Towards a practical guide:

A scoping review of nutrition programming, policy, and evidence for school-age children and adolescents in humanitarian contexts

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Executive summary

Introduction

School age and adolescence (5–19 years) is a critical phase of growth and development, with significant implications for current and future generations. During humanitarian emergencies, these age groups, especially girls, are nutritionally vulnerable due to increased requirements and preexisting deficits. They face heightened risks of violence, early pregnancy, and disruptions to health and education services. Emergencies can lead to various forms of malnutrition, including micronutrient deficiencies, thinness/wasting, or overweight. These issues can have lifelong and intergenerational consequences. Data on malnutrition prevalence among school-age children and adolescents in humanitarian settings are scarce, particularly for boys and younger children. Some conflict-affected areas lack data entirely. There are no Sustainable Development Goals (SDGs) specifically addressing school-age nutrition, and we lack established indicators to assess malnutrition and its consequences in this age group.

While there are several evidence gaps on nutrition programming for this age group, there remains an urgent immediate need for interim practical guidance to inform relevant nutrition programming in humanitarian contexts. This report summarises existing policies, programmes, and evidence on nutrition, health, and wellbeing in children and adolescents aged 5–19 years in humanitarian contexts. Evidence and experiences were gathered through the following: (1) a scoping of peer-reviewed journal articles, grey literature, and policy documents; and (2) key informant interviews with relevant practitioners (the United Nations Children's Fund (UNICEF), the World Food Programme (WFP), Save the Children, Médecins Sans Frontières (MSF), Action Against Hunger (ACF), Johns Hopkins, and the Centers for Disease Control and Prevention). We then used the information to create comprehensive

practical recommendations to support the development of programming guidance in the future.

Key existing global policies and guidelines

In the main report, we signpost readers to many international guidelines. In particular, we highlight the following:

- The UNICEF Core Commitments for Children in Humanitarian Action (CCCs) cover the needs of school-age children and adolescents under the health and nutrition sections.
- Programming guidance from UNICEF (2024) on 'Protecting the nutrition of women and adolescent girls in humanitarian settings' has a strong focus on pregnant and breastfeeding adolescent girls.
- The World Health Organization (WHO) policy document for 'Implementing effective action for adolescent nutrition' (2018) is not specific to humanitarian contexts but has information on overarching priority nutrition actions for 10–19-year-olds. WHO also provides guidance for the management of acute malnutrition in adults and adolescents in its 'Integrated management of adult and adolescent illness' (IMAI) manual (2011).
- The multi-agency 'Global Accelerated Action for the Health of Adolescents (AA-HA! 2.0)' guidance document underlines evidence-based solutions for adolescents and presents strategies for priority setting, planning, implementing, and evaluating health and wellbeing programmes. It covers humanitarian as well as development settings.
- The Inter-Agency Standing Committee (IASC) document 'With us & for us: Working with and for Young People in Humanitarian and Protracted Crises' (2020) was created in consultation with over 500 young people (aged 10–24 years) from more than 20 crisis-affected countries. The guidelines provide an overall framework for working with and for young people, as well as action tips for adolescent-responsive programming.

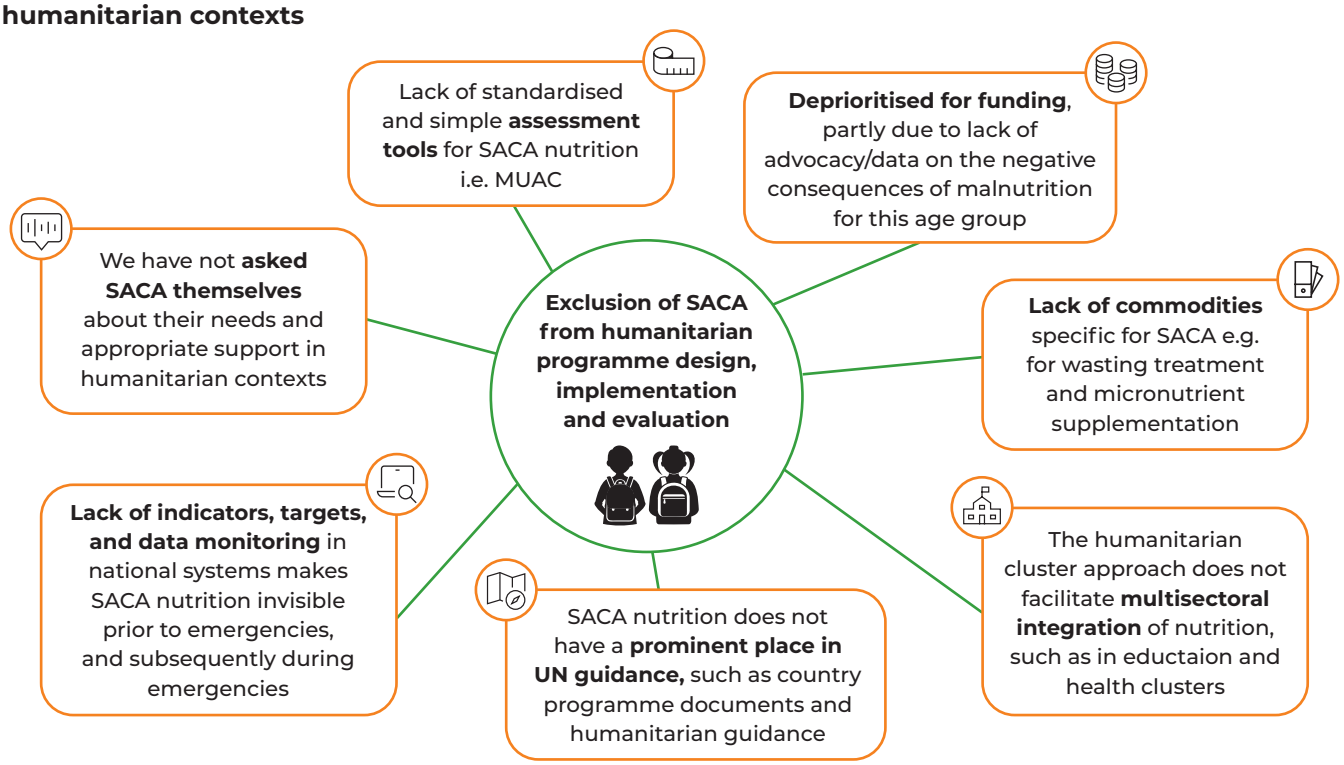
Evidence review on key interventions

Interviews with implementing practitioners revealed very few interventions specifically targeting school-age children and adolescent nutrition in emergencies. There were other, broader nutrition programmes that also captured some adolescents in their targeting, such as interventions designed for people living with HIV, or those aimed at pregnant and breastfeeding women. There were also other sector interventions that sometimes included a small nutrition aspect, such as sexual and reproductive health (SRH) and education interventions. In the full report, we summarise some of the better-evidenced and recommended nutrition interventions for this age group, also considering information on different delivery platforms and how nutritional status is assessed. In particular, we focus on the evidence base for the following interventions:

1. the provision of nutritious foods, including school meals, the fortification of staple foods, and general food distribution;
2. wasting / thinness management;
3. micronutrient supplementation, including weekly iron and folic acid supplementation (WIFAS) and multiple micronutrient supplementation (MMS), and deworming;
4. nutrition education and physical activity;
5. healthy food environments, including regulating school vendors and marketing, and cash and voucher assistance (CVA); and
6. interventions for pregnant and breastfeeding adolescent girls, including nutritional screening, balanced energy-protein (BEP) supplementation, micronutrient supplementation, nutrition education and counselling, social assistance programming, and empowerment and gender-transformative programming.

The above interventions form part of a wider range of complementary services and interventions that are needed in humanitarian contexts, including child protection, health, gender-based violence prevention, SRH services, education interventions, and water, sanitation, and hygiene (WASH) services. Many barriers to nutrition programming for school-age children and adolescents in humanitarian contexts were articulated in the literature and the interviews, as summarised in the figure on page 7.

Summary of the barriers to nutrition programming for school-age children and adolescents in humanitarian contexts



SACA: school-age children and adolescents; **MUAC:** mid-upper arm circumference

Recommendations for better-informed responses

- Conduct research and assessments to better understand and regulate the food environments of school-age children and adolescents, with a specific focus on ultra-processed foods (UPFs) high in fat, salt, and sugar, and school food environments.
- Include adolescents' voices in emergency response plans and use their preferred platforms for outreach purposes.
- Humanitarian agencies should all have youth engagement policies.
- Improve routine monitoring of 5–19-year-olds' nutritional status to inform emergency responses.
- Generate UN global guidance, indicators, and targets to focus on the nutrition of school-age children and adolescents; these must all be specific and disaggregated for this age group.
- Include the nutrition of school-age children and adolescents in national policies, national humanitarian response plans, and UNICEF country programme documents.
- Researchers and policymakers need to improve methods for assessing the nutritional status of school-age children and adolescents and provide clear guidance, recognising that current methods recommended for developing contexts are not feasible in most humanitarian settings. More specifically:
  - Mid-upper arm circumference (MUAC)-for-age z-score or small age 'buckets' of MUAC cut-offs should be used to assess undernutrition and mortality risk in instances where calculating the body mass index-for-age z-score (BAZ) is not feasible.
  - Guidance on using MUAC to assess overweight, in conjunction with other simple indicators, should also be considered.
  - The assessment of anaemia is simple and feasible using the HemoCue finger prick method; however, this needs to be more widely applied to 5–19-year-olds.
  - Rapid and simple dietary assessments, and food insecurity assessments such as the Child Food Insecurity Experiences Scale (CFIES), need to be more widely applied to 5–19-year-olds.
  - Field-friendly (quick/cost-effective) techniques for obtaining an early diagnosis of other micronutrient deficiencies besides anaemia are urgently required.

Recommendations to improve programme funding

- Generate evidence on the 'cost of inaction' for school-age and adolescent nutrition in emergencies to generate more funding.
- Shift the narrative focus from girls' nutrition solely for future motherhood to prioritising both girls' and boys' nutrition as a right of their own.
- The nutrition sector should create more partnerships with advocacy and funding organisations working on the 'education crisis' given the linkages between access to education and access to school meals.

Recommendations for intervention implementation

- Improve multisectoral approaches in emergencies, and better integrate nutrition into other services targeting school-age children and adolescents, such as social protection, education, and health.
- School feeding needs to be jointly implemented between education and nutrition clusters, or ministries, and should not fall between the gaps.
- Nutrition actors should work with education partners to prioritise keeping schools or 'learning centres' open during emergencies, wherever feasible and safe, given that these are key spaces to reach school-age children and adolescents with health and nutrition interventions.
- Governments and sector/cluster coordination platforms should clarify roles by mapping the responsibilities of various actors involved in nutrition programming for this age group.
- All implementing partners should consider the full spectrum of malnutrition in emergencies, not just undernutrition and micronutrient deficiencies, but also overweight and obesity, as well as key underlying causes such as unhealthy diets and physical inactivity.
- Up-to-date, normative guidance on wasting or thinness management is required for this age group.
- New products or rebranded products that are specific for this age group should be developed, such as wasting treatment products and micronutrient powders.
- Researchers and normative guidance need to clarify the use, appropriate formulation, and cost-effectiveness of MMS in place of iron and folic acid (IFA) supplements for school-age children and adolescents.
- Implementors of emergency interventions for the general population, such as general food distributions and CVA programmes, must ensure that the heightened nutritional needs of 5–19-year-olds are taken into account. These programmes should also be age- and gender-responsive, such as by making additional efforts to ensure that young people are aware of distribution sites and timings.
- Adolescent mothers should be prioritised in all pregnancy and breastfeeding interventions, regardless of their nutritional status, as per the new UNICEF programming guidance.

Recommended minimum package of interventions

We recommend the following as a **minimum package of interventions** for school-age children and adolescents in all humanitarian contexts.

For 5–19-year olds

- Include this age group in nutrition surveys and assessments that inform the nutrition situation analysis.
- Management of acute malnutrition / wasting / thinness:
  - Screen school-age children and adolescents using MUAC (age buckets), MUAC-for-age z-scores, or BAZ for admission criteria (depending on feasibility in context).
  - Community programming is required in contexts of high food insecurity and nutritional vulnerability (which should include treatment using some form of ready-to-use food).
- Ensure the provision of one nutritious meal per day in school, or, where schools are not operational, collaborate with community interventions such as community distributions, youth groups, or health interventions:
  - Depending on the context, this may be a cooked meal, a take-home ration, or limited to a high-energy biscuit.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  - While school meals are more common for the 5–11-year age range, we recommend considering school meals for the full age range (5–19 years) in all humanitarian contexts, given their heightened nutritional requirements for growth and learning.
- Generate and disseminate guidance on regulating food donations targeting school-age children and adolescents to maximise nutritious and safe foods and minimise UPFs where possible.

For 5–9-year-olds specifically

- Blanket provision of iron-containing supplements (daily if the prevalence of anaemia is ≥40%, or weekly if daily is not feasible or if the prevalence of anaemia is <40%). The daily supplementation dosage is 30–60 mg of elemental iron, whereas the intermittent or weekly dosage is 45 mg of elemental iron. It is recommended that supplements be provided for three consecutive months, followed by a similar period of no supplementation. Supplementation should be carried out in conjunction with public health measures to prevent, diagnose, and treat malaria in malaria-endemic areas.
- Provision of annual deworming medication (WHO's recommendation is that this be provided for all children up to the age of 12 years in high-burden (>20% prevalence of worm infections) contexts; it should be increased to twice per year in populations with a prevalence of infection >50%. This can be adapted to 'intermittent' if regular provision is not possible.

For 10–19-year-olds specifically

- Blanket provision of weekly IFA supplements for girls; ideally, these should be delivered across several platforms such as schools, clinics, and the community. While MMS is currently only recommended during pregnancy, providing daily MMS to all adolescent girls may also be considered in place of WIFAS.
- Blanket provision of iron-containing supplements for boys in high anaemia contexts (>20%; ideally daily, but also weekly or intermittent depending on feasibility in the context). A dosage of 30–60 mg of elemental iron is recommended up to the age of 12 years; after that, there is no recommended dosage – in the absence of a specific dosage recommendation for 12–19-year-old boys, either child or adult supplements could be used while guidance is being developed. Boys can be included in WIFAS programmes alongside girls to simplify programming.
- Nutrition programme implementers should collaborate with other sectors to deliver interventions that inform and empower girls to prevent adolescent pregnancy and early marriage, as mitigating these can have

considerable beneficial impacts on nutritional status, health, and wellbeing. These interventions may be through formal or informal education interventions, peer support groups, or adolescent-friendly SRH services.

- In populations where nutrition vulnerability is high, consider including this age group in general food assistance or CVA/other social transfer programmes, especially for those who are out of school, and in place of community school meals.

For pregnant and breastfeeding adolescent girls

Refer to the package in UNICEF's 2024 programming guidance for women and adolescent girls in humanitarian contexts, which recommends nutritional screening, BEP supplements for all pregnant and breastfeeding adolescent girls, daily iron-containing supplements (preferably MMS, if available), nutrition education and counselling, and empowerment and gender-transformative programming.

For transient populations

Transient populations, such as refugees and migrants on the move, may only be in one location for a matter of hours or days. Any assessments taking place within these populations should consider the nutrition of 5–19-year-olds, such as assessing their anthropometric status, micronutrient status, food security, and/or diets. The blanket provision of iron-containing supplements (IFA supplements or MMS), as well as deworming medication, is also recommended; this is likely to be intermittent since regular follow-up cannot be guaranteed. The management of thinness/wasting is more difficult since follow-up over several weeks is required. However, cross-border collaboration or mobile health units along common routes provide one solution for this. Prioritising this age group for access to nutritious meals, food assistance, or CVA is also possible using these solutions, in place of regular school meals. Food assistance should not include UPFs high in fat, sugar, and salt and should consider the high micronutrient needs of this age group. Empowerment interventions, child protection services, and SRH services should be also prioritised in this group, who are often at high risk of gender-based violence and early pregnancy.

Additional interventions where feasible

While the above list of interventions is our recommended 'minimum package', where feasible, according to the context, the following interventions should also be considered for school-age children and adolescents:

- weight monitoring and management interventions for school-age children and adolescents living with overweight and obesity, including family-based, multicomponent services covering nutrition, physical activity, and psychosocial support;
- the provision of additional micronutrients through fortified staple foods and/or point-of-use micronutrient powders for food-insecure households with school-age children or adolescents;
- the promotion of healthy diets through information campaigns (i.e. to reduce sugar or salt or to increase whole-grain foods, fruits, nuts, and vegetables) (in contexts where food choices are possible);
- the inclusion of nutrition services in adolescent-friendly platforms in health facilities, communities, and schools;
- ensuring access to safe environments and WASH services;
- regulating school or learning-centre food environments by restricting the marketing of unhealthy foods and providing guidance/restrictions to vendors in and around places frequented by school-age children and adolescents – while this is not yet commonplace in stable context, it may be possible in some controlled humanitarian contexts, such as refugee camp settings;
- the prevention of adolescent pregnancy and early marriage through community behaviour change programmes; and
- the provision of high-quality and practical nutrition education and counselling on safe and nutritious diets, which can be integrated into both formal and informal learning environments; such initiatives could include skill-building workshops, school kitchens, and youth-led community gardens.

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Part 1: Introduction

The 2023 Global Humanitarian Overview estimated that approximately one in 23 people required humanitarian assistance in 2022 – more than double the proportion only four years prior[1]. In 2023, it was estimated that 224 million school-age children (5–18 years) across 73 countries were affected by crisis[2]. Of the 103 million people that have been displaced across the globe, approximately half are under 18 years of age[1,3]. Given the increasingly protracted nature of humanitarian crises, many children and adolescents may increasingly spend much, if not all, of this transformative life stage exposed to the effects of environmental, economic, social, and political shocks and hazards[4]. The 'first 8000 days' narrative seeks to highlight the importance of nutrition from conception to late adolescence[5]. School age and adolescence (5–19 years) is a critical phase of growth and development, with implications for nutritional status, health, wellbeing, educational attainment, and productivity in current and future generations[6-8]. School-age children and adolescents, especially girls, are among the most nutritionally at-risk during humanitarian emergencies since they have increased nutritional requirements, often alongside preexisting nutrition deficits and vulnerabilities. They are also more

"Given the increasingly protracted nature of humanitarian crises, many children and adolescents may increasingly spend much, if not all, of this transformative life stage exposed to the effects of environmental, economic, social, and political shocks and hazards."

likely to be exposed to risks such as violence and early pregnancy, and are especially impacted by disruptions to health and education services. Disruptions to food systems during emergencies can result in micronutrient deficiencies, protein/energy malnutrition, or overnutrition due to increased consumption of unhealthy UPFs. All forms of malnutrition in school-age children and adolescents can have lifelong and intergenerational implications.

