



International Symposium on Understanding the Double Burden of Malnutrition for Effective Interventions

**IAEA Headquarters
Vienna, Austria**

10–13 December 2018

Announcement and Call for Papers

A. Background

The double burden of malnutrition (DBM) affects at least a quarter of all countries worldwide¹, with low and middle income countries bearing the greatest burden due to lack of capacity to tackle the problem. DBM connotes a complex situation where food insecurity, micronutrient deficiencies, undernutrition and infectious diseases, as well as overweight, obesity and related non-communicable diseases (NCDs) coexist in countries, communities and households, and even in the same individual. Indeed, a *Lancet* article of October 2017 assessing malnutrition trends over the past four decades (1975–2016) reported a tenfold increase in the number of obese children and adolescents in the world.² This development is, however, taking place against the backdrop of recently released United Nations Children's Fund (UNICEF)/World Health Organization (WHO)/World Bank estimates³ that show high rates of undernutrition among children less than 5 years of age in 2016. Worldwide estimates indicate that 155 million (23%) children were stunted and 52 million (8%) were affected by wasting in 2016, while, at the same time, 41 million (6%) were overweight or obese. The above-mentioned *Lancet* article speculates that child and adolescent obesity will surpass underweight by 2022, while stunting and wasting are unlikely to go away soon. This situation is unacceptable and is a great threat to humanity.

A huge number of child deaths annually (3.1 million, which is 45% of all child deaths) are attributable to undernutrition.⁴ Overweight and obesity in childhood disproportionately increase the risk and earlier onset of NCDs, such as type 2 diabetes and cardiovascular diseases.

In response to this rising double burden, in April 2016, the United Nations General Assembly proclaimed the United Nations Decade of Action on Nutrition 2016–2025. The Nutrition Decade aims to trigger intensified action to end hunger and eradicate malnutrition worldwide, and ensure universal access to healthier and more sustainable diets — for all people, whoever they are and wherever they live. The Nutrition Decade provides a unique opportunity for stakeholders to strengthen joint efforts towards eradicating hunger and preventing all forms of malnutrition worldwide. It is an unprecedented opportunity for achieving nutrition impact at scale, with a collective vision of a healthier, more sustainable future. Implemented across the entire United Nations system, the Nutrition Decade ensures the highest level of credibility and accountability. Its fixed time frame provides energy and focus.

To support and catalyse the Nutrition Decade, the International Atomic Energy Agency (IAEA) held, jointly with the WHO and UNICEF, a workshop in Vienna, Austria, from 3 to 5 October 2017, on analysing biological pathways to better understand the double burden of malnutrition and to inform action planning. Fifty participants from United Nations system organizations (the IAEA, the WHO, UNICEF and the Food and Agriculture Organization of the United Nations), academia, policymaking bodies, ministries of health, and non-governmental organizations discussed the DBM, its epidemiology, the biological pathways that drive it and how policy and interventions can be formulated to address the phenomenon, which is a real threat to the achievement of the Sustainable Development Goals. Methods to measure the DBM and the impact of nutrition interventions, with an emphasis on the role of stable isotope techniques, were also explored. The main known biological drivers of the DBM are: (a) intergenerational factors and nutrition in the first 1000 days; (b) lack of physical activity; and (c) rapid shifts in dietary patterns. In addition, the importance of the interconnections between individuals and the social, physical and policy environment was emphasized. It was pointed out that all forms of malnutrition share the same systemic drivers, a fact that calls for common systemic solutions. The WHO has defined a framework for integrated nutrition actions — ‘double-duty actions’ — tailored to address both forms of malnutrition.⁵ It was repeatedly mentioned that the role of non-governmental organizations and civil society needed to be recognized in the implementation of double-duty actions.

The participants at the above-mentioned joint IAEA–WHO–UNICEF workshop agreed that the biological mechanisms contributing to the DBM were not yet fully understood; however, enough evidence was available to implement interventions addressing the DBM. The participants identified a number of knowledge gaps, and addressing them will lead to a better understanding of the multiple factors contributing to the DBM and ensure effective double-duty actions. The key gaps are highlighted below.

