



# Women's nutrition

**A summary of evidence, policy and practice including adolescent and maternal life stages**

Technical briefing paper: Executive summary

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## Authors

Philip T. James, Stephanie V. Wrottesley, Natasha Lelijveld, Eilise Brennan, Bridget Fenn, Rachael Menezes and Emily Mates.

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## Executive summary

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## Executive summary

Malnutrition – including undernutrition, overweight and obesity, and micronutrient deficiencies – disproportionately affects women and girls, with more than 1 billion women globally experiencing at least one form of malnutrition. While women and girls have a biological vulnerability to certain forms of malnutrition, such as anaemia, a number of economic, social and cultural factors contribute to gender inequalities that limit access to optimal nutrition for women and girls.

## Global targets and guidelines

Currently, global targets focus on reducing maternal mortality, reducing the prevalence of anaemia in adolescent girls and women of reproductive age (WRA) (15–49 years), and addressing the nutritional needs of pregnant and lactating women and adolescent girls (PLW/G). With a view to achieving these targets, the following are key international guidelines that include the nutrition of women and adolescent girls:

- World Health Organization (WHO) 2016 antenatal care (ANC) guidelines, covering dietary counselling, balanced energy and protein (BEP) supplementation for undernourished populations, and appropriate micronutrient supplementation.
- WHO 2013 postnatal care (PNC) guidelines, focusing on iron and folic acid (IFA) supplementation and nutrition counselling.
- A number of United Nations nutrition guidelines for populations in humanitarian contexts which include women and girls.

However, there are no guidelines that bring together all the nutrition recommendations for adolescent girls and women. In addition, guidelines are not always routinely updated to ensure that they remain relevant and reflect the latest evidence. Guidelines for humanitarian contexts are particularly piecemeal.

Indicators of nutritional status in adolescent girls and women, including short stature, underweight, anaemia prevalence, overweight and obesity, diabetes and raised blood pressure, are routinely included in global and national monitoring and reporting such as the Global Nutrition Report and Demographic and Health Surveys (DHSs). However, there is currently no routine monitoring of minimum dietary diversity, or other micronutrient deficiencies.

Data for adolescent girls are absent, with adolescents 10–19 years often included with 'other' demographics, if at all. Guidance on how to assess certain aspects of nutritional status for women and adolescent girls is lacking, with no universal WHO definition of wasting currently available for PLW/G (including no agreed thresholds on mid-upper arm circumference (MUAC)). There is also a dearth of global data on pre-pregnancy body mass index (BMI) and gestational weight gain. This makes it challenging to understand optimal pre-conception nutritional status and healthy weight gain trajectories during pregnancy, as well as how to intervene when necessary.

## Nutritional vulnerability of women and adolescent girls

Increased nutrient requirements for menstruation, pregnancy and lactation make WRA and adolescent girls physiologically vulnerable to undernutrition and micronutrient deficiencies. While the prevalence of underweight in WRA declined from 14.6% in 1975 to 9.7% in 2014, substantial burdens persist across Africa and Asia, reaching 24% in South Asia. In addition, declines in national prevalence mask 'hotspot areas' at the sub-national level in South Asia and parts of Africa. In areas of South and Southeast Asia, maternal short stature (<150 cm) affects 40–70% of women. The focus in humanitarian and developing contexts has traditionally been on undernutrition but it is now critical to consider overweight and obesity due to their rising prevalence worldwide. The burden of overweight and obesity is particularly high in the Pacific Islands, Latin America and the Caribbean, and the Middle East, but very large increases have also occurred in regions such as South Asia, where underweight prevalence also remains high, resulting in a considerable double burden of malnutrition.

“More than 1 billion women globally are experiencing at least one form of malnutrition.”

Limited data on the global prevalence of micronutrient deficiencies suggest that the highest burden is placed on women and children in lower middle-income countries (LMICs). Approximately one-third of WRA across LMICs are anaemic, 63.2% on average are vitamin D-deficient, 41.4% are zinc-deficient, 22.7% are folate-deficient and 15.9% are vitamin A-deficient. Substantial variations in the prevalence of micronutrient deficiencies are evident between countries. While micronutrient supplementation during pregnancy has documented benefits for micronutrient status and birth outcomes, complete repletion of nutrient status may not be achieved due to chronically deficient diets and increased nutrient requirements in pregnancy. In addition, while the supply and intake of micronutrients has increased globally, this does not necessarily equate to higher intakes in women, particularly in countries where gender inequalities influence intrahousehold food distribution.

Many factors, such as climate change and the COVID-19 pandemic, have exacerbated the vulnerability to, and increased the burden of, malnutrition for women and girls, and will continue to do so. For adolescent girls, early marriage and pregnancy have serious adverse consequences for maternal and infant nutrition and health outcomes. Finally, within humanitarian contexts, women are among the most nutritionally at risk. Their existing vulnerabilities may reduce resilience to shocks and can often be further exacerbated by contextual factors that drive or result from humanitarian crises.