The closure of schools during humanitarian emergencies, or lack of access to schools in some humanitarian contexts, has a profound impact on the nutrition of school-age children. This was particularly widely recognised during the COVID-19 pandemic, which resulted in schools being closed for extended periods of time across the globe[9]. The lack of access to other services in humanitarian contexts, such as SRH, child protection, WASH, antenatal care, and general health services, can also increase the risk of malnutrition through the increased risk of communicable diseases, adolescent pregnancy, malnutrition during pregnancy, and disempowerment[4].

While there are still evidence gaps on nutrition programming for school-age children and adolescents, there is also an urgent need for practical guidance in the interim to inform nutrition programming for school-age children and adolescents in humanitarian contexts now. This scoping review aims to summarise the existing policies, programmes, and evidence on the nutrition, health, and wellbeing of children and adolescents aged 5–19 years, in order to support a future practical guide. Where possible, this report recognises that different types of humanitarian context (see **Box 1**) may require a different form of response. We also recognise the large age range being covered by this report (5–19 years) and have disaggregated evidence and recommendations into smaller age categories where possible.

- In **Part 1**, we describe the methods used to produce this report and provide an overview of the burden of malnutrition amongst school-age children and adolescents in humanitarian contexts. We also address some of the challenges in estimating this burden.
- In **Part 2**, we summarise some of the key international policies and guidelines that refer to the nutrition of school-age children and adolescents in humanitarian contexts.
- In **Part 3**, we present the findings of our evidence review, detailing the evidence base on existing interventions. We summarise the findings by intervention type and by mode of delivery (platform), as well as discussing the importance of youth engagement in humanitarian contexts.
- In **Part 4**, we draw together six short cases studies from different geographical and humanitarian contexts, to illustrate some of the programme learning from implementors.
- In **Part 5**, we provide our recommendations on the considerations we feel it is critical to incorporate into future formal guidance.

Box 1: Definition of 'humanitarian contexts' in this report

There are various terms used to describe different types of emergencies and humanitarian settings. These terms frequently overlap and are used interchangeably, such as 'disaster', 'crisis', 'protracted emergency', and 'humanitarian context'. For the purposes of this report, we propose an operational definition of a humanitarian context as *"an area affected by an event or series of events that represents a critical threat to the health, safety, security or wellbeing of a community or other large group of people"*.[a]

This definition was chosen as it acknowledges that humanitarian emergencies may be caused by multiple concurrent events; it does not impose a time restriction on the resolution of the emergency; and it encompasses the health and wellbeing of communities. While we include all types of 'emergency' in this report, we recognise that the needs and responses may vary considerably depending on the nature of the crises (natural disaster, conflict, economic crises), the preexisting local context, and the type of response being provided (domestic response vs international response, for example).

a This term is used by sources including WHO, the United Nations Population Fund, and the Humanitarian Coalition.

Methods

This report was prepared using a variety of methods to summarise the latest research, policies, and programmes related to the nutrition of school-age children (5–12 years) and adolescents (10–19 years) in humanitarian contexts and translate the existing evidence and experiences into practical recommendations. The evidence and experiences were gathered via the following methods: (1) a scoping of peer-reviewed journal articles, grey literature, and policy documents; and (2) key informant interviews with selected experts working in nutrition programming in humanitarian contexts.

We searched Google Scholar, Field Exchange, and PubMed (with the last search date being in January 2024) for relevant reviews, metanalyses, and opinion papers related to the health and nutrition of school-age children and/or adolescents in humanitarian contexts. We found 20 relevant papers related to the burden of malnutrition in humanitarian contexts for this age group, and 25 relevant papers discussing interventions. We also searched Google and UN agency websites for relevant policy documents concerning nutrition, food security, health, education, and social protection in relation to school-age children and adolescents, in both humanitarian and general contexts. Our results include 45 relevant policy documents.

We conducted 11 interviews with 18 key informants from six different organisations (WFP, UNICEF, Action Against Hunger (ACF), MSF, Johns Hopkins Bloomberg School of Public Health Baltimore, and Save the Children). All the key informants provided oral consent for the interviews to be recorded for the purposes of notetaking.

For our definition of 'humanitarian contexts', see **Box 1**.

The burden of malnutrition in humanitarian contexts

Data on the prevalence of malnutrition among school-age children and adolescents in humanitarian contexts are scarce. More data are available for adolescent girls than for adolescent boys, and there is very little information on younger school-age children of either sex. More generally, we know there is a triple burden of malnutrition among adolescents across most low- and middle-income countries (LMICs), where stunting, thinness, anaemia, and other micronutrient deficiencies persist, alongside a rising prevalence of overweight and obesity[10]. In 2023, UNICEF considered 36 countries to be categorised as having a humanitarian emergency (i.e. countries that released a UNICEF Humanitarian Action for Children Appeal). Using national survey data from the UNICEF adolescent data portal, we can see that, in adolescents aged 10–19 years, the prevalence of thinness in these 36 countries ranged from 2% in Venezuela to 27% in India, and the prevalence of overweight and obesity ranged from 6% in India to 26% in Haiti. Some contexts, such as those affected by conflict (Sudan, South Sudan, and the State of Palestine), have no data. For all countries, the last available survey data are from 2016, and it is important to note that these are national-level estimates, which are not necessarily focused on humanitarian-affected populations. National estimates likely mask subnational 'pockets' of malnutrition, e.g., malnutrition prevalence specific to displaced populations (see **Annex 1** and **2** for a table and graphs presenting all the prevalence estimates of thinness (BAZ<-2) and overweight/obesity (BAZ>+1), as well as the leading cause of death for adolescent boys and girls). The lack of data on children aged 5–9 years generally, alongside the limited available data specific to humanitarian contexts, exemplifies the current dearth of information on the nutritional status of this age group in these highly vulnerable contexts.

Data are again lacking regarding the diets of school-age children and adolescents in humanitarian contexts. We know that diets for this age group in LMICs are often lacking in fruits, vegetables, and animal products, leading to inadequate intakes of iron and vitamin A[11]. Other challenges documented in LMICs are children going to school without breakfast in many contexts, and, in some contexts, there is evidence of this age group consuming excess amounts of calories and UPFs and beverages, which are high in sugar, salt, and fat[10,12]. Personal and external food environments for school-age children and adolescents can be catastrophically changed during an emergency. Broken food systems in fragile and humanitarian contexts can result in a lack of calories, protein, and micronutrients for this age group and/or reliance on UPFs high in fat, sugar, and salt. This is becoming common for displaced populations, either on the move or in refugee settings, where cooking facilities are limited, and these foods are relatively cheap and convenient. Reliance on humanitarian food baskets

can also have considerable effects on the diets of this age group. In instances where provisions meet all nutritional requirements, this can positively affect diets. However, there are also reports of food baskets resorting to the use of more UPFs due to funding restrictions, as well as of food baskets not meeting the micronutrient requirements for this age group, such as the heightened iron requirements of adolescent girls.

Challenges in estimating the burden of malnutrition in humanitarian contexts

As described above, there is a lack of nutrition data for school-age children and adolescents in emergencies, but also in stable contexts. This means that we often lack information on the pre-displacement or pre-disaster situation for this group. We currently have very few global targets for improving the nutritional status of school-age children and adolescents, besides anaemia prevalence in 15–49-year-old women and girls, meaning there is little incentive to include this group in national surveys. There are no SDGs relating to school-age nutrition. We also lack well-established indicators to assess school-age and adolescent malnutrition, as well as to measure the potential consequences of malnutrition such as physical, mental, and social development[4,13]. Anthropometric assessment faces some additional challenges for this age group, such as accommodating the varying timings of the adolescent growth spurt, and the lack of globally appropriate reference data[13,14]. Where data are collected, they are often not disaggregated by age, sex, and subnational context, meaning that data on adolescent boys, school-age children between 5 and 9 years of age, and refugee adolescents are among the most overlooked populations in data collection and programming efforts[15,16].

Current national health monitoring systems such as the Demographic and Health Surveys (DHS) programme and District Health Information Software 2 (DHIS2) software are widely used across LMICs. However, they often do not include much information on adolescent nutrition, diets, and food environments. DHS recently amended its surveys to disaggregate the prevalence of adolescent (15–19 years) underweight and overweight from that of adults (20–49 years), which will improve national monitoring for this age group[17]. However, there is still no scope for collecting nutrition data on school-age children and adolescents younger than 15 years, and very few countries choose to collect data on adolescent boys.

DHIS2 software is currently being used by governments in 80 countries to collect and analyse routine health data for 40% of the world's population[b]. The software does offer some useful opportunities for collecting nutrition data on school-age children and adolescents; however, many countries do not utilise these functions or else do not prioritise converting the data to indicators. The available indicators in DHIS2 that cover school-age and adolescent nutrition are:

- Number who received deworming medication (age 0–20 years);
- Number screened and treated for diarrhoea (age 0–9 years);
- Number who received iron supplements (girls 10–19 years);
- Prevalence of overweight (5–19 years);
- Prevalence of underweight (girls 10–19 years); and
- Number of consultations with non-pregnant adolescent girls (girls 10–19 years);

The above indicators again highlight gaps in possible data collection for adolescent boys and for children aged 5–10 years. A review of DHIS2 use in 21 African countries found that none of the above indicators were being used in any of the countries reviewed; nutrition data focused on children under 5 years of age and pregnant or breastfeeding women[18]. DHIS2 also has an education management information system which can be used to integrate health and education data that could capture nutrition information for in-school children, however, this option is currently only being used in 11 countries. This lack of routine data on the nutrition of school-age children and adolescents in stable contexts means that there is little precedence for collecting data on these age groups in emergencies. It also makes pre/post-emergency comparisons difficult. If they are not visible before the emergency, they are very unlikely to be visible during the response and recovery.

At the onset of an emergency, or when a context is considered 'humanitarian', response monitoring

b https://dhis2.org/in-action/


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is usually implemented as a continued process for tracking humanitarian assistance delivery compared to targets set out in the humanitarian response plan (HRP). Responsibilities are broken down by 'cluster' or by government department, depending on whether the response is being coordinated nationally or internationally. The cluster approach is where groups of humanitarian UN and non-UN organisations form a leadership structure within each of the main sectors of humanitarian action (water, health, shelter, nutrition, logistics, etc.). The cluster approach can present some challenges for multisectoral responses, which are common when trying to address adolescent malnutrition. For example, school nutrition interventions may require coordination between the nutrition cluster and the education cluster, which can add complexity to already-stretched resources in humanitarian response. School feeding is a key example of where a nutrition intervention does not fall under the coordination of the nutrition cluster. This also means that when clusters are conducting surveys or using tools such as '4W' (who, what, where, when) to monitor response and quantify the needs of the population, school meals, and adolescent nutrition can often fall through the gap between clusters. Issues of cross-sector coordination are also present in domestic-led humanitarian responses where the nutrition of school-age children and adolescent sits across multiple government ministries.

Lastly, one of the biggest challenges for collecting data on school-age children and adolescents in humanitarian contexts is the lack of priority placed on this population by donors and governments. Many humanitarian response priorities focus on 'life-saving' interventions. However, the consequences of malnutrition during the 5–19 age period are not well documented; hence nutrition interventions tend to focus on children aged under five years and pregnant women. Important advocacy data on the consequences of adolescent malnutrition need to be urgently generated to address funding gaps. 'Disability-adjusted life years' (DALY) estimates can be a useful tool for evidencing the contribution of malnutrition to premature deaths. We already have some data on the DALY impacts of anaemia and obesity in adolescents, which need to be more widely utilised. We also need WHO to calculate the DALY impacts of undernutrition and other micronutrient deficiencies on life expectancy for this age group.

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Part 2: Summary of key policies

The UNICEF CCCs[19] is a key policy document for children and humanitarian actions. School-age children and adolescents are mentioned, for the first time in the 2020 version, under the health section ("Maternal and neonatal health" and "Child and adolescent health") and the nutrition section ("Prevention of undernutrition, micronutrient deficiencies, and anaemia in middle childhood and adolescence"). The minimum package of recommended interventions includes: iron supplementation (5–9 years); IFA supplementation (10–19 years); deworming prophylaxis; nutrition education; and counselling and support. Adolescent girls are specified as a nutritionally at-risk group. There is also programming guidance from UNICEF (2024) on 'Protecting the nutrition of women and adolescent girls in humanitarian settings', which has a strong focus on pregnant and breastfeeding adolescent girls[20]. UNICEF also has several relevant nutrition policy documents, which, while not specifically focused on humanitarian contexts, include sections on humanitarian action, such as the 'Nutrition, for Every Child: UNICEF Nutrition Strategy 2020–2030'[21], which includes a section on nutrition in middle childhood and adolescence, and the accompanying 'Programming Guidance: Nutrition in Middle Childhood and Adolescence' (2021)[22].

WHO has an important policy document for Implementing effective action for adolescent nutrition (2018)[23]. While not specific to humanitarian contexts, this document contains a lot of information on priority nutrition actions for 10–19-year-olds. WHO also provides important guidance for the management of acute malnutrition in adults and adolescents in its IMAI manual (2011)[24].

The multi-agency 'Global Accelerated Action for the Health of Adolescents (AA-HA! 2.0)' guidance

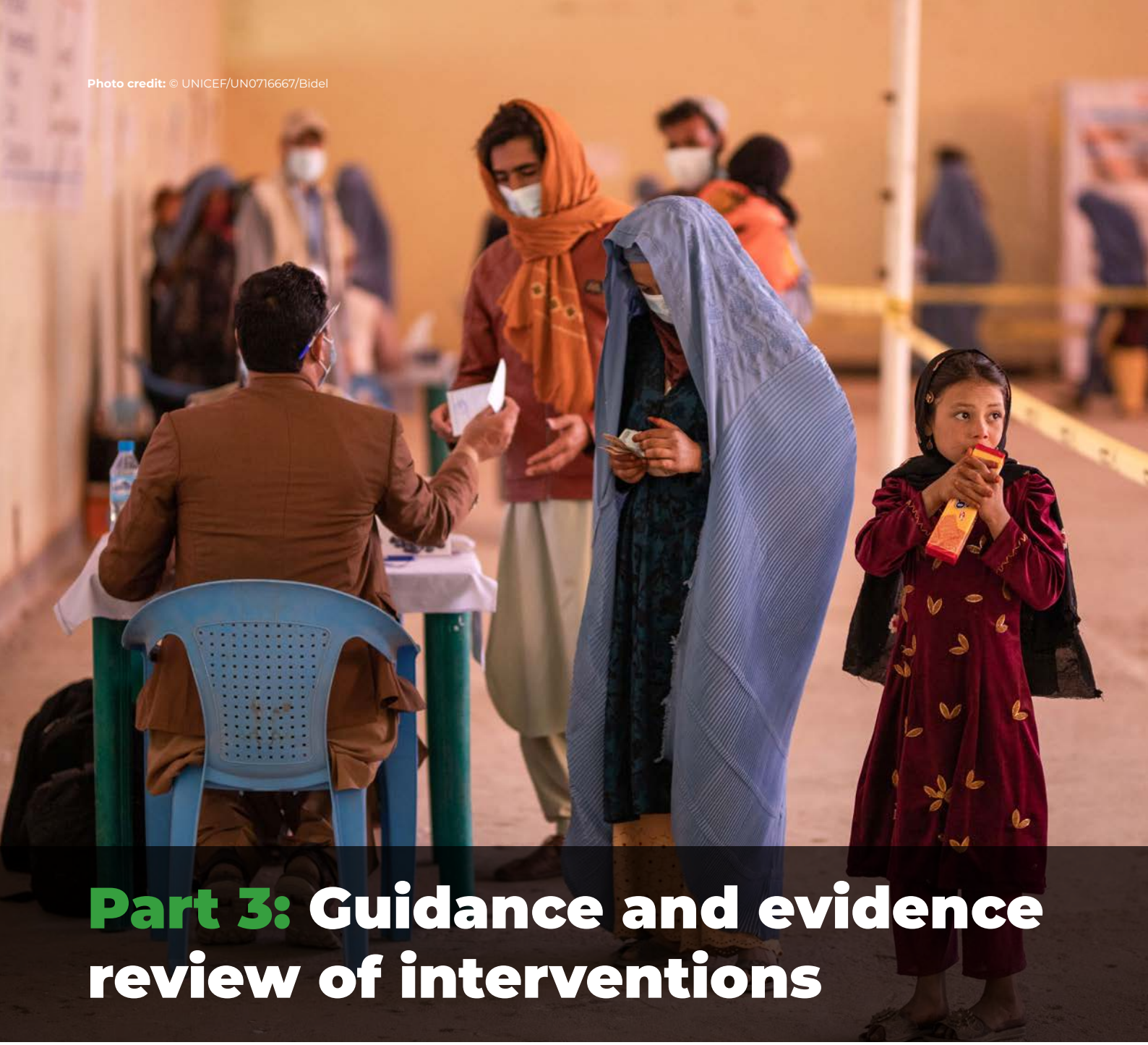
document offers insights into the current health and wellbeing landscape of the world's adolescents, underlining evidence-based solutions and presenting strategies for priority setting, planning, implementing, and evaluating health and wellbeing programmes. It does cover humanitarian as well as development settings. However, the nutrition section for humanitarian contexts is quite short, simply stating "Assess conditions and ensure adequate rations for adolescent population groups according to age, gender, weight, physical activity levels and other key factors, considering both energy and micronutrient requirements". More generally, the document encourages the collection of age- and sex-disaggregated data for adolescents in humanitarian settings, and an increase in resources to address adolescent needs.

The IASC document 'With us & for us: Working with and for Young People in Humanitarian and Protracted Crises' (2020)[25] was produced in consultation with over 500 young people (aged 10–24 years) from more than 20 crisis-affected countries. The guidelines provide an overall framework for working with and for young people throughout the humanitarian programme cycle as well as action tips for adolescent-responsive programming including nutrition, food security, health, and livelihoods.

In stable contexts, many nutrition interventions for this age group are delivered in schools, especially for the younger end of this age bracket (5–9 years). The Inter-Agency Network for Education in Emergencies Minimum standards for education: preparedness response and recovery mentions nutrition programming in schools that address barriers to learning such as school feeding programmes, deworming, communicable disease prevention, and the provision of micronutrient supplements. It also recommends that programmes follow other recognised guidelines such as WFP's School feeding in emergencies, 'School feeding strategy 2020-2030', and 'Considerations for school feeding programmes in refugee settings'.

Besides education, another prominent sector working with this age group in humanitarian contexts is child protection. The Minimum standards for child protection in humanitarian action (CPMS) includes standards on both food security and nutrition, in connection with child protection. While nothing is specifically highlighted for the school-age and adolescent age brackets regarding nutrition, the term 'child' is used throughout and defined as anyone under the age of 18 years.

A summary of all the policies relevant for adolescent nutrition which were reviewed as part of the background research for this report can be found in **Annex 3**.



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Part 3: Guidance and evidence review of interventions

Interventions

In our interviews with implementing agencies in emergencies (WFP, UNICEF, ACF, MSF, and Save the Children), there were very few interventions that specifically target school-age children and adolescent nutrition. There were other nutrition programmes that happened to capture some adolescents, such as those aimed at people living with HIV, or those aimed at pregnant and breastfeeding women, and there were other sector interventions aimed at adolescents that might also include a small nutrition aspect, such as SRH or education interventions. Our scoping review summarises some of the better-evidenced nutrition interventions for this age group and considers evidence and experiences of different delivery platforms and how nutritional status is assessed.

