IAEA’s Contribution to Improved Nutrition and Health
The Use of Stable Isotope Techniques for Developing, Monitoring and Evaluating Nutrition Interventions

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International Atomic Energy Agency

- IAEA is an specialized technical agency of the United Nations System;
- Established in 1957 as the world’s “Atoms for Peace” organization;
- Works with its Member States and multiple partners worldwide to promote safe, secure and peaceful nuclear technologies;
- Headquarters in Vienna with offices in Geneva, Tokyo, Toronto, and New York.
IAEA Mandate

“Atoms for Peace and Development”
To seek to accelerate and enlarge the contribution of nuclear techniques to peace, health and prosperity throughout the world.
Department of Nuclear Sciences & Applications

- Human Health
- Environment
- Food and Agriculture (Joint Division with FAO)
- Water Resources
- Radioisotope Production and Radiation Technology
- Nuclear Science
The Division of Human Health

Objective:
To enhance capabilities in Member States to address needs related to the prevention, diagnosis and treatment of health problems through the development and application of nuclear techniques within a QA framework.

- Nutritional and Health-Related Environmental Studies (NAHRES)
- Nuclear Medicine and Diagnostic Imaging (NMDI)
- Applied Radiation Biology and Radiotherapy (ARBR)
- Dosimetry and Medical Radiation Physics (DMRP)
Objective of IAEA’s Sub-Programme ‘Nutrition for Improved Health’

Enhance Member State capabilities to combat malnutrition in all its forms and to address environment related nutrition issues for better health throughout the life course.
Activities

- Infant and young child nutrition
- Maternal and adolescent nutrition
- Childhood obesity
- Diet quality
- Healthy aging
- Health effects of the environment
IAEA’s Contribution to the Global Efforts in Nutrition

The IAEA’s work complements the work of other players in nutrition through encouraging the use of stable isotope techniques (safe and non radioactive) in design and evaluation of nutrition interventions.

Stable isotope techniques are reference methods for assessment of:
- Body composition;
- Exclusive breastfeeding;
- Total daily energy expenditure;
- Micronutrient absorption;
- Vitamin A status;
- Protein and amino acid bioavailability and metabolism.
Support Mechanisms of IAEA

**Coordinated Research Projects**
- Call for research proposals
- Respond to research questions
- Small group of research institutes
- 4-5 year cycles
- Small annual grants
- Regular coordination meetings

**Technical Cooperation Programme**
- Concept submission from Member States
- Building and strengthening capacity to use stable isotope techniques
- Biannual planning cycle
- Training, expert advice, equipment, sample analysis, data management/analysis
Coordinated Research Projects

Areas of ongoing research projects:

• Infant feeding (breastfeeding), infant growth and body composition
• Childhood obesity
• Micronutrient nutrition (Vitamin A, Iron, Zinc)
• Optimizing nuclear techniques to assess vitamin A status and the risk of excess vitamin A intake
• Interaction between *Helicobacter pylori* infection and iron absorption
• Agriculture for improved nutrition
• Protein bioavailability from plant based diets
• Application of stable isotope techniques in EED assessment
• Link between Early Life Nutrition and Later Childhood Health
IAEA Human Health Series

IAEA Human Health Series No. 7
Stable Isotope Technique to Assess Intake of Human Milk in Breastfed Infants

IAEA Human Health Series No. 3
Assessment of Body Composition and Total Energy Expenditure in Humans Using Stable Isotope Techniques

IAEA Human Health Series No. 12
Introduction to Body Composition Assessment Using the Deuterium Dilution Technique with Analysis of Saliva Samples by Fourier Transform Infrared Spectrometry

IAEA Human Health Series No. 13
Introduction to Body Composition Assessment Using the Deuterium Dilution Technique with Analysis of Urine Samples by Isotope Ratio Mass Spectrometry

IAEA e-learning Modules

Assessing body composition by deuterium dilution technique

Menu
Title

Title
Navigation hints
Introduction
• Background to assessing body com...
• Deuterium dilution technique
Additional Information
Quiz
Acknowledgement & Reference

Nutritional and Health-related Environmental Studies
Division of Human Health
More information: Human Health Campus

Check out:

https://nucleus.iaea.org/HHW/Nutrition/

Also on LinkedIn: IAEA Human Health Campus
Send a request to join the group!
Objectives of workshop

- Review evidence on magnitude of the DBM
- Update on driving factors and underlying biological pathways
- Review interventions to address the DBM
- Discuss methodological issues related to diagnosis of DBM and assessment of the effectiveness of interventions
- Identify knowledge gaps and additional research needs
- Make recommendations on double duty actions to prevent DBM across sectors
Agenda

• Day 1: Magnitude of DBM, biological pathways
• Day 2: Interventions
• Day 3: Impact measurement and action plans

• Your expectations ➔ Flipchart!
Expected outputs

• Workshop report
• Commentary
• Web articles, blog
• Action plan
• Call for papers on research gaps and innovations to address the DBM
• IAEA Brief Human Health on DBM
Useful documentation

• The double burden of malnutrition: policy brief
  http://www.who.int/nutrition/publications/doubleburdenmalnutrition-policybrief/en/

• Double-duty actions for nutrition: policy brief
  http://www.who.int/nutrition/publications/double-duty-actions-nutrition-policybrief/en/
Housekeeping

- Mobile phones silent
- Session recording, request for permission
- Coffee breaks
- Lunch – coffee bars or cafeteria
- Bank
- Dinner option on Wednesday
- Group photo
- Rapporteurs – meeting report
- Break-out groups, 2 additional rooms