1. Improved understanding of biological pathways is required with regard to:

- Defining a clear biological link between undernutrition in early life and risk of overweight and obesity
- Delicate balance between metabolic capacity and metabolic load (e.g. using isotope techniques to assess the impact of early undernutrition on the metabolic capacity and its long term effects on the ability to manage metabolic loads)
- Effects of breastfeeding on later risk of overweight and obesity
- Potential unintended long term effects of nutrition and health interventions
- Relation between the degree of adiposity and the risk of NCDs in different populations

- Role of environmental factors (chemicals with endocrine disruptive properties, mycotoxins, the protective effects of a healthy microbiome) in the DBM

2. Strengthening the link between biology and implementation for sustainable action:

- Nutrition messages should be packaged in a way that other sectors, including non-State actors and informal businesses, can relate and commit to
- The translation of global recommendations into contextually relevant actions must be improved

3. Nutrition actions targeting the DBM need to take its complex nature into account:

- The focus of nutrition programmes is often too narrow. The DBM should be addressed at the local, regional, country and international level in order to acknowledge its complexity
- It is necessary to explore how existing nutrition interventions might be retrofitted in the light of the DBM

4. Improved methods are needed to assess the DBM and its immediate drivers:

- Improved measurement of exclusive breastfeeding at the population level
- Simple index expressing the DBM at population as well as individual level
- Methods to evaluate the effect of double-duty actions, including isotope techniques

References:

1. INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE, Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030, IFPRI, Washington, DC (2016). <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/130354/file/130565.pdf>
2. NCD RISK FACTOR COLLABORATION, Worldwide trends in body-mass index, underweight, overweight, and obesity from 1975 to 2016: a pooled analysis of 2416 population-based measurements studies in 128.8 million children, adolescents, and adults. *Lancet* **390** (2017) 2627–2642. [http://dx.doi.org/10.1016/S0140-6736\(17\)32129-3](http://dx.doi.org/10.1016/S0140-6736(17)32129-3)
3. UNITED NATIONS CHILDREN'S FUND, WORLD HEALTH ORGANIZATION, WORLD BANK GROUP, Joint Child Malnutrition Estimates – Levels and Trends: 2017 Edition. <http://www.who.int/nutgrowthdb/estimates2016/en/>
4. THE LANCET, Executive summary for series of papers on maternal and child undernutrition. <http://www.thelancet.com/series/maternal-and-child-nutrition>
5. WORLD HEALTH ORGANIZATION, Double-duty Actions for Nutrition, Policy Brief, WHO/NMH/NHD/17.2, WHO, Geneva (2017). <http://apps.who.int/iris/bitstream/10665/255414/1/WHO-NMH-NHD-17.2-eng.pdf?ua=1>

B. Purpose and Objectives

The purpose of the symposium is to strengthen understanding of how to tackle the DBM by sharing recent research findings as well as experiences with the implementation of relevant interventions, programmes and policies. The symposium will, in particular, highlight the role of stable isotopes in addressing gaps both in the measurement of malnutrition and in assessing the impact of interventions. The symposium aims to identify double-duty actions, new assessment tools, considerations for policies and action plans to support Member States in achieving their defined nutrition commitments within the Nutrition Decade.

The symposium will provide a forum to:

- Estimate and explore the global magnitude of the DBM
- Share evidence on biological pathways through which early nutrition influences NCDs
- Identify the role of stable isotope techniques and new tools in assessing the DBM
- Review the effectiveness of existing double-duty actions
- Review efforts that have been undertaken so far to create nutrition-enabling environments;
- Refine knowledge gaps and research needs identified at the joint IAEA–WHO–UNICEF workshop in October 2017
- Recommend double-duty actions
- Discuss considerations for the design of contextually relevant policies

C. Structure, Themes and Topics

The symposium programme will consist of an opening session, plenary sessions, parallel scientific sessions, oral abstract and poster presentations, ‘learning labs’, working group discussions and a closing session. The opening session will include welcoming addresses by representatives of the IAEA, cooperating organizations and other relevant organizations. The sessions addressing the main themes and topics of the symposium will continue with a combination of presentations by invited keynote speakers and participants who have been selected on the basis of the abstracts submitted. The symposium will also include poster sessions, and sufficient time will be provided for discussion and interaction with colleagues. There will be opportunities for enhancing professional skills related to measurement methods through learning labs. In addition, working group discussions will be facilitated to address specific topics and advance action planning. The final plenary session on the last day of the symposium will be dedicated to conclusions and recommendations on the way forward.