We reviewed the guidance and evidence for the following key interventions as they are the most commonly recommended for this age group in development contexts, such as in the UNICEF 'Programming guidance: Nutrition in middle childhood and adolescence' (2021), or where specifically highlighted during interviews:

1. Provision of nutritious foods
    a. Including school meals, fortification, and general food distribution
2. Wasting/thinness management
3. Micronutrient supplementation and deworming
    a. Including WIFAS
4. Nutrition education and physical activity

5. Healthy food environments
    a. Including regulating school vendors and marketing, and CVA
6. Interventions for pregnant and breastfeeding adolescent girls
    a. Including nutritional screening, BEP supplementation, MMS, nutrition education and counselling, social assistance programming, and empowerment and gender-transformative programming.

It is important to note that a wide range of complementary services and interventions are needed in humanitarian contexts to accompany these nutrition interventions (including child protection, the prevention of gender-based violence, SRH services, livelihood support, education interventions, mental health and psychosocial support, and WASH).

Assessing nutritional status and diets

There is currently a lack of standardised and validated measures of nutritional status and diets for 5–19-year-olds[13]. However, there are a few options which could be standardised and validated for application in humanitarian settings. A more widespread and comprehensive assessment of school-age and adolescent nutrition would result in a better programming response and the ability to target interventions to specific needs.

The accurate assessment of nutritional status and dietary intake usually requires a combination of approaches, such as those outlined by the WFP programming guide for 'Nutrition assessment, counselling and support for adolescents and adults living with HIV' (The 'ABCDE approach', see **Box 2**). However, this is not specific to school-age children and adolescents or to humanitarian contexts and many of the options would require considerable adaptation in settings with limited resources or difficult access.

> *"A more widespread and comprehensive assessment of school-age and adolescent nutrition would result in a better programming response and the ability to target interventions to specific needs."*

Box 2: Nutrition assessment using the ABCDE approach (by WFP)

A – Anthropometry includes measures of body composition, height, weight, weight change, body mass index (BMI), MUAC, waist circumference, waist-to-hip ratio, and lean and fat tissue.

B – Biochemical: haemoglobin, albumin, triglyceride, total cholesterol, low-density lipoprotein, high-density lipoprotein, iron and biomarkers of micronutrients. A biochemical assessment may also include screening for diseases such as diabetes and cardiovascular problems.

C – Clinical: to examine signs and symptoms of abnormalities such as dehydration, oedema, undernutrition, and ascites; taste changes and swallowing difficulties; the condition of the skin, fingernails, and hair; fatigue; and whether a woman is pregnant or breastfeeding. The client's medical history—including stage of disease, medication, and treatments—is also essential information to be collected at this time.

D – Dietary: assessment of pattern of food consumption, dietary diversity, and specific dietary preferences.

E – Exercise or **physical activity**.

Assessing micronutrient status

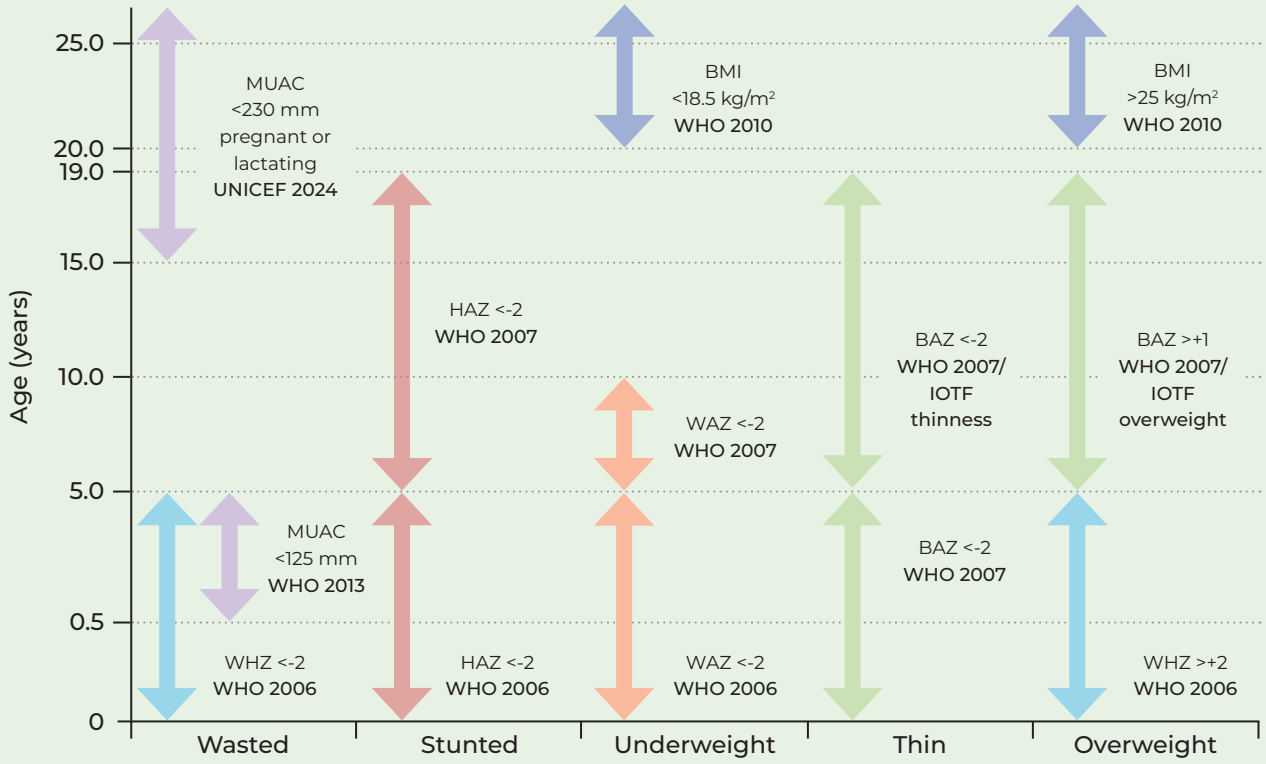
Assessing micronutrient status involves biochemical assessments. Most commonly, this involves a blood sample although certain vitamins and minerals may be assessed using samples from urine, hair, or nails[26]. In clinical and research settings, a variety of tests can be carried out depending on the available resources, but within humanitarian contexts the costs and logistics are often prohibitive. The most common biochemical indicator collected, in both stable and humanitarian contexts, is haemoglobin concentration in capillary blood for the detection of anaemia. Although iron-deficiency anaemia affects all age groups, adolescents, especially girls, are particularly vulnerable; the global anaemia prevalence peaks between the ages of 12 and 15 years when iron requirements are at their highest. Very few other micronutrient deficiencies are assessed in humanitarian contexts unless populations start presenting with overt micronutrient deficiency diseases. There is an urgent need to develop more

field-friendly techniques for the earlier diagnosis of these other micronutrient deficiencies, as well as a need for more widespread anaemia testing in the adolescent population, for example, as part of standard nutritional screenings in clinical settings.

Assessing anthropometry

Anthropometry is a cornerstone of nutritional assessment. However, the lack of clarity on which indicators to prioritise as well as different options to use as a reference and different cut-off definitions make the use of anthropometry for defining malnutrition in individuals aged 5–19 years challenging[13]. **Figure 1** summarises the different anthropometric definitions of malnutrition across age groups and highlights the dearth of agreed anthropometric indicators for the 5–19 years age bracket. Even where there are indicators for this age group (such as thinness (BMI-for-age z-score (BAZ)<-2) and stunting (height-for-age z-score (HAZ<-2)), there is no good evidence on what these mean in practice for this group, and what action should be taken as a result. Assessing nutritional status for the 10–19 years age group comes with additional challenges due to individual and ethnic differences in the timing of the adolescent growth spurt[14].

Figure 1: Summary of the current indicators, references, and cut-offs used to assess anthropometric status, by age group[13].



NB: The **WHO 2006**, **WHO 2007**, **WHO 2010**, **WHO 2013**, **IOTF thinness**, **IOTF overweight**, and **UNICEF** cut-offs are shown. The arrows that extend beyond 25 years are those that also apply to older adults. **BAZ**=BMI-for-age z-score. **HAZ**=height-for-age z-score. **IOTF**=International Obesity Task Force. **MUAC**=mid-upper-arm circumference. **TBD**=to be determined. **WAZ**=weight-for-age z-score. **WFP**=World Food Programme. **WHZ**=weight-for-height z-score.

Most guidelines now encourage the use of BMI-for-age z-score (using WHO 2007 reference) for assessing thinness (BAZ<-2) and overweight (BAZ>+1) in school-age children and adolescents. Weight-for-age z-score can be used in children up to the age of 10 years to assess underweight. Height-for-age z-score can be used to assess stunting up to the age of 19 years; however, the implications and subsequent interventions for those identified as stunted after the age of two years are still being explored.

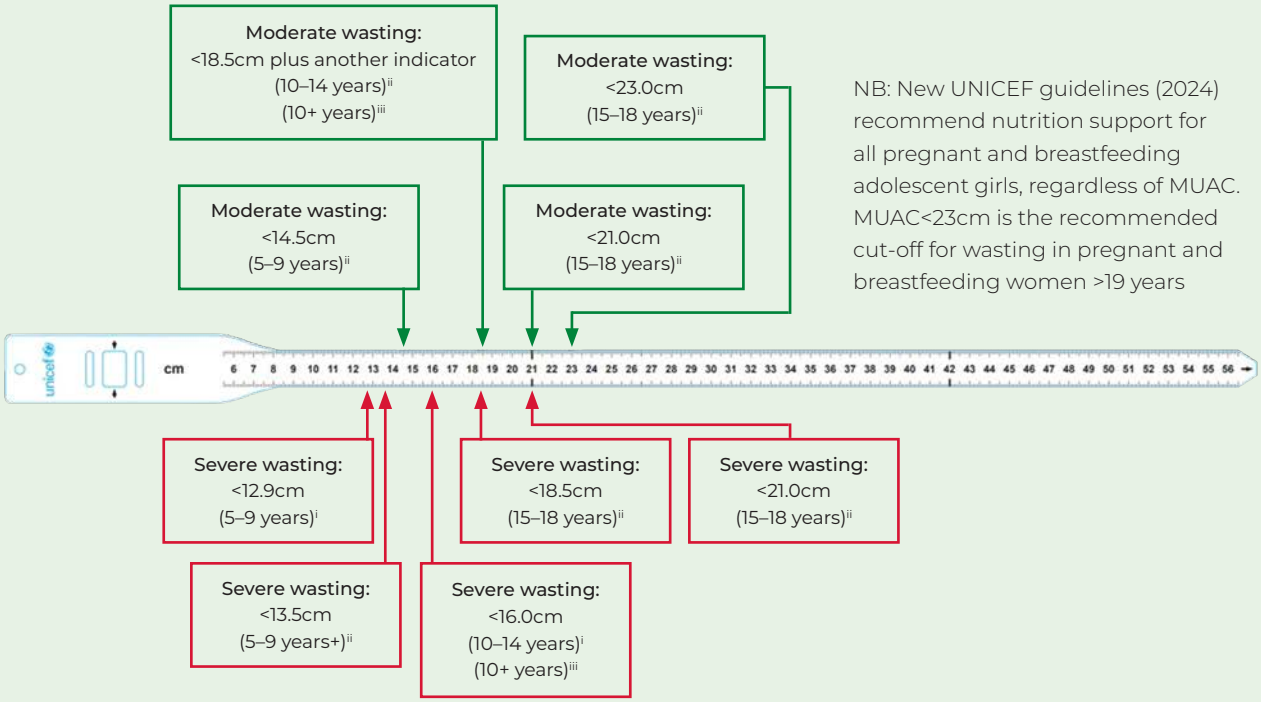
The infeasibility of BAZ in humanitarian contexts, as well as other low-resource or community contexts, has limited the assessment of thinness and overweight in this age group. BAZ requires the assessment of height, which can be time-consuming and requires equipment which is not especially portable. It also requires an accurate assessment of age, which is not always known, and, in these instances, it can take time to obtain the necessary data.

While not widely endorsed for this age group, MUAC is a very simple and quick anthropometric measure that is commonly used for children under five years and pregnant/breastfeeding women. It could also be used for assessing the nutritional status of school-age children and adolescents in humanitarian contexts, in place of BAZ. Studies have found that low MUAC in 5–19 year olds can predict mortality, is correlated with low body fat, muscle mass, haemoglobin, serum albumin, ferritin, zinc, and plasma retinol, and, at the other end of the spectrum, it is associated with higher systolic blood pressure[27-29]. While MUAC cut-offs for defining wasting (and even overweight) in school-age children and adolescents are yet to be determined and validated, there are several guidelines that suggest possible cut-offs for severe and moderate wasting in this age group (see the summary in **Figure 2**). There are also several settings that have used MUAC for identifying wasted 5–19-year-olds, such as Gaza and Syria (see the Gaza case study in **Part 4**). MUAC can also be used in conjunction with other indicators; for example, the IMAI guidelines (WHO 2011) specify that severe wasting in adolescents and adults can be defined as MUAC between 16.1 and 18.5cm plus one of the following: pitting oedema up to the knees on both sides; cannot stand; or sunken eyes.

However, given the large range of ages and growth within the 5–19 years age bracket, key informants interviewed highlighted that the one-size-fits-all cut-offs for MUAC are not appropriate for this age range, even when split into <14 years and >14 years. Interviewees reported that commonly used cut-offs are currently too inclusive, especially for the younger ages in the bracket. MUAC-for-age z-score is one option that could be promoted to overcome this issue; new growth curves for 5–19-year-olds have recently been developed by Mramba et al., however these only use data from African children and adolescents, and so may not be globally applicable[30]. The growth curves can be used to create cut-offs for each age group, if that is easier for programmes to use when assessing patients, rather than the curves themselves. For example, see **Table 1** from Mramba et al. It would probably be more practical to round up cut-offs to the nearest whole centimetre. The use of smaller 'buckets' of age categories within the 5–19 range, each with their own cut-off values, could be another solution, which may be more practical (see **Table 2** for the suggested MUAC cut-offs by Bahwere et al., 2017). While the new UNICEF guidance on maternal nutrition recommends a MUAC cut-off of <23.0cm for targeting supplementation, the recommendation is that all pregnant or breastfeeding adolescent girls be included in in nutrition supplementation regardless of MUAC status[20].

Photo credit: © WFP/Saikat Mojumder

Figure 2: Summary of MUAC cut-offs for school-age children and adolescents



NB: New UNICEF guidelines (2024) recommend nutrition support for all pregnant and breastfeeding adolescent girls, regardless of MUAC. MUAC<23cm is the recommended cut-off for wasting in pregnant and breastfeeding women >19 years

References:

i WHO (2009). Guidelines for an Integrated Approach to Nutritional Care of HIV-Infected Children 96 months–14 years)

ii Sample of national guidelines, and FANTA

iii IMAI guidelines

Table 1: MUAC cut-offs for each age based on MUAC-for-age z-score curves by Mramba et al.[30]

Age in years	Simplified MUAC cut off	Age in years	Simplified MUAC cut off	Age in years	Simplified MUAC cut off	Age in years	Simplified MUAC cut off
(6m–4y)	(12.5)	**8**	14.8	**12**	17.0	**16**	19.3
5	13.1	**9**	15.3	**13**	17.6	**17**	19.9
6	13.6	**10**	15.9	**14**	18.2	**18**	20.4
7	14.2	**11**	16.5	**15**	18.7	**19**	21.0

Table 2: potential MUAC cut-offs by age group, as suggested by Bahwere et al., 2017

Age group	Severe wasting		Moderate wasting	
	Admission	Discharge	Admission	Discharge
5–9 years	<14.0cm	>16.0cm	<14.5cm	>16.0cm
10–14 years	<16.0cm	>18.0cm	<17.0cm	>18.0cm
15–17 years	<20.0cm	>23.0cm	<21.0cm	>23.0cm
18 years and above	<22.0cm	>23.5cm	<22.5cm	>23.5cm

NB: MUAC cut-offs suggested by Bahwere et al., following a review for UNICEF Syria[31]

Besides BAZ and MUAC, other indicators of underweight, wasting, and thinness mentioned in some guidelines include: unintentional weight loss of 5–10% for moderate undernutrition; unintentional weight loss of >10% for severe undernutrition; and the presence of bilateral pitting oedema as an indicator of severe wasting. The IMAI guidelines state that significant weight loss (>5% in six months) should be carefully investigated but should not be used for defining malnutrition. A calf circumference of < 32cm in men and <31cm in women is recommended in Colombian guidelines for diagnosing severe muscle wasting in adults and the elderly; this is also applied to older adolescents on occasion[32]. Although weight-for-height <70%, using the National Center for Health Statistics (NCHS) reference, is an old definition of wasting, it is still sometimes applied to school-age children and adolescents because it provides data up to the age of 18. Indicators that do not require an age assessment can be appealing in some instances, such as for incarcerated young people or child soldiers who might want to conceal their real age.

Most guidelines state the need for anthropometric assessments to be accompanied by a clinical assessment, appetite test, and in some cases, a dietary assessment. As young people can express their own concerns over hunger and weight loss, accompanying anthropometric assessments with some simple qualitative questions may bring further clarity to that individual's needs. Innovative qualitative questions that could help quantify the amount of weight loss could also be considered, such as changes in belt size or clothing getting looser. Other innovative options which might be considered in the future could be hand grip strength as a marker of muscle wasting, and photographic body scanning technology, which can be used to determine body proportions and therefore calculate BAZ.