### Nutrition interventions for women and adolescent girls

Nutrition-related interventions for women and adolescent girls include direct nutrition interventions, such as macronutrient and micronutrient supplementation, and food fortification; and indirect interventions, such as nutrition education and counselling, social protection programmes, sexual and reproductive health services, treatment/management of communicable and non-communicable diseases (NCDs), mental health services, breastfeeding support, nutrition-sensitive agriculture, and women's empowerment interventions. However, much of the evidence from these interventions focuses on the health benefits for infants and children, with evidence on the nutrition and health outcomes of women often being absent or insufficiently powered to draw conclusions.



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Multi-sectoral programmes and those that are integrated into national health systems are likely to have the greatest impact and widest coverage. However, the coverage of interventions is largely not well-documented.

### Macronutrient and micronutrient interventions

The majority of available evidence on maternal nutrition programmes and interventions focuses on macronutrient and micronutrient supplementation to tackle undernutrition and anaemia in PLW/G. Supplementation is a commonly used intervention to tackle undernutrition in adolescent girls and women, especially during humanitarian situations, with interventions often prioritising PLW/G based on the evidence of a positive impact on infant outcomes. For example, in humanitarian contexts targeted supplementary feeding is recommended by the Global Nutrition Cluster for all PLW/G up to six months postpartum who are moderately wasted. In such emergency contexts, blanket feeding programmes will often include supplementary feeding for all those within higher risk groups, such as PLW/G. In undernourished populations, BEP supplementation is recommended for pregnant women.

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However, numerous gaps exist in the guidelines for macronutrient supplementation in undernourished adolescent girls and women, including the following:

- There is no updated WHO guideline on the detection and treatment of adolescent and adult moderate and severe wasting, including in girls and women.
- Guidelines on BEP supplementation for PLW/G are relatively new, and lack detail and implementation guidance. They are also confusing in places as to how they align with existing guidelines for lipid-based nutrient supplements (LNS) and other supplementary foods.
- Standardised criteria for the inclusion of PLW/G in blanket feeding programmes are similarly lacking.

Antenatal micronutrient supplementation has established benefits for maternal anaemia and birth outcomes, with some of the latest evidence supporting the replacement of antenatal IFA supplementation with multiple micronutrient supplementation (MMS). However, IFA supplementation continues to be recommended in WHO ANC guidelines, with the exception of humanitarian contexts and 'rigorous research settings'. IFA supplementation is also recommended for other sub-groups, including non-pregnant girls and women in high-burden contexts and postpartum women; however, limited evidence exists for this in practice across LMICs and implementation guidance on micronutrient supplementation in general is lacking, particularly outside of pregnancy.

### Health interventions and integration

The nutrition of adolescent girls and women is integrally linked with the provision of health services, which provide important contact points for nutritional assessment, counselling and referral. However, in LMICs health systems often suffer from a host of issues, including inadequate human and financial resources, lack of availability and suboptimal quality of commodities, inequitable resource allocation and a lack of accountability mechanisms – factors which tend to be exacerbated in humanitarian contexts.

While studies have demonstrated a relationship between dimensions of women's mental health and nutrition, as well as between a lack of women's empowerment (e.g., through domestic violence) and adverse nutrition outcomes, evidence on the mechanistic links between maternal mental health and nutrition, and on effective screening tools and intervention programmes, is needed. Overall, while ANC services are well-established within health systems, there is limited focus on the integration of postnatal nutrition services and services for non-pregnant women and girls, and a lack of tailored services for pregnant adolescent girls.

### Other indirect nutrition interventions

There are insufficient indirect nutrition interventions for women and adolescent girls in LMICs, and there is also a lack of consideration of broader contextual factors (e.g., cultural norms and gender inequalities) within the development of interventions. Gender equality and the empowerment of women and girls is a fundamental human right, which mutually enforces the right to adequate food. Empowering women is one of the most effective ways to improve nutrition outcomes, both for women themselves and for other members of the household, and can help to break intergenerational cycles of malnutrition. However, recognition of the links between gender empowerment and women's nutrition is largely lacking in guidelines and programming efforts. In addition, while numerous interventions link climate change to agriculture, they often fail to consider the specific impacts on women, who are likely to be the most affected by climate-related impacts on food security and nutritional status. More evidence is needed to inform the development of multi-sectoral programmes across health, social protection, education and agriculture which prioritise nutrition for women and girls in their own right, and to mainstream core principles such as gender equality and planetary health.

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## Gaps and recommendations

In reviewing the evidence, interventions and guidelines for the nutrition of adolescent girls and women, a number of key gaps and recommendations for progress were identified:

### Gap 1: Navigating and finding the latest guidelines on nutrition for adolescent girls and women is challenging.

**Recommendation:** A repository or website is needed that collates the latest guidance on nutrition for women and adolescent girls. Updated guidelines need to ensure that other relevant United Nations documents are accurately referenced. Ideally, going forward it would be helpful to have a synthesis document that brings together key recommendations for women's nutrition across pre-conception, pregnancy and postnatal stages.

### Gap 2: There is a lack of evidence and guidance on pre-conception nutrition, with a particular lack of nutrition programming and policy for adolescents.