Consistent with the objectives set out above, the overall themes for the symposium will be:

1. Epidemiology

- Causes and consequences of the DBM
- Regional perspectives of the DBM and contributing factors based on data obtained using stable isotope techniques
- Economic aspects of the DBM

2. Biology

- Early-life nutrition and the delicate balance between metabolic capacity and metabolic load
- Micronutrient absorption and metabolism in malnourished individuals
- Interpretation of micronutrient status during inflammation
- The role of a healthy microbiome in the prevention of malnutrition
- The role of environmental hazards with endocrine disruptive properties in malnutrition

- The link between mycotoxins and malnutrition
- The long term health effects of acute malnutrition in early life
- Using isotope techniques to improve understanding of the energy balance origins of adult disease

3. Assessment

- Applying stable isotope techniques to improve the tools for assessment of breastfeeding at the population level
- The role of stable isotopes in assessing body composition and evaluating the effects of interventions
- Defining cut-off points for adverse health outcomes of adiposity in different populations
- The role of stable isotopes in assessing energy expenditure and energy intake in relation to the DBM
- Designing an index for the DBM to use in populations and individuals
- Designing a multi-dimensional capability index, including biological, parental and societal factors
- Leveraging technological advancements for surveillance, measurement tools and research methods using augmented reality and artificial intelligence, for example to assess dietary intake and estimate body composition from body shape

4. Interventions

- Designing innovative, contextually relevant actions to tackle the DBM
- Addressing barriers to exclusive breastfeeding in order to improve breastfeeding practices
- Designing interventions for the treatment of acute malnutrition whilst minimizing the risk of potentially adverse long term consequences
- Using agriculture and nutrition sensitive food systems in the design of double-duty actions
- Designing tailored actions meeting the needs of specific vulnerable groups (e.g. adolescent girls, migrants) and different contexts (e.g. emergency vs development)
- Leveraging the coherence between climate needs and human health needs in efforts to tackle the DBM

5. Policy implications

- Packaging the key messages for policymakers, programme planners and implementers
- Facilitating dialogue between science and policy to ensure relevant evidence based actions
- Fostering linkages with non-State, non-health actors, including private sector, civil society and other groups
- The role of urban planning, trade and investment in improving nutrition
- Supporting governments in setting and tracking SMART ('specific, measurable, achievable, realistic and timely') commitments to tackle the DBM

D. Target Audience

The symposium is aimed at participants drawn from and including:

- United Nations system organizations, such as the WHO, UNICEF, the World Food Programme and the United Nations System Standing Committee on Nutrition
- World Bank
- The Scaling Up Nutrition (SUN) movement, including SUN national representatives
- Academia
- Policymakers, programme planners and implementers (health, agriculture, economics, urban planning)
- Health professionals, paediatricians, public health nutritionists, health economists
- National, regional and international organizations
- Non-governmental organizations and the civil society
- Journal editors
- Major funders

The IAEA welcomes and encourages the participation of women, early career professionals and individuals from developing countries.

E. Participation and Registration

All persons wishing to participate in the symposium have to be designated by an IAEA Member State or should be members of organizations that have been invited to attend. The list of invited organizations can be requested from the Symposium Secretariat (see Section N).

In order to be designated by an IAEA Member State, participants are requested to send the following form(s) (as applicable) to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority):

- Participation Form (Form A): participation only; no deadline if only Form A is submitted.
- Form for Submission of a Paper (Form B): participants submitting a paper through INDICO (deadline **23 April 2018**), have to send the completed and signed Form B together with Form A to their competent national authority for onward transmission to the IAEA (Official.Mail@iaea.org) by **23 April 2018**.
- Grant Application Form (Form C): participants requesting financial support from the IAEA have to complete Form C and send it together with Form A (and Form B, if applicable) to the competent national authority for onward transmission to the IAEA (Official.Mail@iaea.org) by **23 April 2018**. Form C has to be stamped and signed by the competent national authority.

Participants who are members of an organization invited to attend, are requested to send the above form(s) through their organization to the IAEA (Official.Mail@iaea.org).

Participants who registered in accordance with the above procedure will receive from the IAEA further information approximately three months before the opening of the symposium.

F. Abstracts and Poster Presentations

All abstracts submitted — other than invited keynote papers — must present original work and should not have been published elsewhere.

Persons who wish to give a presentation at the symposium — either orally or in the form of a poster — must submit a structured abstract of 500 words on one of the topics listed under Section C. The abstract should give enough information on the contents of the proposed presentation to enable the Programme Committee to evaluate it. Including too many introductory and general matters should be avoided. The accepted abstracts will be reproduced unedited in the electronic *Compilation of Abstracts* which will be available to all participants at the symposium.