Assessing diets

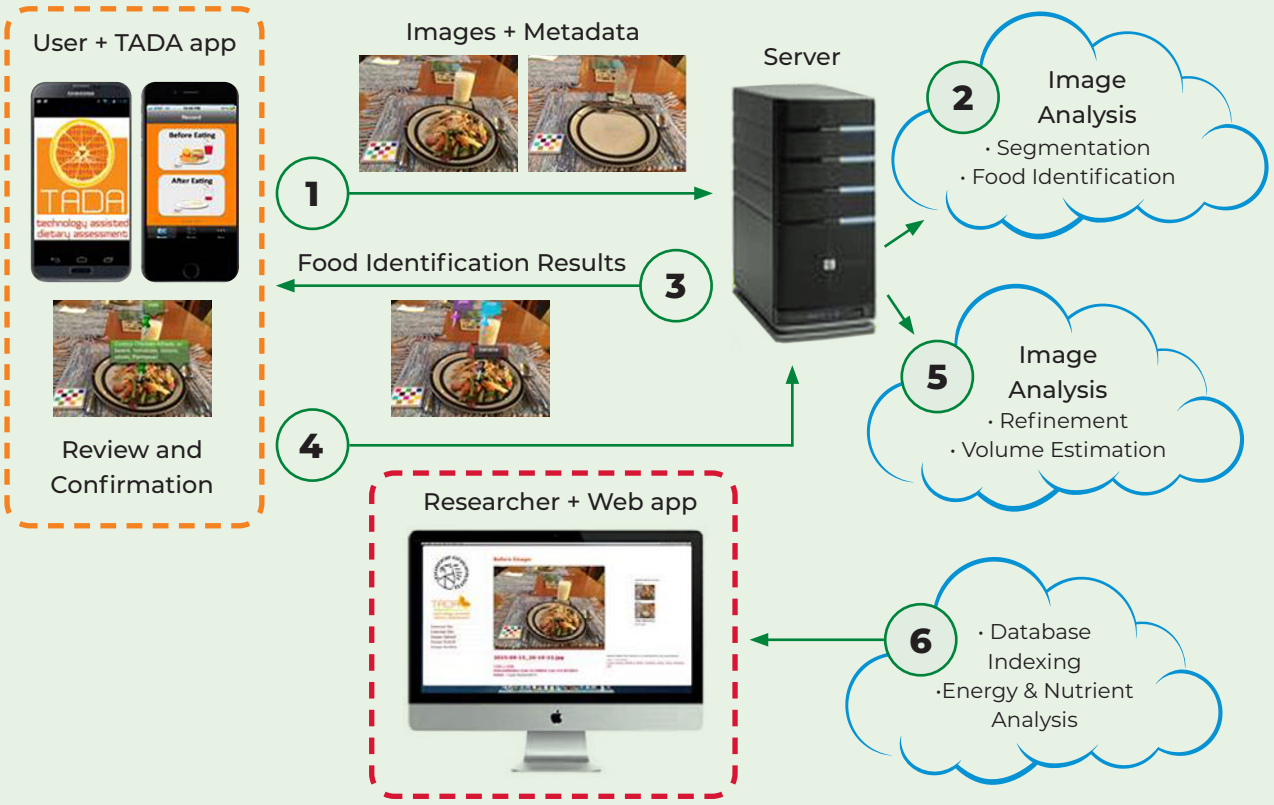
Besides anthropometry, dietary intake and food security data are also critical for guiding appropriate interventions. While there are some standardised tools for assessing the diets of adult populations and households, standardised dietary assessment tools for school-age children and adolescents are lacking in many LMIC contexts. The most common methods in research and development settings are food frequency questionnaires and 24-hour food recalls[12]. However, these are unlikely to be feasible in many humanitarian contexts since they take time and skilled facilitators to implement accurately.

There have been recent advancements with simple tools for assessing diets and food insecurity for school-age children and adolescents in humanitarian settings. The minimum dietary diversity for women (MDD-W) indicator has recently been validated for boys and girls aged 10–19 years from upper-middle and high-income countries, and an adapted version can be used to assess diet diversity adequacy for adolescents from LMICs[33,34]. This simple and widely used tool offers an opportunity to increase dietary data collection among this historically underserved group. However, it is not an accurate tool for assessing individual diet adequacy and targeting individuals in need; rather, it gives a picture of diet adequacy at the population level.

It is important to note that younger school-age children may not have the cognitive and recall skills required for some self-reporting dietary data tools. The use of image-based dietary assessment methods shows promise for improving self-reported dietary intake among school-age children, as well as among adolescents. The 'photovoice' methodology and the Technology Assisted Dietary Assessment (TADA) tool (see **Figure 3**) have both been used in this age group with success. However, they have not yet been used in humanitarian contexts[35]. A new artificial intelligence-assisted mobile phone application called 'Food Recognition Assistance and Nudging Insights' has also been validated for effectively tracking food-group consumption at the individual level in adolescents[36]. It also includes a 'gamified nudges' function intended to improve food consumption, which is currently being assessed in Ghana and Vietnam[37]. These technologies may be useful in some humanitarian contexts where mobile connectivity is functioning.

The 'healthy diets monitoring initiative', currently being conducted by WHO, the Food and Agriculture Organization (FAO), and UNICEF, is aimed at providing consensus on how to measure the 'healthiness' of diets, including for 5–19-year-olds. This should provide some clarity on which tools to use for this age group.

Figure 3: Overview of a TADA image system[38,39]



Step 1: User captures before and after images of an eating occasion with the mobile food record app. The images, along with metadata, are sent to the server. **Step 2:** Initial image analysis completed using colour and other features to identify the foods and beverages. **Step 3:** Food identification results are returned to the user. **Step 4:** User reviews the labels and edits or confirms the labels. **Step 5:** Image analysis refinement and volume estimation completed. **Step 6**: Food and volume are matched to a food composition data base for energy and nutrient analysis.

Household food insecurity is often assessed using the simple 'Food Insecurity Experiences Scale' – a 10-question survey. It has been used extensively in both development and humanitarian contexts but is usually only administered to adults and adolescents over the age of 15 years. While it was previously thought that this questionnaire could provide an overview of food security in households, including those with school-age children and adolescents, evidence suggests that adult-reported food security experiences do not reflect child and adolescent food security experiences[40]. The 10-item CFIES has now been developed and research has found it to be a globally applicable, valid, and cross-contextually equivalent measure of the experiences of food insecurity among school-aged children and adolescents[41]. This tool could be more widely used in humanitarian settings to understand food insecurity from a child and adolescent perspective, rather than that of the household, as reported by an adult.

Interventions: Provision of nutritious foods

Under the heading of 'Provision of nutritious foods', we consider the following interventions to be relevant for school-age children and adolescents in humanitarian contexts:

- school meals programmes; and
- fortification and general food distribution.

WFP is the lead UN agency for school feeding, as well as for other 'direct nutrition' responses such as general food distributions. While WFP does not have a specific objective to target school-age children and adolescents, approximately 27% of its beneficiaries are between the ages of 10 and 19 years (data from WFP's internal database). Internal data from 2018 showed that the majority of adolescents were reached through either general food distribution (42%) or on-site school feeding

(43%); only 2% were reached through school feeding take-home rations, although this is likely to have increased since the COVID-19 pandemic.

School meals programmes

Traditionally, school meals have been used as an incentive for school attendance and better educational attainment. However, the COVID-19 pandemic highlighted the nutritional value that school meals bring to children's lives. While school feeding programmes are usually only aimed at primary schools (i.e. ages 5–11 years), older adolescents are also often reached by this means since many adolescents remain in primary school. In Chad, for example, it has been estimated that 35% of primary school children are adolescents >11 years. School meals in secondary schools should also be considered; for example, WFP estimates that 68% of refugee children and adolescents are enrolled in primary education and 34% are enrolled in secondary education.

When there is an emergency that appears to require and justify the use of food aid, WFP considers school meals programmes as part of the range of programming options. Deciding factors include: the stability of the situation; the state of the current education system and whether there are any political ties that could cause security issues; levels of hunger; the cooperation of other stakeholders; available resources such as teachers, food storage infrastructure at schools, and cooking fuel; and security constraints.

Making school feeding recommendations across all emergency contexts is challenging as different modalities of school feeding work better in different settings[42]. Common options for school feeding include a mid-morning snack, a lunch meal, or take-home rations. The mid-morning snack often consists of porridge made using fortified corn soy blend, or high-energy biscuits that can be served with a cup of milk. A locally sourced (home-grown) example from Jordan is where the mid-morning snack consists of three choices of cheese or a vegetable pastry, served on alternate days, with a fruit and vegetable. A lunch meal usually consists of cereals (for example, rice or maizemeal; 120–160 g); pulses (such as beans or lentils; 40–60 g); and fortified vegetable oil and iodised salt. Take-home rations are similar to the school lunch and therefore usually consist of a one-week supply of cereal and pulses, or porridge, to cook at home. In many locations, take-home rations are now transitioning to cash transfers and can be known as 'scholarships'. Sometimes, they are only provided to girls to encourage families to keep girls in school.

For refugee settings specifically, the 'Considerations for school feeding programmes in refugee settings' (WFP and UNHCR) document aims to ensure that school feeding programmes are of high quality, as consistent as possible across different contexts, provide meaningful coverage for refugee children in school, and ultimately contribute to the commitments outlined in the Global Compact on Refugees, while achieving the SDGs[43]. Programmes that support refugee children and adolescents may be integrated with those targeting the wider population, or may be specifically designed for the refugees in that context. Our case study on Cox's Bazar in Bangladesh (**Part 4**) describes a current example of a school meals programme for refugee children and adolescents.

Since the refocus on the nutritional value of school meals, the UN has launched the School Meals Coalition, which aims to urgently improve and scale up school meals programmes. New attention has also been paid to the nutritional content and quality of school meals, since there is currently no global standard. Some countries have recommendations on the proportion of daily recommended calories, protein, and micronutrients that school meals should provide; however, these are not based on evidence[44]. FAO has been working on developing a process for national governments to set school meals guidelines and standards in their contexts and to develop appropriate menus, starting with a pilot in Cambodia. For emergency contexts specifically, it is important that school feeding programmes are recognised as a nutrition intervention and therefore discussed within both the education and nutrition clusters. School feeding should be included in any '4W' mapping conducted by the nutrition cluster, where it may previously have been excluded as a purely educational intervention.

Fortification and general food distribution

One of the most common ways in which the nutrition of school-age children and adolescents is supported in emergencies is through general food distributions. However, when there is targeted food distribution, it is usually focused on households where there are children aged under 5 years or a pregnant woman, not school-age children or adolescents. Evidence suggests that food supplementation can improve weight gain in undernourished school-age children and

adolescents, especially in very food-insecure contexts[45].

The fortification of staple foods is a common and effective method of preventing micronutrient deficiencies in the general population. There is evidence from small-scale studies on the benefits of vitamin D, calcium, iron, and multiple micronutrient fortification on the micronutrient status of adolescent girls[46]. However, a review conducted in 2020 found only one study that included adolescent boys, and no large-scale preventive nutrition intervention programmes targeting adolescents in LMICs were identified[46,47]. There have been some evaluations of fortified food provision for school-age children and adolescents in emergency contexts. For example, multiple-micronutrient-fortified maize provided through general food distribution in the Nangweshi refugee camp in Zambia was found to reduce vitamin A deficiency in adolescents, and had beneficial signs for iron uptake, but did not reduce anaemia[48]. While the provision of fortified food products is common in emergency contexts, there are not enough data on its effectiveness for meeting the specific needs of 5–19-year-olds, especially school-age children, for whom data are scarce.

Food basket analyses must ensure that the content of food provisions meets the caloric and micronutrient requirements of all population groups, including school-age children and adolescents, who tend to have higher requirements than other groups, including adults (for example, for calcium, iron, magnesium, phosphorous and zinc; see **Annex 4** for an example of the recommended nutrient intakes for 5–19-year-olds).

Intervention: Thinness or wasting management

There is currently a lack of clear guidance on the management of thinness or wasting in school-age children and adolescents. While it is thought that wasting in this age group is not so common in more stable development contexts, it is known to be prevalent in some emergency contexts where there are severe food shortages, such as besieged areas, and in adolescent migrant populations who lack access to food combined with very high physical activity levels. For example, wasting among school-age children and adolescents is thought to be high among besieged populations in Gaza (see our case study in **Part 4**). There are also reports of agencies encountering suspected wasting among populations of Venezuelan migrants in South America, many of whom are adolescents (see the case study in **Part 4**). School-age children and adolescents with comorbidities such as TB, HIV, burns patients, and pre-surgical patients are also at higher risk of wasting. The means for assessing wasting have been discussed above (see the section on 'Assessing nutritional status' in **Part 3**).

Regarding management, the main source of information currently comes from WHO's IMAI guidelines[24]. There are also some national guidelines which detail wasting management in this age group. The IMAI guidelines recommend that moderately thin adolescents and adults require an additional 20–30% caloric intake, which should be provided, in addition to their normal intake, in the form of frequent smaller amounts of locally available nutrient-rich food. If available, the person can be enrolled in a programme in which nutritional assessment, counselling, and supplementary feeding are available. Adolescents and adults with severe malnutrition may be managed as outpatients in a food-by-prescription programme, if they are able to walk and do not have a medical condition that requires hospital admission. Those with severe malnutrition should be treated as inpatients if an outpatient therapeutic feeding programme does not exist. If they are able to consume food, inpatients with severe malnutrition require therapeutic milks (F75 or F100) or ready-to-use therapeutic foods (RUTFs). It is unclear why the guidance uses these two formulations interchangeably, when they were designed for specific functions in children aged 6–59 months – F75 is intended to stabilise the patient and avoid refeeding syndrome, whereas F100 is intended for use after stabilisation and to encourage weight gain.

The guidance notes that these should not be combined with additional vitamins and minerals, since they are already fortified at levels considerably higher than the recommended dietary allowance, to correct deficiencies and allow for the rebuilding of lost tissues. Outpatients can be provided with RUTF, ready-to-use supplementary food (RUSF), or fortified blended flours, depending on availability. RUTF and RUSF products have most widely been designed for use in children aged six months to five years; there are also similar products available for pregnant and breastfeeding women, and a high-energy biscuit designed for adults called 'BP100'. Ready-to-use foods are very convenient in

emergency contexts; they are easily transported, have long shelf lives, and do not require cooking. They can deliver large amounts of calories without the need to eat bulky meals. However, key informants reported in interviews that the high sugar content of RUTFs has affected their palatability, and they are therefore difficult for some adolescents to eat. They are also relatively expensive and there is limited availability globally, meaning that there is often a shortage for children aged less than five years with wasting, so it may be difficult to access these resources for 5–19-year-olds, who in the general population have a lower mortality risk than younger children.

Regarding dosage, the amount of food given per kilogramme of body weight is much less for adults than for younger children, and decreases with increasing age, reflecting the lower energy requirements of adults. The IMAI recommended amounts for different ages are given in **Table 3**, alongside the volumes of F75 and F100 therapeutic milks. The recommended dosage starts from seven years of age, leaving a gap in dosage recommendations from 5 to 7 years. **Table 4** shows the recommended dosage of RUTF and BP100, based on the person's weight, which is present in some national guidelines.

Table 3: IMAI guidelines dosage table for the initial treatment of severely malnourished adolescents and adults[24]

Age (years)	Daily energy requirements[i]		Volume of diet required (ml/kg per hour)[ii]	
	Kcal/kg	KJ/kg	F-75	F-100
7-10	75	315	4.2	3.0
11-14	60	250	3.5	2.5
15-18	50	210	2.8	2.0
19-75	40	170	2.2	1.7
>75	35	150	2.0	1.5

[i] Individual needs may vary up to 30% from these figures depending on sex, activity level, infections, and other factors.

[ii] F-75 and F-100 are therapeutic milk products designed to treat severe malnutrition. Ingredients include concentrated milk powder, food oil, and dextrin vitamin complexes. The designations mean that the product contains 75 and 100 kcals per 100 ml, respectively.

Table 4: Suggested dosage of RUTF for those weighing between 3 and 60 kg, as per some national guidelines

Weight (kg)	RUTF paste		RUTF sachets (92g)	
	Grammes per day	Grammes per week	Sachets per day	Sachets per week
3.0–3.4	105	750	1 ¼	8
3.5–4.9	130	900	1 ½	10
5.0–6.9	200	1400	2	15
7.0–9.9	260	1800	3	20
10.0–14.9	400	2800	4	30
15.9–19.9	450	3200	5	35
20.0–29.9	500	3500	6	40
30.0–39.9	650	4500	7	50
40–60	700	5000	8	55

Source: multiple national guidelines

The IMAI guidance also notes that severely malnourished adolescents are susceptible to hypothermia, hypoglycaemia, and dehydration, and these should be assessed and managed as per WHO guidance. An improving appetite indicates the beginning of the rehabilitation phase, during which adolescents should be encouraged to eat as much as they feel like. Traditional foods can be eaten with added oil, mineral mix, and vitamin mix, in addition to therapeutic foods.

Normative guidance currently lacks clear discharge criteria for treating thinness/wasting in 5–19-year-olds. However, there are some common discharge criteria for outpatient programmes mentioned in some national guidelines. These include:

1. weight-for-height >85% NCHS for two consecutive visits or 14 days;
2. BAZ ≥ -3 or -2 for two consecutive visits or 14 days (depending on the BAZ cut-off for admission);
3. MUAC ≥ 125–185 mm for two consecutive visits or 14 days (depending on the MUAC cut-off for admission);
4. MUAC-for-age ≥ -3 z-scores for two consecutive visits or 14 days (MSF 2023); and
5. the absence of nutritional oedema for two consecutive visits or 14 days.

MSF is currently developing better guidance on wasting management in adolescents. It will focus on management in medical patients with comorbidities and will not be specific to emergency contexts. Given the current lack of treatment products for this age group, the treatment will likely recommend the weight-based prescription of ready-to-use foods, similar to those designed for wasting in younger children, and will also encourage local RUTF recipes where possible.

Wasting in 5–19-year-olds warrants updated guidance. Guidance should specify admission and discharge criteria and outpatient management details, such as when and how to perform an appetite test, and simple dosage recommendations. The development of a specialised nutritious food product that is tailored for this age group, palatable, cost-effective, considers the implications of 'refeeding syndrome', and does not compete for resources with children aged less than five years, could have a huge beneficial impact on treatment coverage.

Intervention: Micronutrient supplementation and deworming

It is well-evidenced that micronutrient supplements have a positive impact on the micronutrient status, growth, and development of school-age children and adolescents. However, there is less evidence from humanitarian contexts specifically and challenges remain when it comes to finding effective delivery platforms for reaching those most in need.

Although there is a lot of heterogeneity across different studies, with varying impacts on different outcomes and for different age groups, a meta-analysis found that MMS through fortified beverages and intermittent iron supplementation can reduce anaemia in school-age children and adolescents[49]. The evidence was less convincing for multiple micronutrient powers. There is also some evidence suggesting that iodine supplementation in children aged 10–12 years leads to an improvement in cognitive function and fine motor skills, and zinc supplementation can improve serum zinc concentrations. However, calcium and vitamin D supplementation do not demonstrate a clear impact on vitamin D levels or parathyroid hormone[50,51]. The available evidence suggests that IFA supplementation is a crucial intervention for anaemia prevention and treatment among adolescents; pre-conception folic acid is also critical for preventing neural tube defects in offspring[52,53]. Micronutrient supplementation is often coupled with deworming tablets to maximise absorption and reduce the risk of anaemia.

IFA supplementation

5–9-year-olds: Specific recommendations on supplementation and anaemia prevention for school-aged children aged 5–9 years have not yet been established. However, for children 2–12 years of age, point-of-use fortification of foods with iron-containing micronutrient powders is recommended by WHO in settings where childhood anaemia prevalence is 20% or higher[54]. However, in practice, the anaemia prevalence in 5–9-year-olds is often not known and the burden of anaemia is often estimated using prevalence data for children under five years of age.

10–19-year-olds: Current WHO guidelines recommend WIFAS for all menstruating adolescent girls and adult women living in settings with an anaemia prevalence of 20% or higher, to improve their haemoglobin concentrations and

iron status and reduce their risk of anaemia[55]. For girls and women who live in settings where anaemia prevalence is 40% or higher, daily iron supplementation is recommended. However, these recommendations have not been enacted at a large scale in most LMICs and there is an urgent need to advance the implementation of micronutrient interventions among adolescents, with rigorous evaluation and deliberate plans for national scale-up. In addition, very few micronutrient intervention studies have been conducted on adolescent boys, hindering the development of evidence-based recommendations for this group.

