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## Top Stories

### Feast and Famine - Preventing Childhood Malnutrition

25 January 2010

Every year, more than 10 million young children die in developing countries. According to the World Health Organization, six million of these childhood deaths are linked to childhood malnutrition.

Malnourished children are more vulnerable to infection; the infections exacerbate their malnourishment, resulting in a lethal, vicious cycle that leads to an unacceptably high death toll. "Malnutrition in children is a global scourge," said IAEA Deputy Director General Ana María Cetto, speaking at the IAEA regional meeting on nuclear techniques to address the "double burden" of malnutrition in children, being held in Dhaka, Bangladesh.

As a result of malnutrition, Ms. Cetto noted, "146 million of the world's children under the age of five are underweight, and of these, more than half live in South Asia." Children's diets often lack vitally important micronutrients, like vitamin A, iron and zinc, which will adversely affect their psychomotor and mental development, cause blindness and increase the risk of illness, stunted growth and death.

#### Malnutrition and Poverty

Malnutrition's effects are felt far beyond individual development; it perpetuates national and regional poverty.

Professor Alan Jackson, a pre-eminent specialist on childhood malnutrition and Director of the University of Southampton's Institute of Human Nutrition, summarized malnutrition's pernicious effects in his keynote address to the IAEA's regional nutrition meeting, "Ensuring adequate nutrition to protect the growth and development of children is a critical factor for sustainable economic growth and development. Technically, we know what to do, but the challenge is to translate that into effective action that will transform the lives of millions of young children around the globe. The big question is whether there is the political will to protect their future by ensuring that what needs to be done is in fact done, and done now."

#### Feast and Famine – the Double Burden

Good care, adequate nutrition and appropriate medical treatment can prevent the majority of deaths among young children in developing countries.

The IAEA's support for research, education and technical cooperation activities in human nutrition



The importance of adequate nutrition during early life cannot be underestimated. (Photo: K. Jamil, Bangladesh)

#### Story Resources

- [Why Nutrition Makes all the Difference](#), 25 January 2010
- [Early Years](#), 25 January 2010
- [In Focus: Human Health and Nutrition](#)
- [IAEA Department of Technical Cooperation](#)
- [IAEA Nutritional and Health-Related Environmental Studies Section](#)
- [IAEA Division of Human Health](#)
- [IAEA Department of Nuclear Sciences and Applications](#)
- [International Centre for Diarrhoeal Disease Research, Bangladesh \(ICDDR,B\)](#)
- [International Malnutrition Task Force](#)

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contribute to the achievement of the Millennium Development Goal to reduce by two-thirds the mortality rate among children younger than five years of age.

Contrary to popular assumptions, famine and food insecurity are not the only causes of under-nutrition. Rather, many children in the developing world remain underweight or suffer from stunted growth because of inappropriate infant feeding and care practices, poor access to health services, or poor sanitation. At the same time, some children are eating too much of the wrong thing.

Globally, nutrition habits are changing radically. Diets are shifting from plant-based, self-harvested, home-produced foods to processed meals that contain more fats, sugar and other sweeteners. As a result, the number of overweight and obese children is rising rapidly, increasing the populations now facing a greater risk of nutrition-related chronic illnesses such as diabetes and heart disease. Malnutrition thus confronts public health experts with a "double burden" of risks resulting from underweight and overweight development.

### Stopping a Vicious Cycle

The IAEA has unique capacities to help Member States combat malnutrition by providing technical expertise in the use of nuclear applications like stable isotope techniques.

Non-radioactive, or stable, isotopes can be safely employed in developing and evaluating nutrition interventions for the most vulnerable population groups, infants and children. The IAEA's Division of Human Health helps to make these precision measurement techniques accessible to developing countries.

These techniques are valuable tools when developing and monitoring programmes to reduce nutritional deficiencies. For instance, stable isotope techniques tell us how breastfed infants absorb human milk. They establish the ratio of lean tissue to fat in body composition. They can track how the body takes in, uses and retains "micronutrients", such as vitamins and minerals like iron, zinc, and vitamin A that are vital in supporting healthy growth and development.

Through the IAEA's nutrition projects, stable isotope techniques are no longer used exclusively by elite research institutions. The IAEA's Department of Technical Cooperation provides Member States with training, equipment and supplies to be able to deploy stable isotope techniques to laboratories across Africa, Latin America and Asia. Compared to conventional techniques, stable isotope techniques offer much more sensitive and specific measurements. Armed with this evidence-based knowledge of the quantity, delivery, and quality of nutrients, nutritionists in the developing world can adjust and enhance nutritional support to speed infection recovery and help save hundreds of thousands of children's lives annually.

### Partners in Preventing Malnutrition

The IAEA's regional nutrition meeting, convening at the International Centre for Diarrhoeal Disease Research, Bangladesh, which is celebrating its fiftieth anniversary in 2010, is aiming at a multi-disciplinary effort to cut childhood malnutrition in the Member States of Asia and the Pacific.

Cetto emphasized that, "We hope this meeting will result in plans for joint initiatives between the IAEA and other UN system organizations. Their experience and authority in the fields of health, mother and child care and food security are essential for any successful regional nutrition initiative. By working in partnership and in coordination, we can each leverage our organizational strengths to address malnutrition in a holistic and cohesive manner, and at the same time ensure that we avoid duplicating efforts."

The meeting is hosted by the Government of Bangladesh. Representatives from the International Malnutrition Task Force, senior nutritionists and public health professionals specialized in childhood nutrition, in addition to international experts in the application of stable isotope techniques, will share their knowledge with representatives from Member States.

*By Peter Kaiser, IAEA Division of Public Information*