F.1 Submission of abstracts

Persons who wish to present a paper or poster at the symposium must submit an abstract **in electronic format** (no paper copies) through the symposium's web browser-based file submission system (INDICO) which will be accessible through the IAEA web page for the symposium (see Section O). The abstracts must be submitted through this system between **1 February 2018** and **23 April 2018** (European time zone). No other form of submission will be accepted.

In addition, authors must submit the following two forms to their competent national authority (see Section E) for transmission to the IAEA. These forms must be received by the IAEA no later than **23 April 2018**.

- Participation Form (Form A); and
- Form for Submission of a Paper (Form B).

IMPORTANT: The electronically received abstracts will be considered by the Programme Committee only if these two forms have been received by the IAEA through the competent national authority.

F.2 Acceptance of abstracts for oral or poster presentation

Given the number of abstracts anticipated and the need to provide ample time for discussion, the number of abstracts that can be accepted for oral presentation is limited. Authors who prefer to present their abstracts as posters are requested to indicate this preference on Form A and through INDICO.

Authors will be notified by **30 June 2018** as to whether their abstracts have been accepted for oral or poster presentation.

F.3 Symposium proceedings

A limited number of the papers presented at the symposium will be selected for publication in a scientific journal.

G. Expenditures and Grants

No registration fee will be charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of participants in the symposium. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of certain participants. Such assistance may be offered upon specific request to normally one participant per country provided that, in the IAEA's view, the participant on whose behalf assistance is requested will make an important contribution to the symposium.

If participants wish to apply for a grant, they should submit applications to the IAEA to this effect through their competent national authority. Participants should ensure that applications for grants are:

1. Submitted through the competent national authority by **23 April 2018**;
2. Accompanied by a completed and signed Grant Application Form (Form C); and
3. Accompanied by a completed Participation Form (Form A).

Applications that do not comply with the above conditions cannot be considered.

Approved grants will be issued in the form of a lump sum payment that usually **covers only part of the cost of attendance**.

H. Distribution of Documents

A preliminary programme will be posted on the IAEA web page for the symposium (see Section O) as soon as possible. The final programme and the *Compilation of Abstracts* will be available free of charge upon registration at the symposium.

I. Exhibitions

A limited amount of space will be available for displays/exhibits during the symposium. Interested parties should contact the Scientific Secretary (see Section N) by email at: DBMal2018@iaea.org by **23 April 2018**.

J. Working Language

The working language of the symposium will be English. No interpretation will be provided.

K. Symposium Venue and Accommodation

The symposium will be held at the IAEA's Headquarters in Vienna, Austria. Participants must make their own travel and accommodation arrangements. Hotels which are offering a reduced rate for symposium participants will be listed on the symposium web page (see Section O). Please note that the IAEA is not in a position to assist participants with hotel bookings, nor can the IAEA assume responsibility for paying cancellation fees or for re-bookings and no shows.

Detailed information on accommodation and other relevant matters will be made available on the symposium web page as soon as possible.

L. Visas

Designated participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria at least eight weeks before they travel to Austria. Designated participants will be required to submit a letter of invitation in support of their visa application.

M. Key Dates and Deadlines

Opening of abstract submission through IAEA-INDICO	1 February 2018
Deadline for submission of abstracts through IAEA-INDICO	23 April 2018
Deadline for submission of Form for Submission of a Paper (Form B) together with Participation Form (Form A) through the competent national authority or through InTouch+	23 April 2018
Deadline for submission of Grant Application Form (Form C) together with Participation Form (Form A) through the competent national authority or through InTouch+	23 April 2018
Notification of acceptance of abstract	30 June 2018
Deadline for submission of presentations	15 November 2018
Registration only (no paper submission, no grant request)	No deadline

N. Symposium Secretariat

General contact details of the Symposium Secretariat:

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretaries of the symposium and correspondence on administrative matters to the IAEA Conference Services Section.

O. Symposium Web Page

Please visit the following web page regularly for new information regarding this symposium:

<https://www.iaea.org/events/international-symposium-on-understanding-the-double-burden-of-malnutrition-for-effective-interventions>

P. Greening

To demonstrate its commitment to sustainability, the IAEA will organize this symposium as a 'green meeting' according to the guidelines of the Austrian Ecolabel.

There will be a focus on the areas of paper smart documentation, waste reduction and recycling, and environmentally friendly catering.