There are examples of WIFA programmes for adolescent girls in humanitarian contexts, but such programmes are certainly not universal. One positive example is from Afghanistan, where school-going adolescent girls are being provided with WIFAS to improve their school performance and boost pre-pregnancy stores of iron[4]. The programme involves a 'fixed-day', once-a-week approach for teacher-supervised IFA administration, coupled with deworming tablets and nutrition and SRH counselling. An evaluation of the programme in 2018, conducted with 1600 adolescent girls, found higher mean haemoglobin levels, increased awareness of anaemia, and increased knowledge of symptoms associated with anaemia in girls exposed to the WIFAS programme[56]. After the Taliban take-over in 2021, the school-based programme changed to a community-based programme, in which health workers go door to door administering the supplements, which achieved even better coverage and impacts than the school-based programme[57].

Multiple micronutrient supplements

10–19-year-olds: The recent Lancet Series on Maternal and Child Undernutrition Progress highlighted the strong evidence supporting MMS rather than IFA supplementation during the antenatal period and suggested a potential benefit of extending this to adolescent girls[58]. MMS is currently recommended for pregnant women in humanitarian emergencies in a joint United Nations statement (WHO, UNICEF, WFP) (more detail on MMS in humanitarian contexts can be found in the Emergency Nutrition Network report 'Multiple Micronutrient Supplements in Humanitarian Emergencies' (2024))[59]. WHO has also called for additional research to clarify the best formulation of MMS to provide to adolescents and women of reproductive age on an intermittent basis. At present, very few studies have examined MMS among adolescents. WHO recommends that countries have a national strategy for the prevention and control of micronutrient malnutrition and the choice of intervention should include a consideration of the costs, cost-effectiveness, feasibility, and acceptability. However, in most LMICs there is insufficient information to allow governments to develop evidence-based national strategies to address multiple micronutrient deficiencies in adolescents.

Product practicalities

While WIFAS are recommended by WHO for all menstruating adolescent girls in high anaemia settings, supply-chain challenges of IFA supplements have hampered scale-up in many settings. Adolescent girls require WIFAS using a distinct formulation of folic acid as per the WHO guidelines (60 mg elemental iron and 2.8 mg of folic acid)[60]. Although this specific formulation of IFA tablets became available in the UNICEF supply catalogue in late 2019, the formulation was only added to the WHO Essential Medicine List (EML) in 2023, meaning that governments have been constrained from purchasing them[61]. Many programmes that are implementing WIFAS are still using tablets designed for daily consumption by pregnant women. In humanitarian contexts, where resources and supply chains may be especially stretched, besides not meeting the folic acid needs of adolescents, daily IFA tablets may be in limited supply and therefore prioritised for pregnant women. It is hoped that the supply of WIFAS will be more accessible with the recent addition to the EML and that the WHO WIFAS recommendation will be more widely implemented, in both development and humanitarian settings.

Besides WIFAS, there are no MMS products, such as multiple micronutrient powders or tablets, specifically designed to meet the needs of school-age children and adolescents, which may explain their mixed results with regard to beneficial impacts in this age group. Micronutrient powders designed for children aged <5 years will likely not contain high enough quantities of micronutrients to reach recommended daily intakes for 5–19-year-olds; conversely, the amounts in products designed for pregnant women will likely be too high. Simple, packaged products are especially useful in humanitarian contexts, where it can be harder for people to meet their dietary needs with home foods. Key informants expressed that the lack of products designed specifically for the 5–19 age group is limiting nutrition programming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for them in humanitarian contexts. Another constraining factor is poor-quality control protocols on micronutrient supplementations aimed at adults. Stricter drug regulation policies for adult and adolescent micronutrient supplements, such as those applied to micronutrient powders for children, would allow more organisations to procure and use higher-quality supplements.

Intervention: Nutrition education and physical activity

Nutrition education has been shown to effectively improve the diets and food choices of school-age children and adolescents in some settings and has been implemented in some humanitarian contexts[62]. Schools can play a pivotal role in helping students establish healthy eating behaviours, both in development contexts and in humanitarian contexts where schools are still functioning. Nutrition education is one of the few interventions that has been implemented in LMICs which can tackle not only undernutrition but also overweight and obesity.

Schools are one of the most appropriate sites for health education interventions targeting children. Despite this, there are currently few evaluations of school-based nutrition education interventions in LMICs; a systematic review of school-based interventions targeting the nutrition, physical activity, and body weight status of African children identified only nine interventions, conducted in two African countries: South Africa and Tunisia[63]. FAO keeps an updated list of evidence on its website.

Nutrition education can also be implemented in community settings, to reach out-of-school adolescents and when schools are not functioning in emergencies. For example, community groups such as The Girl Scouts movement often provide nutrition education; there are peer-to-peer nutrition education programmes such as the 'Motivator Girls' programme in Ethiopia; and mass media campaigns or social media campaigns can also provide nutrition education messages. Health centres can also play a role in providing nutrition education, especially when combined with other services aimed at school-age children and adolescents, such as SRH services. For migrant children and adolescents, it is possible to provide short nutrition counselling messages while other health or nutrition services are being provided, such as micronutrient supplements.

Nutrition education can also be promoted as a tool for disaster preparedness[64]. The Sendai Framework for Disaster Risk Reduction 2015–2030 emphasises the importance of embedding disaster preparedness in daily life[65]. Evidence shows that school-based education programmes can both enhance disaster preparedness and reduce vulnerability for school-age children and adolescents, and can also effectively increase children's nutrition knowledge and promote healthy eating habits[66-68]. Implementing school-based nutrition education programmes that include disaster preparedness may help prevent malnutrition-related morbidity and mortality during crises; these can be implemented in stable contexts by way of preparation but also in contexts that are already consider 'humanitarian'.

Box 3: The importance of mental health in emergencies and its connection to nutrition

Mental health disorders and substance abuse are the leading cause of years lost to disability among the adolescent age group globally[69]. Anxiety, depression, and traumatic stress are even more likely to affect school-age children and adolescents in humanitarian contexts. For example, a study of Ukrainian adolescents revealed that those exposed to the war were more likely to screen positive for psychiatric conditions. National-level estimates indicated a substantial increase in those screening positive for depression, anxiety, psychological trauma, eating disorders, and substance use disorder since the start of the war[70].

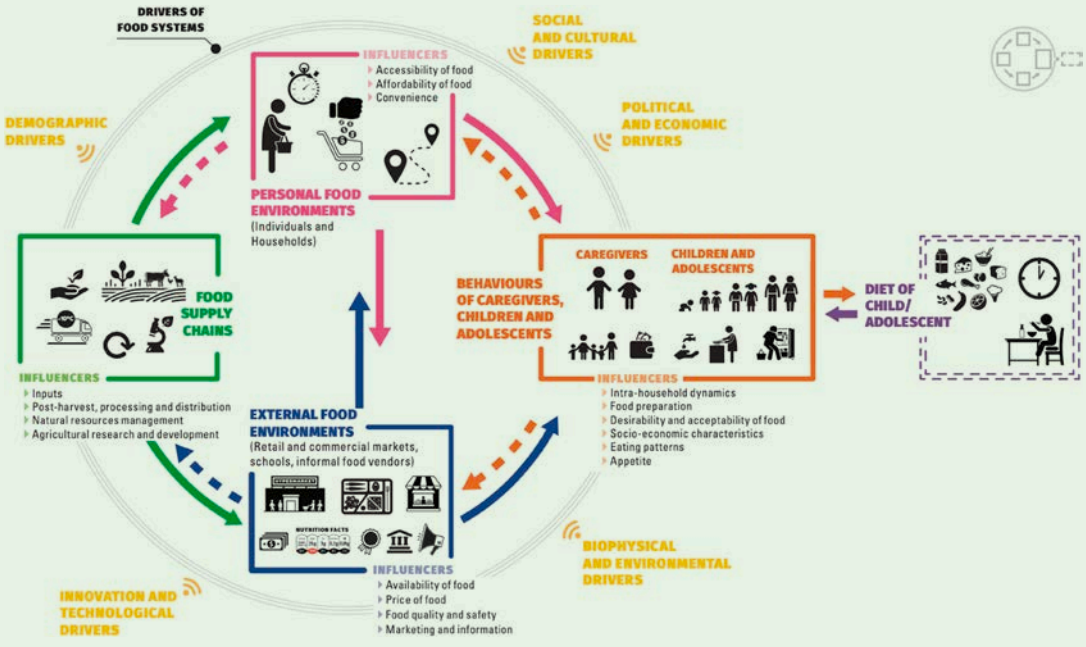
While mental health and nutrition programming are commonly two very separate sectors, they are fundamentally linked to one another. Malnutrition can impact mental health through stress related to food insecurity and through the lack of key nutrients important for neurotransmission[71]. Conversely, mental health can impact nutritional status through a loss of appetite and lack of motivation for health and hygiene practices. They are also linked through a complex and interrelated set of other determinates[72].

Given the huge impact that humanitarian situations can have on both the mental health and the nutritional status of school-age children and adolescents, it is important to establish connections between these two fields of practice. **Adolescent-Friendly Spaces** have been successfully implemented in numerous humanitarian contexts, with evidence that they can significantly reduce gender-discriminatory practices among adolescents, improve overall wellbeing in adolescent girls, mitigate threats to mental health, and support development[73]. Child-friendly spaces for school-age children have had similar beneficial effects. These spaces (either dedicated physical spaces, or multiuse spaces that are dedicated to children and adolescents during certain times) can provide a safe and supportive environment, as well as offer opportunities to learn life skills and gain empowerment through training and community activities. Nutrition education, the provision of healthy meals or snacks, nutritional status monitoring, micronutrient supplementation, health screening, and SRH services can all be integrated into child and adolescent-friendly spaces to provide a cohesive package.

Intervention: Healthy food environments

The food environment comprises the physical, economic, political, and sociocultural contexts within which each consumer engages with the food system. The 'Innocenti Framework', which present the food system from a child and adolescent lens, divides the food environment into 'personal' and 'external' (see **Figure 4**).

Figure 4: Innocenti Food Systems Framework



External food environments include marketing and information, regulation, the price of food, food and water safety, and food availability. Humanitarian contexts usually have disrupted external food environments, where food is less available, less safe, prices are higher, and access to helpful information is more difficult. Higher food prices can result in lower dietary diversity and limit access to nutritious and safe foods – UPFs such as 'super noodles' are often cheaper and more accessible. Access to fresh food such as fruits and vegetables can be especially challenging in humanitarian contexts. Emergencies can also be exploited by food retailers to promote unhealthy products, such as donations of high-sugar yoghurts for school children.

The AH-HA! 2.0 Report from WHO sets out a large number of recommendations for improving the nutrition of school-age children and adolescents. They are largely focused on the food environment, although not specific to humanitarian settings[74]. Their recommendations cover the structural/environmental level, organisational level, and individual level; they are summarised in **Annex 5**.

There are very few evidenced interventions that aim to improve the food environments of school-age children and adolescents in either development or humanitarian contexts. Most of the evidence comes from high-income settings. Schools can regulate and improve the food environment by promoting the intake of fruits and vegetables and limiting access to high-sugar beverages[49]. The regulation of marketing aimed at children and adolescents, such as marketing on TV or close to school gates, can also improve food environments for this age group.

One example of a food environment intervention from a humanitarian setting is the Bhalo Khabo Bhalo Thakbo – BKBT ('Eat Well, Live Well') campaign in Bangladesh, which was co-designed with adolescents and used learnings and experiences to build a social movement[75]. It aimed to activate adolescents' agency and trigger both individual and collective action towards improved food choices. The campaign was built around two fundamental insights generated from formative research: (1) adolescents have dreams for their lives but find it difficult to "untangle" their dreams from the more restrictive ambitions that their parents have for them; and (2) adolescents recognise that in order to achieve their dreams, they need powerful bodies and minds "nourished" by nutritious food. Furthermore, the formative research revealed a limited availability of nutritious foods for adolescents, especially around schools. Popular snacks included packaged biscuits and cakes, chocolate, crisps and foods prepared by street vendors such as deep-fried puri (deep-fried bread), singhara (deep-fried potato pockets), and jhalmuri (puffed rice with fried vegetables and spices). The BKBT campaign consisted of key phases: the catalyst "my dream, my decision" phase; the pledge ("I will use my pocket money to buy nutritious snacks"); and the pledge in action. Social media and school-based activities were used to implement the campaign. The baseline survey found that only a few adolescents (16%) had access to the internet and even fewer (5%) regularly looked at Facebook. However, when the COVID-19 pandemic hit, they were forced to use internet-based activities only. Despite poor access to the internet prior to the pandemic, a social media-focused intervention proved to be an effective strategy for targeting this group since internet usage increased dramatically. By building a narrative that tapped into adolescents' motivations, the BKBT campaign was able to spark adolescents' interest in and commitment to improving their consumption of nutritious foods. Other humanitarian settings could learn from this example, to spark youth-led improvements to food environments. Another example of a strong social movement campaign is from Ukraine: see more detail in the Ukraine case study in **Part 4**.

CVA

Personal food environments entail affordable and convenient access to food. Access to and the affordability of food can be improved through CVA programmes. CVA can be implemented quickly and with few overhead costs, making them an effective response in some emergency contexts. However, they do require a functioning food system in order to have a positive impact on nutrition. They are not usually targeted at school-age children and adolescents but more often at vulnerable households, or households with children aged under five years. There is evidence that CVA can improve household diets but their specific impact on school-age and adolescent nutrition has not been assessed[76]. CVA can have a positive impact on keeping girls in schools and therefore reducing adolescent pregnancy[76]. School attendance also allows access to school meals, if available, which can positively impact nutrition. A Global Nutrition Cluster (GNC) mapping of current research gaps and priorities in nutrition in emergencies also highlighted that, compared to children's nutritional

status, there is a dearth of evidence on the impact of CVA on the nutritional status of women and adolescent girls, with the available studies showing mixed effects on anthropometric outcomes[77].

CVA can be used in place of direct food provision, which has the benefit of supporting local markets and encouraging fewer logistics for implementing organisations. However, it is important that the CVA amount has been considered to meet the caloric and micronutrient needs of the population they intend to serve, and that there is a diversity of foods available. A report documenting a scurvy outbreak among refugee south Sudanese adolescent boys illustrates this point. The boys were being provided with cash in place of food baskets, but the cash value provided was not enough to meet their full nutritional needs, hence they were choosing to only buy calorie-dense cereals[78].

While there is little evidence in the literature of CVA implementation for school-age children and adolescents, the IASC has issued a guidance document entitled 'With us & for us: Working with and for Young People in Humanitarian and Protracted Crises', which includes several recommendations related to CVA for adolescents and young people[25]. For example, besides the need to meet the specific caloric and micronutrient needs of this age group, it also mentions the need to ensure that all young people are aware of distribution sites and timings for CVA programmes, and to consider the needs of remote populations, female- and adolescent-headed households, literacy barriers, etc. Direct provision of CVA is more appropriate for the older end of the adolescent age range, while school-age children and younger adolescents can benefit from CVA directed towards their households.

Interventions for pregnant and breastfeeding adolescent girls

Interviews with key informants suggest that supporting the nutrition of pregnant adolescent girls as part of a general programme for pregnant women is one of the most common interventions for this age group in humanitarian contexts, and is often the only intervention provided. Pregnancy complications and unsafe abortions are the leading causes of death among 15–19-year-old girls globally[79]. Even in the 10–19-year age bracket, maternal conditions are the leading cause of death among girls in some humanitarian contexts (see **Annex 1**). Besides the risk of death, being pregnant as an adolescent results in nutrition partitioning, where nutrients are prioritised for the developing foetus rather than the developing mother, which disrupts her growth and development, resulting in lifelong impacts. Babies born to adolescent mothers are also more likely to be pre-term, of low birth weight, small for their gestational age, and underweight in childhood[80,81].

New programming guidance from UNICEF (2024) to 'Protect the nutrition of women and adolescent girls in humanitarian settings' provides practical guidance on assessing the nutrition situation, providing interventions, prioritising interventions, and monitoring impact[20]. UNICEF recommends six nutrition interventions for pregnant and breastfeeding women and girls in humanitarian settings:

- nutritional screening;
- macronutrient supplementation: BEP supplements;
- micronutrient supplementation: iron-containing supplements;
- nutrition education and counselling; and
- empowerment and gender-transformative programming.

As mentioned in the 'Assessment' section of this report, UNICEF guidance recommends a MUAC cut-off of <23 cm for identifying pregnant and breastfeeding women in need of nutritional recovery programmes. However, for pregnant or breastfeeding adolescent girls (defined as <19 years of age), they recommend they should all be included in contextually appropriate interventions, regardless of their MUAC measurement.

In almost all nutrition programming for pregnant women and girls, the services received by adolescent girls are not tailored for them specifically nor are they additional to what is being provided as standard to all undernourished pregnant women. In multiple sub-analyses of adolescent mothers receiving nutrition interventions in pregnancy, we find that adolescent mothers do not respond as well as older mothers to these interventions, suggesting that they have different or greater nutritional needs, which are not being met[82,83]. A recent review of BEP programmes by WFP and GNC highlight that often BEP programmes provide the same supplementation to women of all ages rather than increasing calories or

micronutrients to recognise the additional needs of growing adolescent girls[84].

Since pregnancy has a profound impact on the nutritional status of adolescent girls, preventing adolescent pregnancy can also be considered a 'nutrition-sensitive' intervention. SRH, including contraceptive methods, is usually a priority health service targeting adolescents in emergencies. Empowerment and gender-transformative programming, mentioned in the UNICEF guidance, can be another means of preventing further early pregnancies. Our case study below from Cox's Bazar further illustrates this topic by detailing the 'chaperone programme' for adolescent schoolgirls.

Delivery platforms

Besides the interventions themselves, how to effectively deliver interventions to school-age children and adolescents is still a big question for those working in this sector, not only in humanitarian contexts but in development contexts too[85]. Since this age bracket ranges from five to 19 years, it is unlikely that one type of delivery platform will suit all ages. Younger children are likely to be more dependent on their parents/caretakers for accessing services and information, whereas adolescents may be more independent and less likely to be in school. Using a combination of various platforms such as schools, the community, clinics, and media has also been found to be successful in some development contexts.

For humanitarian contexts specifically, different types of emergencies will require different types of platforms. Below are some considerations, noting that each context is unique and will require a tailored response.

