



IAEA

International Atomic Energy Agency

Atoms for Peace and Development

Portfolio

Nutrition for Improved Health

Using Nuclear Science and Technology



WHERE NUCLEAR TECHNIQUES CAN INFORM NUTRITION PROGRAMMING

First 1000 days

Body composition

Evaluating the success of interventions that manage undernutrition, overweight and obesity

Breast milk intake and exclusivity of breastfeeding

Assessing the success of breastfeeding promotion interventions on exclusive breastfeeding rates

Hidden hunger – vitamin A deficiency

Total body stores and liver concentration of vitamin A

Assessing vitamin A status in lactating women and optimizing the use of the isotope technique for larger surveys

Infectious disease

Presence of *Helicobacter pylori* in the stomach

Understanding how H. pylori infection impacts nutrient uptake and utilization in children

Double burden of malnutrition

Body composition

Validating simpler methods for assessing body composition (for use in larger surveys, clinics)

Obesity pandemic and diet-related NCDs*

Total energy expenditure

Understanding energy expenditure in light of the obesity pandemic and during cancer treatment

Added sugar intake

Developing new dietary biomarkers

Healthy aging

Bone mineral density and body fat distribution

Assessing NCD risk factors and bone health for the early identification of osteoporosis

Diet quality and food systems

Iron and zinc bioavailability

Evaluating the benefits of fortified and biofortified foods on micronutrient status

Hidden hunger - iron-deficiency anaemia

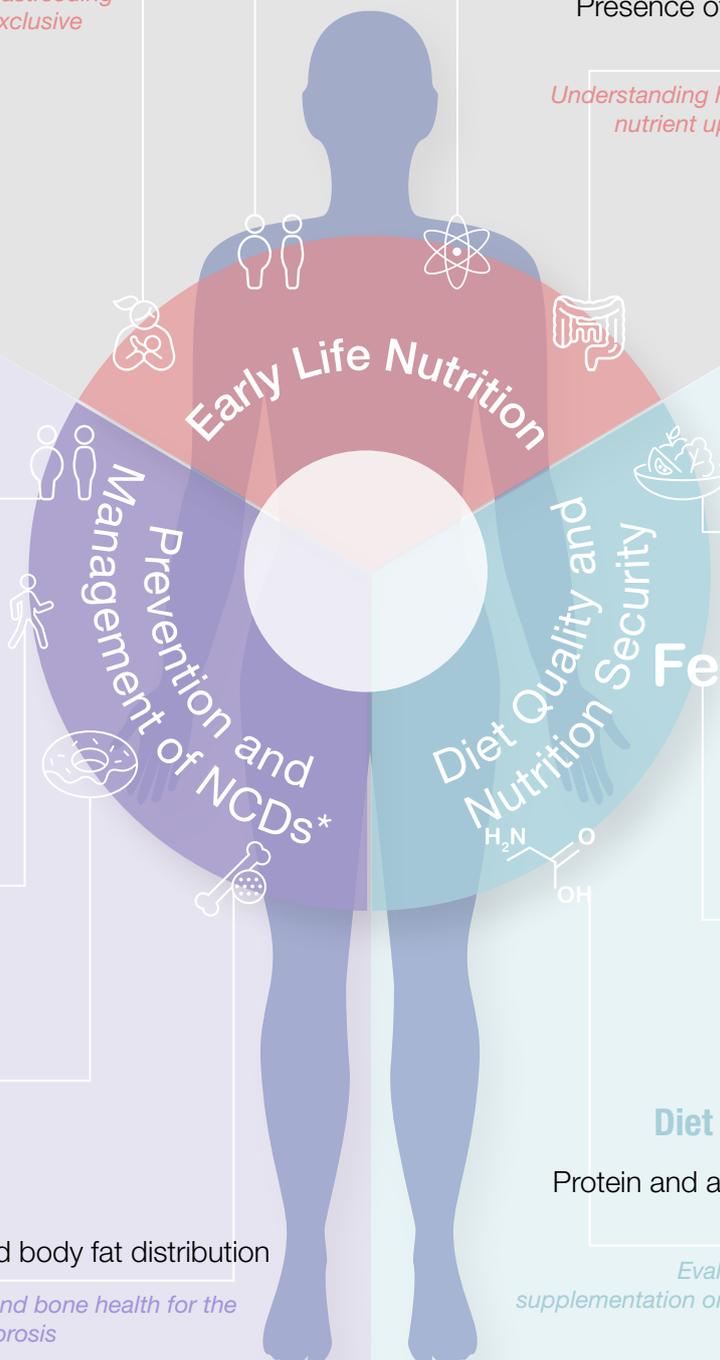
Iron long-term absorption and loss

Understanding iron metabolism in chronic inflammation and its impact on iron requirements

Diet quality and gut health

Protein and amino acid digestibility and gut function

Evaluating the effect of amino acid supplementation on the improvement of intestinal absorptive capacity



*Non-communicable diseases (NCDs)

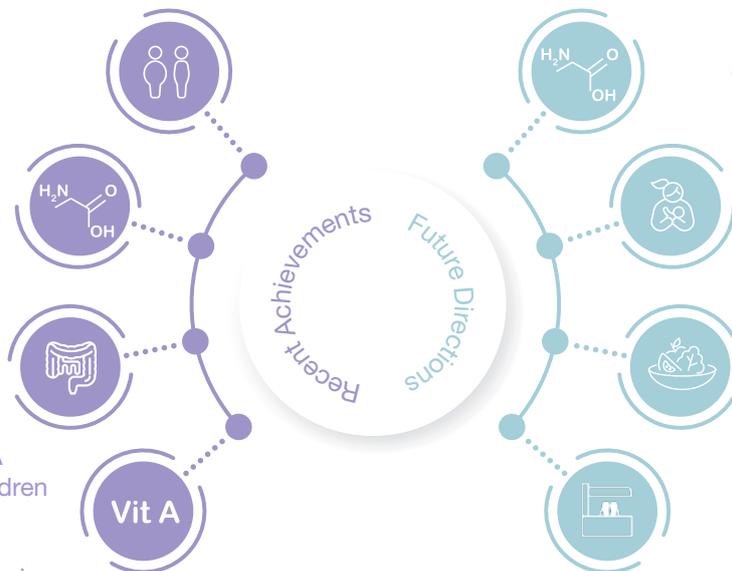
RECENT ACHIEVEMENTS AND FUTURE DIRECTIONS

Infant body composition reference data

New dual isotope tracer technique to assess amino acid digestibility and evaluate protein quality

Breath test for assessing gut function (absorptive capacity)

Evidence of high vitamin A liver concentrations in children from exposure to multiple vitamin A interventions, highlighting the need for their scale down



Develop protein and amino acid requirements in children

Generate data on breast milk intake and energy expenditure in key age ranges to bridge gaps in IAEA databases

Evaluate diet quality in changing food systems and of nutrient-dense underutilized crops

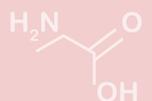
Understand the role of nutrition assessment and care in cancer treatment to improve clinical outcomes

Engage with us to address the future directions above!

To learn more about IAEA-supported nuclear techniques for nutrition, scan the QR code below and visit the Human Health Campus.

Email us at nahres@iaea.org

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The IAEA's efforts will contribute towards:

2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING

