These children are at increased risk of developing NCDs in later life.

Q: What are the global and political implications of focusing or failing to focus on nutrition?

Because malnutrition impedes individuals' ability to lead productive lives, failing to focus on nutrition perpetuates poverty in families, communities and nations.

According to the Scaling Up Nutrition (SUN) Movement, more than 30% of young children worldwide suffer from malnutrition with serious consequences for health, learning capacity, productivity, economic development and security. Investing in nutrition helps break the cycle of poverty by increasing a country's gross domestic product by at least 2–3% annually. Investing US \$1 in nutrition can result in a return of up to US \$30.