PROTRACTED CRISES WITH CAMP SETTINGS (such as refugee camps or internally displaced person (IDP) camps): In settings where displaced people reside in camps for months or years, it is possible to have some semi-permanent structures that can deliver nutrition interventions for adolescents. Health centres and distribution sites in camps should ensure that they are youth-friendly. Specially designated adolescent-friendly spaces or child-friendly spaces should consider incorporating nutrition interventions into their services or referring to appropriate services. Schools or learning centres can be set up in camps, and these can play a vital role in delivering multiple types of interventions, including nutrition, to this age group. Globally, 84% of learners who are not in school live in areas of protracted crisis; this represents approximately 78 million school-age children and adolescents[86]. The nutrition sector should collaborate with the education sector to provide learning spaces for children and adolescents in protracted crises where they can also access nutrition interventions. Our case study from Cox's Bazar refugee camp (see **Part 4**) provides an example of the nutrition and education sectors collaborating to support the health and development of 5–19-year-olds.

RAPID ONSET EMERGENCIES (such as sudden conflicts or natural disasters): In these settings, people may be forced to find temporary housing and their access to food and cooking facilities might be disrupted, along with their access to routine services. Conflict, natural disasters, and pandemics like COVID-19 have all had major impacts on how schools and health clinics can function. For example, with climate change now having direct effects on everyday life, schools have been forced to close in Southeast Asia and the Sahel region in 2024 during periods of extreme heat[c]. Schools in South Africa have had to close at times due to drought. Keeping schools or learning centres open in humanitarian contexts is vitally important for delivering nutrition and other interventions; this should therefore be a priority when security and safety permit it. If schools are closed, the education sector may have lists of school-age children in the area which can be used to inform community distributions or take-home school meals. Taking children to 'holiday camps' away from conflict zones has also been used in some contexts, and social media or online platforms have been used to deliver nutrition interventions (see our case study from Ukraine in **Part 4**). Flexible and integrated adolescent-friendly health services, such as temporary clinics that are community-based and mobile, should also be used.

SLOW-ONSET EMERGENCIES (such as droughts or economic crises): As some services and infrastructure may still be functioning in these contexts, schools, clinics, community spaces, youth groups, peer-to-peer education, community health workers, religious leaders, social media, TV, text messages, and posters can all be utilised to reach adolescents with different nutrition interventions.

c https://www.theguardian.com/world/2024/mar/18/south-sudan-closes-schools-in-preparation-for-45c-heatwave;
https://www.theguardian.com/environment/2024/apr/04/schools-close-and-crops-wither-as-historic-heatwave-hits-south-east-asia

MIGRANTS AND TRANSIENT POPULATIONS (such as economic migrants or refugees in transit): School-age children and adolescents who are in transit pose a unique challenge for delivering nutrition services. Strategically placed one-stop health centres on common migrant routes can be used to deliver one-off interventions such as nutrition counselling or micronutrient supplements. Some health posts along migrant routes in South America provide nutrition services alongside youth-friendly spaces where adolescents can get their nails painted or spend time together. Youth-friendly mobile clinics can also play a similar role. Health screening can be combined with the delivery of a healthy meal. Social media, posters and QR codes for online platforms can also be used to deliver nutrition information (see our case study on Venezuelan migrants in **Part 4**). Delivering interventions that require repeated follow-up, such as wasting treatment or antenatal care for pregnant adolescent girls, can be more challenging when migrating populations are only in one place for a matter of days or hours. However, there have been examples of 'chains' of services being set up along common migration routes and referral cards provided, allowing the person to access the same treatment at the next stop along the route. An example can be seen in South America, where the Interagency Coordination Platform for Refugees and Migrants (R4V) coordinates support for migrants across borders and agencies, along common migration routes. This set up requires international collaboration and well-structured logistics.

Youth engagement in humanitarian contexts

"Nothing about us without us" is a powerful phrase that reminds us of the importance of involving those who we intend to support in the design and implementation of services. This is especially true for adolescents and young people more broadly. The United Nations has recognised the meaningful participation by young people in all aspects of their personal and community development as a fundamental right of youth[87].

To increase the uptake, effectiveness, and sustainability of nutrition interventions for school-age children and adolescents in humanitarian contexts, we must involve young people themselves to understand their challenges and design solutions. Yet there are currently few examples of adolescents being engaged in informing nutrition responses in emergencies[88,89].

There are a number of initiatives supporting youth engagement in humanitarian contexts. The five actions recommended by the Compact for Young People in Humanitarian Action[d] are summarised in **Annex 6**. The IASC 'With Us and For Us' guidelines strongly encourage seeking young people's views and feedback, especially on how their needs are being addressed and how they are being involved in nutrition programming[25].

Gender-responsive humanitarian activities have gained traction in recent years and many organisations now make sure that both men and women are included in decision-making processes, especially since women are often the recipients of nutrition services[90]. Youth engagement should be attracting a similar level of attention and can follow similar strategies. For example, an initiative by WFP in Kenya aimed to address gender-related inequalities by ensuring that all community relief committees were made up of at least 50% women and, where possible, had a female chairperson[91]. WFP also included a gender awareness component in its training, building awareness on gender-sensitive facilitation skills, registering and distributing food directly to women, and recruiting female food monitors. Adolescents can also be included in community relief committees and training on being 'youth-friendly' should be provided to all those engaging in nutrition activities for school-age children and adolescents.

There is an example from refugee camps in South Sudan where youth committees were established to ensure that adolescents were represented in decision making. This resulted in youth-led compositions of songs in local languages, which were used to disseminate COVID-19 messaging to communities[4]. UNHCR has published these examples of interventions that involve adolescent refugees in a meaningful way in designing and implementing context-appropriate interventions in their communities. However, they have not been systematically evaluated and there is a lack of examples relating to nutrition or food security programming[4]. Our case studies on South American migrants and IDPs in Cameroon both include examples in which adolescents themselves have been involved in the design of nutrition interventions in a humanitarian context.

d https://www.youthcompact.org/what-we-do

Photo credit: © WFP/Mehedi Rahman

Part 4: Case studies

In this section, we provide six case studies that cover contrasting types of humanitarian settings and illustrate a variety of different interventional responses for school-age children and adolescents. We include case studies on the Rohingya refugees in Bangladesh, Venezuelan migrants in Panama and Mexico, IDPs in Cameroon, besieged school-age children and adolescents in Gaza, conflict-affected areas of Ukraine, and food-insecure populations in the Philippines.

Case study 1: School-age children and adolescents living in a refugee camp – a case study from Cox's Bazar

Approximately 1 million Rohingya people currently live in refugee camps in Bangladesh's Cox's Bazar district. UNICEF, WFP, and other partners support the nutrition of those living in the camp in several ways:

- Adolescent girls (10–19 years) receive health and nutrition education and IFA supplements at the household level twice per month.
- All households receive food rations, which include multi-fortified rice.
- There is a 'Community management of acute malnutrition' (CMAM) programme for children under five years of age where RUTF is provided; this is occasionally extended to school-age children and adolescents if needed, on a case-by-case basis.


Photo credit: © UNICEF/UNI466633/Nihab

- There are standard antenatal care services for any adolescent girls who become pregnant.
- While there are no formal schools, there are 'learning centres' in the refugee camps where high-energy biscuits are provided to students by WFP.
- Physical activity is included in some learning centres, but space is very limited.
- In order to improve female attendance at learning centres, female-only classes are available and a 'female chaperones' programme is in place, where paid volunteers escort girls to and from learning centres, and sit with them throughout class to reassure parents and ensure their safety. The chaperones also act as community educators because they encourage families to keep their girls in school and delay marriage. The proportion of students in secondary school classes who are girls has increased from 17% to 24% since the initiation of the programme.

The nutritional status of school-age children and adolescents in the camps is not quantitatively known since they are not included in nutrition surveys. However, it is known that early marriage and adolescent pregnancies are highly prevalent in this community, which affect the growth and micronutrient status of adolescent girls. There are thought to be high rates of depression and anxiety among this age group due to accounts of them finding it very difficult to imagine a better future for themselves. This can result in a loss of appetite and lack of motivation to take nutrition supplements or attend school.

According to interviewees, one of the biggest challenges in implementing nutrition programming for school-age children and adolescents in this setting is the lack of funding. Funding is scarce for all age groups since the needs are great, but it is especially scarce for the 5–19 year age group since they are not prioritised in nutrition programming. Another challenge is the lack of space available in the camps due to overcrowding, which means there is no opportunity for kitchen gardens or for children to participate in physical activity.

In order to improve nutrition programming for this age group, it is essential that they be included in routine nutrition assessments so that their needs can be known and addressed more precisely. With greater funding, interventions such as nutrition education, better school meals, and mental health support could be provided to improve nutritional status and wellbeing.

Case study 2: Supporting school-age children and adolescent migrants – a case study from Latin America

Many parts of Latin America are considered humanitarian settings due to the current migration crisis on the continent. In addition to the high number of migrants from other countries, the outflow of refugees and migrants from Venezuela is the largest displacement crisis in the world, amounting to over seven million people.

The Interagency Coordination Platform for Refugees and Migrants (**R4V**) coordinates the response of over 200 organisations across 17 countries to support Venezuelan migrants and refugees in transit, temporarily settled in host countries, or waiting in unofficial camps at borders.

UNICEF is coordinating the nutrition response, with national governments and partner organisations such as ACF, and is focusing on vulnerable groups, such as children under five years of age and pregnant and breastfeeding women. Since the addition of school-age children and adolescents to the UNICEF CCCs, school-age children and adolescents are now also included in the nutrition response. Anaemia is highly prevalent in this population; for example, approximately 50% of adolescent migrants assessed in Panama were anaemic, both boys and girls. While weight and height are not systematically recorded for this age group, Latin America has high rates of overweight in school-age children and adolescents in the general population; this is therefore also likely to affect migrants, especially since UPFs are cheaper and more convenient options for those on the move. The priority interventions for the 5–19 year age group are micronutrient supplementation (specifically iron for 5–9 years and IFA for 10–19 years) to prevent anaemia, and nutrition counselling (often delivered together). General food distribution or CVA is also available in some locations, managed by WFP.

A recent video[e] by the UNICEF Panama office tells the story of Victor, a teenager who is being assessed by UNICEF at a migrant camp, having recently crossed the remote and dangerous Darién Gap region of the country. He is found to be anaemic and provided with iron supplements, and he also receives counselling on the importance of eating healthily as he continues his journey.

In Mexico, the 'Vamos Juntos' ('we go together') programme uses mobile units to offer health, nutrition, and mental health services to migrant children, adolescents, and pregnant women. While their priority focus in on children under four years of age, the largest group they attend to is the 5–11 year age group. They offer micronutrient supplementation for this age group (usually iron tablets) and basic health interventions, and also implement a behaviour change communication campaign aimed at adolescents, which includes messages on health and nutrition. The campaign is called 'Yo no elegí ser un migrante, elegí ser un guerrero' ('I didn't choose to be a migrant, I chose to be a warrior') and was designed following focus group discussions with adolescent migrants themselves. It provides access to health and nutrition information via a QR code and access to a chatbot on WhatsApp which can answer frequently asked questions. During the design-phase focus group discussions, adolescents highlighted their concerns about having access to enough food while travelling and stated that they often felt hungry.

In government and NGO-run shelters for migrants and refugees waiting for visas, UNICEF provide training to kitchen personnel on food safety and creating healthy menus. The quality and cultural appropriateness of foods in these centres is a concern, and the consumption of UPFs is high. Shelter staff are also encouraged to try to regulate food donations, such as refusing donations of UPFs and formula milk for infants.

ACF is currently finding a high prevalence of undernutrition in Venezuelan migrants of all ages in the region; anecdotally, up to 40% of adults and adolescents that they encounter are underweight (BMI<18.5 kg/m2). In the absence of specific national guidance for the adolescent age group, they have developed a protocol based on allied guidance, limited current evidence, and practical feasibility. They provide a milk drink that includes maize flour and soya and is fortified with micronutrients. The drink is called 'Lactokiana' and is designed for general consumption. They also provide RUTF (1 sachet (92 g) per day). The drink and RUTF combined provide 44% of an individual's daily recommended kilocalories. They

e https://www.youtube.com/watch?v=aBFZjHiE_ps

Photo credit:
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recommend treatment for three months, with monthly follow-ups. Patients are discharged when they have had two consecutive visits with a BMI>22 kg/m2, or a calf circumference >34cm, or greater than seven points on the 'mini nutrition assessment' (depending on the criteria they were admitted on), as well as being clinically stable and having a good appetite. In practice, these long treatment times are challenging to implement, since this is a population who is travelling and therefore often moves on before reaching the discharge criteria. While there are several known admission, discharge, and treatment criteria for undernutrition in school-age children and adolescents, there are very few detailed protocols that can be referred to, especially for outpatients, and even fewer that are used in practice.

As a result of the new focus on nutrition for school-age children and adolescents in the UNICEF CCCs, they have now been added to some assessment tools which are being used in the region, such as the 'supply plan' tool and the 'rapid needs assessment' tool. The 'supply plan' tool estimates the number of supplies needed based on the population affected by a crisis. There is space to include the number of school-age children (5–9 years) and the number of adolescents (10–19 years) affected, which is then used to calculate how many iron tablets (for 5–9 years) and IFA tablets (for 10–19 years) are required. The 'rapid needs assessment' tool lists school-age children and adolescents under 'priority group 2' after children <5 years and pregnant and breastfeeding women (priority group 1). The tool includes the assessment of BAZ, MUAC, height-for-age z-score, and haemoglobin levels (although MUAC interpretation is only offered for 10–14-year-olds, where severe wasting is defined as MUAC <16.0 cm). There are also questions about micronutrient supplementation coverage, deworming coverage, and access to health, social protection, and nutrition services. In reality, the school-age children and adolescent elements of these tools are not being utilised, especially the 'rapid needs assessment', due to concerns over stretched time among staff and constrained resources. School-age children and adolescents are not included in the mandatory versions of these tools. One of the biggest barriers is the lack of funding. Currently, the response is only reaching approximately 11% of the people in need, and children under five years and pregnant or breastfeeding women are the first priority for nutrition programming.

In order to improve the nutrition of school-age children and adolescent migrants in Latin American, more advocacy is needed on the nutritional vulnerabilities of this age group and the 'cost of inaction' in order to raise more funds for the response. The response would also benefit from more partnerships with allied organisations working on school-age children and adolescent issues, including NGOs in other sectors, academic institutions to improve the evidence base, and host governments to improve sustainability. Lastly, more specific guidance (international, regional, and national) on nutrition programming for school-age children and adolescents in emergencies is needed, including which interventions should be prioritised as mandatory and how to implement specific interventions such as wasting management and nutrition education/counselling for this age group.

Case study 3: Severe food shortages in a besieged area – a Gaza case study

On 7 October 2023, Palestinian armed groups in Gaza launched thousands of rockets toward Israel and breached through the perimeter fence of Gaza at multiple locations, entering into Israeli towns and killing and capturing Israeli forces and civilians. The Israeli military declared "a state of war alert", and moved its troops into Gaza, subsequently targeting numerous locations, including residential and healthcare facilities. The Israeli military operation has resulted in the deaths of tens of thousands of Palestinians, two-thirds of whom are women and children, and displaced over two million individuals. Extensive damage to Gaza's infrastructure has created a healthcare crisis, with an increase in communicable diseases, and brought the entire educational system to a standstill.

Due to military besiegement, it is extremely challenging to bring in food or fuel for the population, which has resulted in the entire population of Gaza (2.2 million people) being classified as 'in crisis' (Integrated Food Security Phase Classification (IPC) 3) or worse. According to the IPC, this represents "the highest share of people facing high levels of acute food insecurity that the IPC initiative has ever classified for any given area or country." As of December 2023, data showed that nearly all households were skipping meals every day. Four out of five households were going for entire days and nights without eating. This food crisis affects the whole population but especially vulnerable groups, which include children, pregnant women, and adolescents.

Several organisations are trying to alleviate the nutrition situation, with a focus on life-saving activities. As with most nutrition responses, the priority is for children aged under five years and pregnant or breastfeeding women. However, due to the high need of all vulnerable populations, there are also nutrition activities being implemented in Gaza for school-age children and adolescents. These are focused on three activities:

- wasting prevention;
- micronutrient supplementation; and
- wasting treatment.

To prevent wasting, school-age children and adolescents are being provided with high-energy biscuits – an intervention that was developed jointly between the nutrition cluster and the education cluster – largely funded by the World Bank. Procurement is coordinated by the nutrition cluster and distribution is coordinated by the education cluster. Since most schools have been destroyed or have been converted into emergency shelters, distribution happens at community distribution sites, informed by the register of school-age children held by the education sector. Blanket feeding and medium-quantity lipid-nutrient supplements are being provided to households and adolescents by WFP, but the activities are limited by funding restrictions, access problems, and the looting of commodities that do manage to cross the border.

Plans are in place to provide micronutrient supplements to adolescent girls – IFA tablets have been procured in the first instance, but future orders will switch to MMS. The age range of adolescents will be determined in consultation with other stakeholders in the context, mostly likely 15–19 years or 13–19 years. Supplements will be provided to adolescent girls alongside pregnant and breastfeeding women, at community distribution sites.

For wasting treatment, given the severity of the food security situation, UNICEF are now including school-age children and adolescents in CMAM programming which is usually restricted to children aged under five years and pregnant women. Since there are currently no normative protocols for extending CMAM to this age group, and instances where it does happen are often not documented, the programme has developed a pilot protocol for this age group and will be making adaptations as the programme progresses. The pilot protocol:

- uses a MUAC cut-off of <14.5 cm for 5–9-year-olds and <18.5 cm for 10–19-year-olds;
- provides two sachets of RUTF per day for treatment; and
- discharges school-age children and adolescents when they have a MUAC above the cut-off for admission for two consecutive weeks.


Photo credit: © WFP/Mostafa Ghroz

Appetite tests maybe be conducted, since these are performed for children aged under five years; however, this has not yet been specified in the protocol. There has been an intention to keep the protocol as similar as possible to that of children aged under five years, so as to minimise disruption to the CMAM programming and respect the capacity of the implementing staff. The CMAM programmes in Gaza use MUAC-only programming for all children, with MUAC as the admission criterion, for defining the dosage of RUTF, and as the discharge criterion. While the BAZ is defined as a criterion for underweight in school-age children and adolescents, it would not have been be feasible to use this in this context since the programme had to be set up with great urgency. Furthermore, there was no capacity at the time to train the team in the use of weight and height measures, nor was it feasible to bring in the required equipment. While two sachets of RUTF per day is normally the dosage for severe wasting in children aged under five years, it was thought that this would be adequate for the older age group too, who have a lower mortality risk. In addition, the burden of wasting in school-age children and adolescent age group is not currently known, so the implementing team are being cautious with resources in the first instance. The recovery times and case load will be documented as the programme progresses and may inform changes to the protocol, if necessary.