**Recommendation:** Global targets, indicators, policies and programmes need to put greater emphasis on ensuring optimal health and nutrition of non-pregnant girls and women, given the importance of pre-conception nutrition, preventing adolescent pregnancies, and the potential for maximising healthy growth and development during adolescence. In humanitarian settings, the provision of a minimum package of reproductive health services at the initial stages is essential.

“Global targets, indicators, policies and programmes need to put greater emphasis on ensuring optimal health and nutrition of non-pregnant girls and women.”

### Gap 3: Global and national indicators are heavily focused on infant and child outcomes, rather than outcomes for the mother herself.

**Recommendation:** In addition to infant outcomes, clear indicators that are disaggregated for adolescent girls, pregnant women and non-pregnant women are needed as part of global and national targets, in order to measure the effects of interventions on women and to track progress over time. Being able to measure the extent of the problem and its implications also allows for better advocacy, which can lead to much-needed increases in financing and political will for improving the nutrition outcomes of women and adolescent girls.

### Gap 4: There is a lack of guidance and clarity on the assessment of nutritional status in adolescent girls and women, including: 1) no optimal, context-specific MUAC cut-off for wasting; 2) no routine collection of dietary adequacy indicators; and 3) a lack of global data on gestational weight gain.

**Recommendation:** Indicators of women's and adolescent girls' diets and anthropometric status need to be clarified by the respective United Nations agencies, including appropriate measures of dietary adequacy (such as minimum dietary diversity), undernutrition and wasting in adolescent girls and women, and guidance on context-specific (or universal, if appropriate) MUAC cut-offs for wasting. These indicators should be included in national and global surveys, including the Global Nutrition Report, and they should be linked to programme decision-making. Assessment and monitoring of weight gain during pregnancy and other maternal nutritional indicators must be built into health systems, for example through platforms that are already in place to monitor infant growth, with action/referral as necessary.

**Gap 5:** There are contrasting interpretations of the evidence base for whether IFA or MMS supplementation should be used in pregnancy, making it difficult for policy-makers and implementers to know which strategy to follow. There is also a lack of understanding of the best ways to improve adherence to supplementation, regardless of the formula chosen.

**Recommendation:** A consultation between organisations/communities of practice holding contrasting views on the use of MMS or IFA in pregnancy should be held to provide policy-makers and practitioners with some clarity and consistent messaging. The debate on the supplementation formula should not detract from a focus on how supplementation regimes can be improved in their coverage and uptake, with a need for context-specific guidance to be made available to policy-makers and practitioners.

**Gap 6:** There are several gaps in the guidelines for macronutrient supplementation in undernourished women: 1) there is no WHO guideline on identifying and treating adult moderate and severe wasting; 2) the relatively new guidance to provide BEP to PLW/G in populations with high prevalence of undernutrition lacks detail and implementation guidance; 3) there is a lack of guidance on mitigating risks related to the double burden of malnutrition and NCDs.

**Recommendation:** There needs to be one guideline which covers the different appropriate options for macronutrient supplementation in both humanitarian and development settings, during and outside of pregnancy. This should include: a) appropriate indicators for targeting adolescent girls and women (MUAC and/or BMI); b) details on which products to provide in what context, and details of their optimal nutritional content; c) implementation guidance for delivering these different interventions and measuring their coverage; and d) guidance on mitigating risks related to the double burden of malnutrition and NCDs.

**Gap 7:** There is a lack of indirect nutrition interventions for adolescent girls and women, including: 1) a lack of gender empowerment in nutrition programmes; 2) a lack of research, screening tool(s) and intervention packages linking maternal mental health and nutrition; and 3) a lack of interventions focusing on the impact of climate change on nutrition.

**Recommendation:** There is a need for gender empowerment and equity to be mainstreamed into all nutrition programming (both direct nutrition interventions and indirect nutrition interventions, such as those involving agriculture, social protection and climate change programming). Better integration, and inter-disciplinary understanding of the links between maternal mental health and nutrition are needed, with a need for mental health to be more prominently featured in adolescent girls' and women's nutrition guidelines, such as the upcoming revision to the WHO PNC guidelines. Programmes targeting infant growth failure provide an opportunity to also identify at-risk mothers and to target care, benefiting both mother and infant. Climate change and climate resilience interventions need to include a specific focus on the nutrition outcomes of women and adolescent girls and tackling gender inequity as part of their programmes.

**Gap 8:** There is a lack of integration of nutrition services within health systems.

**Recommendation:** Nutrition services need to be fully integrated into health systems, not only during ANC but also postnatally and for non-pregnant women and girls. These services should recognise women's risks of NCDs, with better integration of NCD prevention and management services needed for adolescent girls and women in general. Robust assessment of the impact of integrated health and nutrition programmes on the nutrition outcomes of women and adolescent girls would support learning and advocacy, as appropriate.





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2nd Floor, Marlborough House, 69 High Street, Kidlington, Oxfordshire OX5 2DN  
+44 (0)1865 372340 | [www.ennonline.net](http://www.ennonline.net) | [office@ennonline.net](mailto:office@ennonline.net)

Charity registration no: 1115156. Company registration no: 4889844.