The programme for the nutrition of school-age children and adolescents in Gaza has had to overcome a number of challenges, which are not unique to this setting. The main challenge relates to funding limitations for this age group and a lack of donor buy-in unless there is more concrete evidence of mortality risk. There is currently a lack of guidance on the practical inclusion of this age group in humanitarian responses. There is a need to identify and then prioritise one or two indicators that can be included in all needs assessments (since the number of nutrition indicators that can realistically be included within needs assessments is already very limited) as well as in humanitarian performance monitoring. Without these, the burden of malnutrition and programme coverage is not known, making it difficult to define and improve the response. There is also a challenge concerning weak commodity pipelines at present, which is partially due to low demand for products for this age group. This has resulted in major delays to nutrition programming within Gaza; for example, the provision of micronutrient supplements for school-age children and adolescents. Lastly, while the donor focus is currently very much on saving lives, there is also a need to have a longer-term vision and consider the post-emergency nutrition of this age group. Food aid and import restrictions are exposing this vulnerable age group to diets that are limited in all food groups, but especially fresh fruit, vegetables, and meat products. UPFs are cheaper and have long shelf lives but are less healthy. Messages around healthy eating and improving the nutrition knowledge of school-age children and adolescents are therefore imperative for them to protect their health as far as resources and opportunities allow, both within the context of challenging current constraints and for when the besiegement has ended.

Case study 4: A healthy eating campaign in a conflict setting – a Ukraine case study

Ukraine offers a unique example in which pre-conflict national nutrition services for school-age children and adolescents are still being prioritised, despite the ongoing conflict in the country. The national strategy for school nutrition reform was an initiative introduced by the First Lady shortly before the war. It continues to be implemented, with adaptations in conflicted-affected settings, and with the support of UNICEF. The strategy aims to improve school food procurement systems, improve the nutrition capacity of educators and frontline workers, and improve the healthy eating culture among school-age children and their parents.

Photo credit: © UNICEF/UN0691345/Hrom

Activities intended to improve the healthy eating culture have included the provision of board games, educational materials, and motivational messages in youth centres and schools. There is also an online platform for children, teachers, and parents called 'ZNAIMO', which translates to 'we know what we eat'. This includes an online course for school children, a BMI calculator, and an online game on healthy eating using a Telegram-bot named 'Hraimo'. There is also a mass media campaign called 'what's inside matters most', aimed at the general public[f]. Regulations around markets of unhealthy foods to school children and minimum standards for school meals are also being considered.

When the war started in 2022, adaptations were made to continue to implement the campaign. Schools were closed in some areas during times of heavy fighting at the start of the war but generally every effort is now being made to keep schools open wherever possible. Schools provide stability, mental health support, education, and nutrition, and their importance has been recognised by the national and local governments. There is a national school meals programme in Ukraine which parents have to pay for unless the child is classified as vulnerable (such as an orphan), the family are internally displaced, or the parents are fighting in the war. The conflict has affected the national budget contribution for free school meals and has also increased the number of children eligible for free meals, hence the programme now requires donor support. School meals programmes have made adaptations in conflict areas where school canteens have been damaged, or people are in and out of shelters depending on the daily situation; meals are prepared in a central location and distributed to a number of schools and shelters in the area. Summer camps are also available for children of internally displaced people, which also offer healthy meals and nutrition learning opportunities.

Since Ukraine has high internet coverage, digital platforms and media campaigns via social media have allowed access to information for teachers, parents, and children in conflict areas. Since some foods have become unavailable or inaccessible for low-income families, digital messages are tailored to only focus on healthy foods that are accessible to all. It is not currently known how the conflict has affected eating behaviours and whether it has increased the consumption of UPFs, for example. A 'knowledge, attitudes, and practices' survey is being undertaken in 2024, however, which may shed light on this issue.

Besides this school nutrition strategy, few nutrition interventions have taken place in Ukraine in response to the war. Those that have are largely focused on infant and young child feeding. The lack of nutrition programming in this setting prior to the conflict is likely to have contributed to the slow start in getting new nutrition initiatives off the ground since the war started. This highlights the importance of routine nutrition programming and data collection in order for these activities to then continue being prioritised in the humanitarian response.

f For more information, see this video from UNICEF: https://www.youtube.com/watch?v=WxQqy-BgWFw

Case study 5: A food environment intervention for IDPS – a case study from Cameroon

Around 3.4 million people in Cameroon are suffering from the effects of conflict and violence, climate shocks, and disease outbreaks, according to the UN Office for the Coordination of Humanitarian Affairs (OCHA). There are approximately 1 million IDPs; the vast majority have fled prolonged violence in the northwest and southwest regions, but floods, landslides, and other sudden-onset disasters have also contributed to displacement. The country's crisis is often described as one of the world's most neglected, and the humanitarian response is significantly underfunded, with serious implications for IDPs and their host communities.

Despite this, there have been some innovative nutrition education and food environment interventions aimed at school-age children being trialled and scaled up in the country. A government-led, national programme aimed at tackling the rising double burden of malnutrition, which included nutrition education in schools as well as efforts to improve the school food environment, was recently designed and evaluated[92]. The programme was not specifically aimed at areas experiencing a humanitarian emergency. However, many schools hosting a high number of IDPs were targeted. The process started with a consultation with young people, which then resulted in the development of posters and leaflets that explained the importance of healthy eating, healthy cooking methods, and physical activity, in simple and entertaining ways (see the example poster in **Figure 5**). The four key messages of the programme were: 1) "I eat less fat, less salt, less sugars"; 2) "I eat vegetables and fruits that are well washed every day"; 3) "Clean drinking water is my favourite drink"; and 4) "I carry out regular physical activity". The programme also used weekly posts on social networks (YouTube, Facebook, Twitter, LinkedIn, Instagram, and WhatsApp) to provided additional messaging on different types of food and their health benefits, cooking tips to get the best out of food, and physical activity. The evaluation[92] of the programme showed significant improvements in the knowledge of the students who participated in the nutrition education sessions, and potentially associated changes in dietary patterns, such as a lower consumption of fried foods and sweets and a higher intake of fruits and vegetables, compared to the control group.

Figure 5: Poster "I eat a healthy and balanced diet; I am in good health" from the national nutrition education programme in Cameroon[92]


Photo credit: © WFP/Glory Ndaka

The programme also included a pilot 'food environment' intervention, which used a training guide for school canteen vendors with the basic principles of healthy and balanced diets, healthy cooking methods, and food hygiene, in order to influence the foods being sold to school children. Food vendors were required to complete the training in order to be licenced to sell in schools. An evaluation of the food environments of school-age children and adolescents found that school canteens and food vendors play a critical role in influencing the food choices of students. The canteen training programme is now formally part of the Cameroon national school health and hygiene policy.

Besides these national interventions, there has been a research study in Cameroon which was aimed specifically at IDP school children (aged 5–15 years). This group is thought to face higher rates of undernutrition and micronutrient deficiencies, particularly vitamin A and iron-deficiency anaemia, than the school-age population more generally[62]. The intervention provided lectures (10 topics across 13 weeks) to the mothers or caregivers of school-age children and adolescents through one-on-one phone calls, text or electronic messages, and booklets with pictures. Children were taught hygiene practices, such as washing their hands after using the toilet, brushing their teeth every day, and washing fruits before eating. A pre-test-post-test randomised experimental study found that vitamin A deficiency (assessed by Bitot's spot), pallor (indicative of anaemia), frequency of consumption of fruit and vegetables, caregiver's nutrition knowledge, and health-seeking practices significantly improved but there were no significant changes in anthropometry, iron status, haemoglobin status, or the number of meals given to the children each day. The authors speculate that this was due to high poverty rates among the population and therefore limited resources to make changes, and the short duration of the intervention. The authors suggested that nutrition education may need to be implemented with food-based interventions when targeting vulnerable populations such as IDPs[62]. Countries, such as Cameroon, with subnational humanitarian pockets face challenges in addressing both sides of the double burden, but teaching healthy eating habits and regulating school food vendors can benefit all children as long as food insecurity is also addressed.

Case study 6: Supporting adolescent pregnancy – a case study from the Philippines

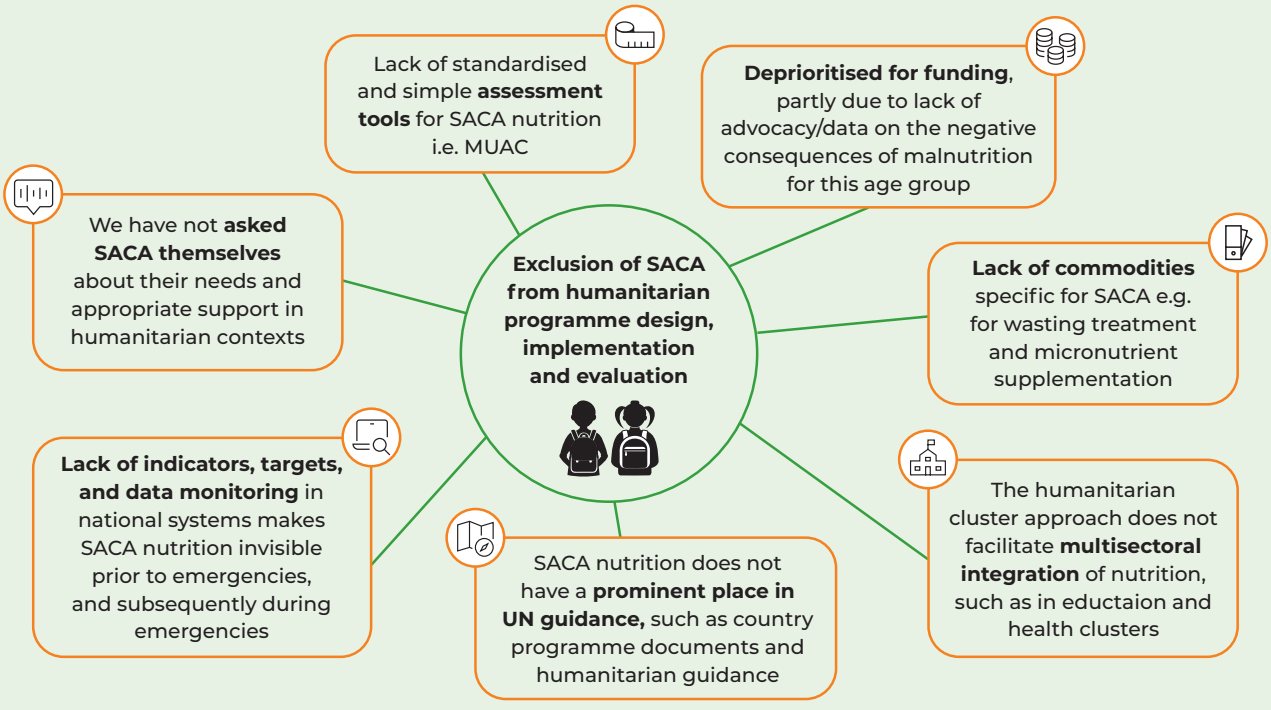
The Philippines, although not considered as having a nationwide humanitarian emergency, does suffer from localised emergencies which require a nutrition response. The country's national BEP supplementation programme for pregnant women and adolescent girls, called 'Totok Kainan', has a specific focus on adolescent girls, which makes it a potentially good example for other contexts. While all third-trimester pregnant women are eligible in areas with a high prevalence of undernutrition, a subset of 'nutritionally-at-risk' women and girls are eligible for supplementation from the first trimester onwards. Those classified as nutritionally-at-risk includes adolescents (i.e. <19 years), as well as women with a BMI <18.5 kg/m^2, MUAC <23 cm, and those with low gestational weight gain. This means that all pregnant adolescent girls are eligible for nutrition support throughout their pregnancy, not just those in their final trimester, regardless of their anthropometric status. The supplements provided vary depending on the stage of pregnancy: a product called 'Nutribun', which is a fortified bread, is provided during the first trimester; fortified rice meal is provided during the second trimester, and small-quantity lipid-nutrient supplements (plus 'Nutribun') are provided in the third trimester. The products provide between 400 and 700 kcal per day and between 15 and 20 grams of protein (11–15% of total energy needs). In addition to supplementation, health workers also provide education and counselling to adolescents and their families about the importance of good nutrition, the benefits of dietary supplementation, and best practices for maintaining a balanced diet. Adolescents also receive nutrition messages via phone text messages, called the 'nutriblast' service.

Photo credit: © WFP/Cynthia Matonhodze

Part 5: Recommendations for future programming guidance

Based on information from our interviews and literature review, this section focuses on summarising the barriers to nutrition programming for school-age children and adolescents (see **Figure 6**) as well as on making recommendations to address these barriers in any future programming guidance.

Figure 6: Summary of the barriers to nutrition programming for school-age children and adolescents in humanitarian contexts



SACA: school-age children and adolescents; **MUAC:** mid-upper arm circumference

Recommendations for better-informed responses

- Conduct research and assessments to better understand and regulate the food environments of school-age children and adolescents, with a specific focus on UPFs and school food environments.
- Ask adolescents themselves what their needs are and what platforms to use to reach them, and include their voices in national and international emergency response plans.
- Humanitarian agencies should all have youth engagement policies.
- Implement better data monitoring of the nutritional status of 5–19-year-olds in routine practice, so that if an emergency does occur, practitioners and policymakers are aware of the nutritional status of this age group and can monitor change.
- Generate UN global guidance, indicators, and targets to focus on the nutrition of school-age children and adolescents; this must be specific and disaggregated for this age group, including practical toolkits.
- Include the nutrition of school-age children and adolescents in national policies, national HRPs, and UNICEF country programme documents.

Recommendations to improve programme funding

- More evidence is needed to advocate for the 'cost of inaction' regarding the nutrition of school-age children and adolescents in emergencies: this would ultimately help generate more funding for the nutrition response.
- All stakeholders should move away from the narrative about girls' nutrition only being important because they may become mothers, and place an additional focus on girls and boys for the sake of their own health and nutrition.
- The nutrition sector should create more partnerships with advocacy and funding organisations working on the 'education crisis' given the connection between access to education and access to school meals.

Recommendations for intervention implementation

- Improve multisectoral approaches in emergencies, and better integrate nutrition into other services targeting school-age children and adolescents, such as social protection, education, and health (non-communicable disease prevention and disease management, SRH, and mental health).
- School feeding needs to be jointly implemented between education and nutrition clusters, or ministries, and should not be allowed to fall between the gaps. In general, better cluster coordination regarding the nutrition of this age group is required.
- Nutrition actors should work with education partners to prioritise keeping schools or 'learning centres' open, wherever feasible and safe.
- UN agencies should provide clarity on who does what by mapping out the clear roles of the various agencies and/or government ministries involved in the nutrition of school-age children and adolescents in humanitarian contexts.
- All implementing partners should consider the full spectrum of malnutrition in emergencies; not just undernutrition and micronutrient deficiencies, but also overweight and obesity, unhealthy diets, and physical inactivity.
- Researchers and policymakers need to improve methods for assessing the nutritional status of school-age children and adolescents and provide clear guidance, recognising that currently recommended methods are not feasible in most humanitarian settings. More specifically:
  - MUAC-for-age z-scores or small age 'buckets' of MUAC cut-offs should be used to assess undernutrition and mortality risk in instances where BAZ is not feasible. Guidance must provide detailed protocols for this; a detailed review of current practice may allow for informed decisions on the specific cut-offs or reference to use.
  - Guidance on using MUAC to assess overweight, in conjunction with other simple indicators, should also be considered, for instances where BAZ is not feasible.
  - Assessment of anaemia is simple and feasible using the HemoCue finger prick method. However, this needs to be more widely

applied to 5–19-year-olds, both in surveys and in nutrition support programmes.

  - Dietary assessments also need to be more widely applied to 5–19-year-olds; the MDD-W and CFIES are feasible tools for emergencies and should be promoted in any new guidance for this age group.
  - Field-friendly (quick/cost-effective) techniques for obtaining an early diagnosis of other micronutrient deficiencies besides anaemia are urgently required. Rectifying this gap in tools should be a research priority for improving humanitarian nutrition responses.

- Up-to-date, normative guidance on wasting or thinness management for this age group is currently lacking. UN guidance that includes detailed protocols for admission criteria, outpatient care, conducting an appetite test, calorie/dosage recommendations, and discharge criteria would improve cohesive support during emergencies.
- UN supply divisions should consider developing new products or rebranded products which are specific for this age group, such as wasting treatment products and micronutrient powders. This would avoid some of the issues around competing for resources with children aged under five years and make programming for this age group easier to implement.
- Researchers and normative guidance need to clarify the use, appropriate formulation, and cost-effectiveness of MMS in place of IFA supplements for school-age children and adolescents.
- Implementors of nutrition interventions for the general population, such as general food distributions and CVA programmes, must ensure that the heightened nutritional needs of 5–19-year-olds are taken into account.
  - These programmes should also be age- and gender-responsive, such as by making additional efforts to ensure that young people are aware of distribution sites and timings.
- Adolescent mothers should be prioritised in all pregnancy and breastfeeding interventions, regardless of their nutritional status, as per the new UNICEF programming guidance.

Recommended minimum package of interventions

Building on the UNICEF CCCs, the WHO's 'Implementing effective action for adolescent nutrition' guidance, and other global policy documents, we recommend the following as a **minimum package of interventions for school-age children and adolescents in all humanitarian contexts**. Some recommendations have been disaggregated for different age groups (i.e. 5–9 years and 10–19 years). We have also given specific consideration to instances of transient populations, where far fewer interventions are feasible.

For 5–19 years

- Include this age group in nutrition surveys and assessments that inform the nutrition situation analysis (collecting data on MUAC and/or MUAC-for-age Z-score and/or BAZ, anaemia status, as well as food security and diet diversity, where possible).
- Management of acute malnutrition / wasting / thinness:
  - Screen school-age children and adolescents using MUAC (age buckets), MUAC-for-age z-scores, or BAZ for admission criteria (depending on feasibility in context).
  - Treatment may be restricted to clinical settings if limited only to those with comorbidities (follow WHO IMAI guidelines).
  - Community programming (such as CMAM) is required in contexts of high food insecurity (which should include treatment using some form of ready-to-use food).
- Ensure the provision of one nutritious meal per day in school, or, where schools are not operational, collaborate with community interventions such as community distributions, youth groups, or health interventions.
  - Depending on the context, this may be a cooked meal, a take-home ration, or limited to a high-energy biscuit.
  - While school meals are more common for the 5–11-year age range, we recommend considering school meals for the full age range (5–19 years) in all humanitarian contexts, given their heightened nutrition requirements for growth and learning.
- Generate and disseminate guidance on regulating food donations targeting school-

age children and adolescents to maximise nutritious and safe foods and minimise UPFs where possible. For example, if donations of food are being handed out at distribution sites, youth centres, or schools, organisations handling donated foods should be provided with guidance on what foods to encourage and discourage in donations for this age group.

For 5–9 years specifically

- Blanket provision of iron-containing supplements (daily if the prevalence of anaemia is ≥40%, or weekly if daily is not feasible or if the prevalence of anaemia is <40%). The daily supplementation dosage is 30–60 mg of elemental iron, whereas the intermittent or weekly dosage is 45 mg of elemental iron. It is recommended that supplements be provided for three consecutive months, followed by a similar period of no supplementation. Supplementation should be carried out in conjunction with public health measures to prevent, diagnose, and treat malaria in malaria-endemic areas.
- Provision of annual deworming medication (the WHO recommendation is for all children up to 12 years of age in high-burden (>20% prevalence of worm infections) contexts; this should be increased to twice per year in populations with a prevalence of infection >50%. This can be adapted to 'intermittent' if regular provision is not possible.

For 10–19 years specifically

- Blanket provision of weekly IFA supplements for girls; ideally these are delivered across several platforms such as schools, clinics, and the community. While MMS is currently only recommended during pregnancy, providing daily MMS to all adolescent girls may also be considered in place of WIFAS. Note that weekly MMS tablets would not provide the WHO recommended quantity of folic acid, hence they must be provided daily (WIFAS = 2.8 mg of folic acid per weekly tablet whereas MMS UNIMMAP formulation contains 400 µg daily).
- Blanket provision of iron-containing supplements for boys in high anaemia contexts (>20%; ideally daily, but also weekly or intermittent depending on feasibility in the context). A dosage of 30–60 mg of elemental iron is recommended up to the age of 12 years; after that, there is no recommended dosage – in the absence of a specific dosage recommendation for 12–19-year-old boys, either child or adult supplements could be used while guidance is developed. Boys can be included in WIFAS programmes alongside girls to simply programming.
- Nutrition programme implementers should collaborate with other sectors to deliver interventions that inform and empower girls to prevent adolescent pregnancy and early marriage, as mitigating these can have considerable beneficial impacts on nutritional status, health, and wellbeing. These interventions may be through formal or informal education interventions, peer support groups, or via adolescent-friendly SRH services.
- In populations where nutrition vulnerability is high, consider including this age group in general food assistance or CVA/other social transfer programmes, especially those who are out of school, and in place of community school meals.

For pregnant and breastfeeding adolescent girls

Refer to the package in UNICEF's 2024 programming guidance for women and adolescent girls in humanitarian contexts, which recommends nutritional screening, BEP supplements for all pregnant and breastfeeding adolescent girls, daily iron-containing supplements (preferably MMS, if available), nutrition education and counselling, and empowerment and gender-transformative programming.

For transient populations

Transient populations, such as refugees and migrants on the move, may only be in one location for a matter of hours or days. Any assessments taking place within these populations should consider the nutrition of 5–19-year-olds, such as assessing their anthropometric status, micronutrient status, food security, and/or diets. Blanket provision of iron-containing supplements (IFA supplements or MMS), as well as deworming medication, is also recommended; this is likely to be intermittent since regular follow-up cannot be guaranteed. Management of thinness/wasting is more difficult since follow-up over several weeks is required; however, cross-border collaboration or mobile health units along common routes provide one solution to this. Prioritising this age group for access to nutritious meals, food assistance, or CVA is also possible using these solutions, in place of regular school meals. Food assistance should not include UPFs high in fat, sugar, and salt and should consider the high micronutrient needs of this age group. Empowerment interventions, child

protection services, and SRH services should be also prioritised in this group, who are often at high risk of gender-based violence and early pregnancy.

Additional interventions where feasible

While the above list of interventions is our recommended 'minimum package', where feasibility according to the context allows, the following interventions should also be considered for school-age children and adolescents:

- weight monitoring and management interventions for school-age children and adolescents living with overweight and obesity, including family-based, multicomponent services covering nutrition, physical activity, and psychosocial support;
- the provision of additional micronutrients through fortified staple foods and/or point-of-use micronutrient powders for food-insecure households with school-age children or adolescents;
- the promotion of healthy diets through information campaigns (i.e. reduce sugar, reduce salt, increase whole-grain foods, fruits, nuts, and vegetables) (in contexts where food choices are possible);
- the integration of nutrition services into adolescent -friendly platforms in health facilities, communities, and schools;
- ensuring access to safe environments and WASH services;
- regulating school or learning-centre food environments by restricting the marketing of unhealthy foods and providing guidance/ restrictions to vendors in and around places frequented by school-age children and adolescents – while this is not yet commonplace in stable context, it may be possible in some controlled humanitarian contexts, such as refugee camp settings;
- the prevention of adolescent pregnancy and early marriage through community behaviour change programmes; and
- the provision of high-quality and practical nutrition education and counselling on safe and nutritious diets, which can be integrated into both formal and informal learning environments, such as skill-building workshops, school kitchens, and youth-led community gardens.

Box 4: Ways for readers to share their experiences of adolescent nutrition programming in humanitarian emergencies

If you are involved in programming adolescent nutrition interventions in humanitarian emergencies and see that your mode of programme delivery or specific humanitarian context has not been captured in this report, we would love to hear from you so that your learning can be shared with others.

You could submit an article to Field Exchange, our technical publication that shares experiences in nutrition programming and policymaking, or feel free to tag us on X (Twitter @ennonline) or LinkedIn to start a conversation. We look forward to hearing from you.

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Annexes

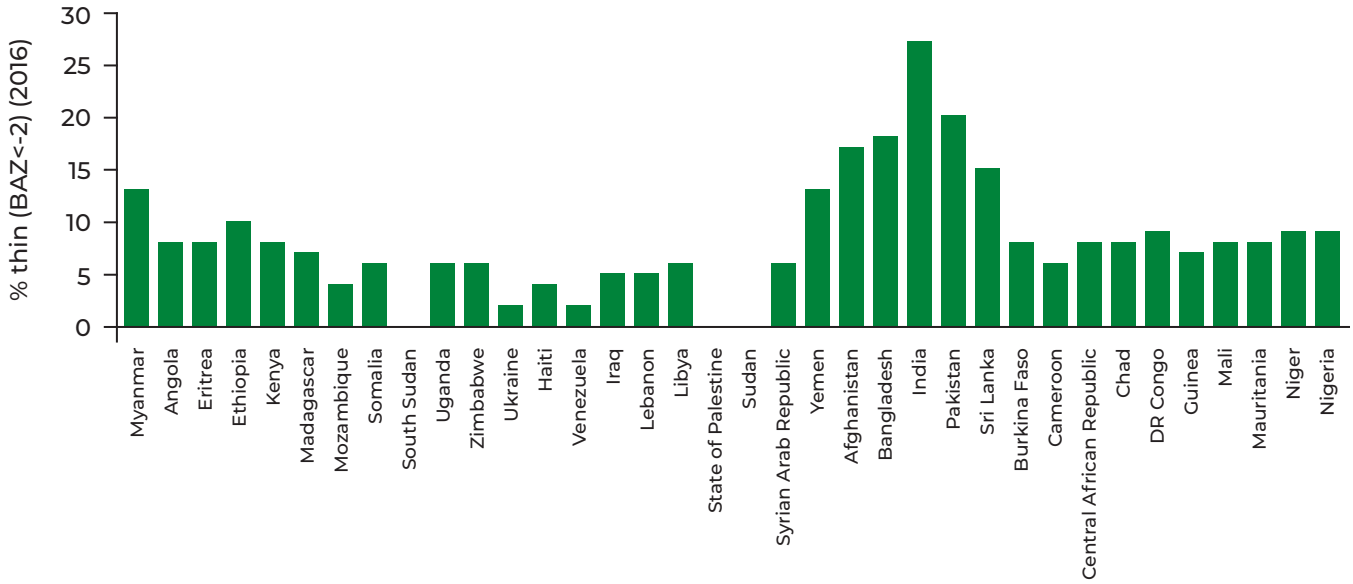
Annex 1: Prevalence of overweight and thinness, and leading causes of death, for adolescents in 36 countries considered 'humanitarian' by UNICEF in 2023

	% thin (BAZ<-2) (2016)	% overweight or obese (BAZ>1)	Leading cause of death – girls (2019)	Leading cause of death – boys (2019)
Myanmar	13	11%	Tuberculosis	Road injury
Angola	8%	11%	Road injury	Road injury
Eritrea	8%	10%	Maternal conditions	Road injury
Ethiopia	10%	8%	Diarrhoeal disease	Road injury
Kenya	8%	11%	HIV/AIDS	Road injury
Madagascar	7%	10%	Road injury	Diarrhoeal disease
Mozambique	4%	12%	HIV/AIDS	HIV/AIDS
Somalia	6%	12%	Diarrhoeal disease	Road injury
South Sudan	No data	No data	Road injury	Road injury
Uganda	6%	10%	HIV/AIDS	Road injury
Zimbabwe	6%	14%	HIV/AIDS	HIV/AIDS
Ukraine	2%	20%	Road injury	Self-harm
Haiti	4%	26%	Natural disasters	Natural disasters
Venezuela	2%	33%	Road injury	Interpersonal violence
Iraq	5%	30%	Road injury	Road injury
Lebanon	5%	31%	Road injury	Road injury
Libya	6%	31%	Collective violence	Road injury
State of Palestine	No data	No data	No data	No data
Sudan	No data	No data	Road injury	Road injury
Syrian Arab Republic	6%	27%	Road injury	Road injury
Yemen	13%	18%	Collective violence	Collective violence
Afghanistan	17%	9%	Maternal conditions	Road injury
Bangladesh	18%	8%	Diarrhoeal disease	Road injury
India	27%	6%	Tuberculosis	Diarrhoeal disease
Pakistan	20%	9%	Diarrhoeal disease	Diarrhoeal disease
Sri Lanka	15%	12%	Self-harm	Road injury
Burkina Faso	8%	8%	Diarrhoeal disease	Sickle cell disorders
Cameroon	6%	12%	HIV/AIDS	Road injury
Central African Republic	8%	10%	Tuberculosis	Road injury
Chad	8%	8%	Maternal conditions	Road injury
DR Congo	9%	10%	Road injury	Road injury
Guinea	7%	9%	Maternal conditions	Road injury
Mali	8%	10%	Maternal conditions	Diarrhoeal disease
Mauritania	8%	13%	Road injury	Road injury
Niger	9%	8%	Diarrhoeal disease	Road injury
Nigeria	9%	8%	Diarrhoeal disease	Road injury

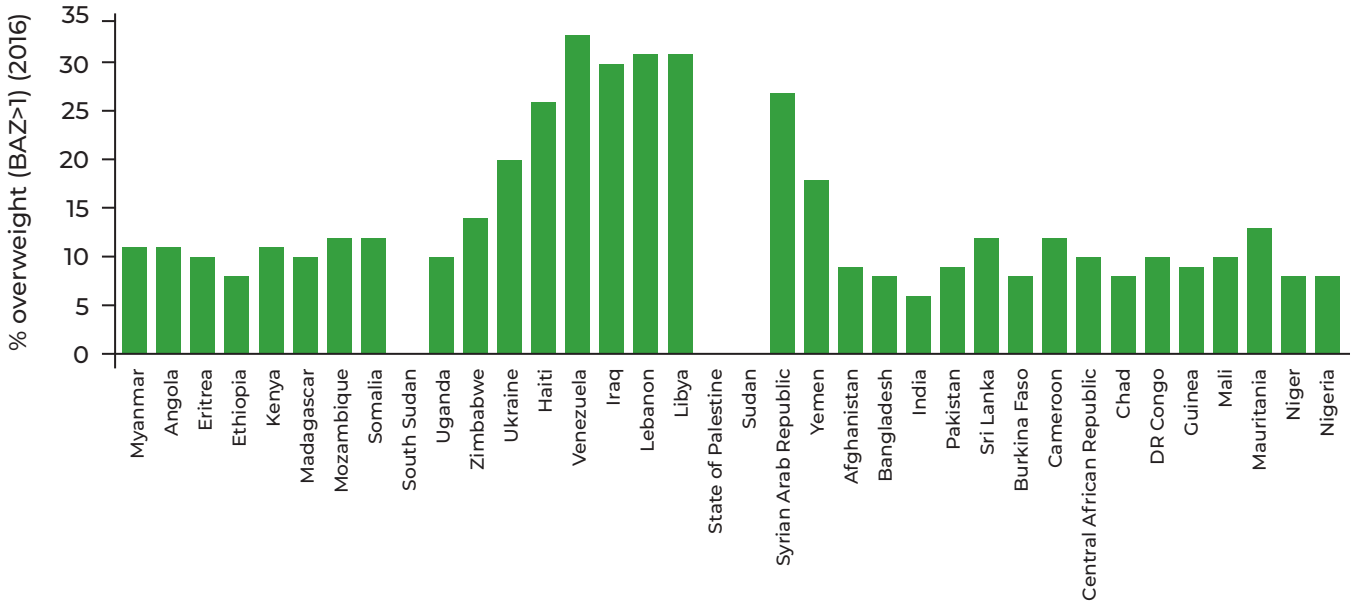
Data are for 10–19-year-olds, from 2016. Colour coding depicts different global regions.

Annex 2: Prevalence graphs for thinness and overweight in 10–19-year-olds in countries defined as humanitarian contexts

Annex 2 Figure 1: prevalence of thinness in 10–19-year-olds in humanitarian contexts



Annex 2 Figure 2: prevalence of overweight in 10–19-year-olds in humanitarian contexts



36 countries defined by UNICEF as 'humanitarian contexts' in 2023; figure uses data from the UNICEF adolescent data portal, where the most recent available data are from 2016. There are no data for 5–9-year-olds. BAZ= BMI-for=age z-score using WHO 2017 reference.

Annex 3: Full summary of policies related to school-age children and adolescents' nutrition reviewed for this report

See the accompanying spreadsheet for a full summary of the international guidelines and inter-agency guidance relevant to the nutrition of school-age children and adolescents in humanitarian contexts. Tab 1 presents guidance that is specific to humanitarian contexts; tab 2 presents relevant guidance for school-age children and adolescents which is not specific to humanitarian settings but likely still applicable.

Annex 4: Example of population reference nutrient intakes (vitamins and minerals): dietary reference intakes and adequate intakes for school-age children and adolescents in the USA

	Females			Males		
	9–13 years	14–18 years	19–30 years	9–13 years	14–18 years	19–30 years
Energy, kcal/day	2,071	2,368	2,403	2,279	3,152	3,067
Carbohydrates, g/day	130	130	130	130	130	130
Total fibre, g/day	26	28	25	31	38	38
n-6 polyunsaturated fat, g/day	10	11	12	12	16	17
n-3 polyunsaturated fat, g/day	1.0	1.1	1.1	1.2	1.6	1.6
Protein, g/day	34	46	46	34	52	56
Vitamins						
Vitamin A µg/day	600	700	700	600	900	900
Vitamin C, mg/day	45	65	75	45	75	90
Vitamin D, µg/day	5	5	5	5	5	5
Vitamin E, mg/day	11	15	15	11	15	15
Vitamin K, µg/day	60	75	90	60	75	120
Thiamine, mg/day	0.9	1.0	1.1	0.9	1.2	1.2
Riboflavin, mg/day	0.9	1.0	1.1	0.9	1.3	1.3
Niacin, mg/day	12	14	14	12	16	16
Vitamin B6, µg/day	1.0	1.2	1.3	1.0	1.3	1.3
Folate, µg/day	300	400	400	300	400	400
Vitamin B12, µg/day	1.8	2.4	2.4	1.8	2.4	2.4
Pantothenic acid, mg/day	4	5	5	4	5	5
Biotin, µg/day	20	25	30	20	25	30
Choline, mg/day	375	400	425	375	550	550
Elements						
Calcium, mg/day	1300	1300	1000	1300	1300	1000
Chromium, µg/day	21	24	25	25	35	35
Copper, µg/day	700	890	900	700	890	900
Fluoride, mg/day	2	3	3	2	3	4
Iodine, µg/day	120	150	150	120	150	150
Iron, mg/day	8	15	18	8	11	8
Magnesium, mg/day	240	360	310	240	410	400
Manganese, mg/day	1.6	1.6	1.8	1.9	2.2	2.3
Molybdenum, µg/day	34	43	45	34	43	45
Phosphorous, mg/day	1250	1250	700	1250	1250	700
Selenium, µg/day	40	55	55	40	55	55
Zinc, mg/day	8	9	8	8	11	11

Source: data from reports from the Institute of Medicine, Food and Nutrition Board, Standing Committee on the Scientific Evaluation of Dietary Reference Intakes, copyright by the National Academy of Sciences, courtesy of the National Academies Press, Washington, DC, USA (http://www.nap.edu/).

Reference: Das JK, Lassi ZS, Hoodbhoy Z, Salam RA. Nutrition for the next generation: older children and adolescents. Annals of Nutrition and Metabolism 2018; 72(3): 56-64.

Annex 5: Summary of WHO AH-HA! recommendations		
Structural- and environmental-level recommendations	**Organisational-level recommendations**	**Individual-level recommendations**
Develop and use nutrient profiles to identify unhealthy foods and beverages.	Require settings frequented by adolescents (such as schools, childcare settings, children's sports facilities and events, and youth workplaces) to create healthy food environments.	Provide guidance on healthy diets, for example "restrict sodium intake to less than 2 g per day, reduce salt when cooking, and limit processed and fast foods".
Implement a standardised global nutrient labelling system, control the use of misleading health and nutrition claims, and implement mandatory front-of-pack labelling.	Improve the availability and affordability of healthy foods in public institutions and settings, particularly in disadvantaged communities,	Fortify all food-grade salt used in household and food processing with iodine as a safe and effective strategy for the prevention and control of iodine deficiency disorders.
Tax and increase the pricing of energy-dense, nutrient-poor foods and sugar-sweetened beverages.	Nutrition education can cover growing school gardens, dietary diversity, the food environment, and practical food preparation skills. The school curricula can also support nutrition and food preparation.	Offer daily iron supplementation for menstruating adult women and adolescent girls living in settings where anaemia is highly prevalent (40% or higher prevalence); offer intermittent IFA supplementation for menstruating women where the prevalence of anaemia among non-pregnant women is >20%.
Implement the WHO 'Set of Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children'.	Ensure that appropriate and context-specific nutritional information and guidelines are developed and disseminated in a simple, understandable, and accessible manner to all. Use social media to promote healthy behaviour or influence social norms and provide interventions for overweight and obesity control.	Develop and support family-based, multicomponent, lifestyle weight management services for adolescents who are overweight.
Provide cash transfers to increase uptake of healthy meals and micronutrient supplementation.	Campaigns should target policymakers, medical staff, adults, adolescents, and children in general, promoting capacity-building related to adolescent obesity and its risk factors.	
	Increase community ownership of interventions, inclusive of culturally relevant information. Include mentoring from community members to increase the impact of interventions.	

Annex 6: Five actions recommended by the compact for young people in humanitarian action

- **Action 1:** Promote and increase age- and gender-responsive and inclusive programmes that contribute to the protection, health, and development of young women, young men, girls and boys within humanitarian settings;
- **Action 2:** Support the systematic inclusion of engagement and partnership with youth in all phases of humanitarian action through the sharing of information and involvement in decision-making processes at all levels, including budget allocations;
- **Action 3:** Recognise and strengthen young people's capacities and capabilities to be effective humanitarian actors in prevention, preparedness, response and recovery, and empower and support local youth-led initiatives and organisations in humanitarian response, such as those targeting affected youth, including young refugees and internally displaced persons living in informal urban settlements and slums;
- **Action 4:** Increase resources intended to address the needs and priorities of adolescents and youth affected by humanitarian crises, including disasters, conflict, and displacement, and identify ways to more accurately track and report on the resources allocated to young people in humanitarian contexts; and
- **Action 5:** Ensure the generation and use of age- and sex-disaggregated data pertaining to adolescents and youth in humanitarian settings.

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