NUTRITION GUIDANCE SERIES
UNICEF
PROGRAMMING
GUIDANCE
Maternal Nutrition
Prevention of malnutrition in women before and during pregnancy and while breastfeeding
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Abbreviations
ANC
Antenatal care
BEP
Balanced energy-protein supplements
BMI
Body mass index
Hb
Haemoglobin
HIC
High-income countries
HMIS
Health management information system
IFA
Iron and folic acid
LBW
Low birthweight
LMICs
Low- and middle-income countries
MMS
Multiple micronutrient supplements
MUAC
Mid-upper arm circumference
SBCC
Social and behaviour change communication
SDG
Sustainable Development Goal
SGA
Small-for-gestational age

Sq-LNS
Small-quantity lipid-based nutrient supplement
UNICEF
United Nations Children's Fund
UNIMMAP
United Nations International Multiple Micronutrient Antenatal Preparation
WFP
World Food Programme
WHO
World Health Organization
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Key definitions
Adolescent
An individual aged 10–19 years.
Anaemia
A pathological condition characterized by low levels of haemoglobin or poor oxygen carrying capacity of the red blood cells. Anaemia is an indicator of poor nutrition, health and wellbeing.
Body mass index
An individual's weight in kilograms divided by the square of height in metres. Body mass index is used to classify non-pregnant women (or pregnant women within 12 weeks of pregnancy) as follows: underweight (≤18.5 kg/m2), normal weight (18.5 kg/m2 – 24.9 kg/m2), overweight (25 kg/m2 – 29.9 kg/m2) and obese ≥30 kg/m2).
Iron deficiency anaemia
A form of nutritional anaemia that results when iron intake is insufficient to meet the demands for synthesis of haemoglobin and erythrocytes. Iron deficiency is the most common cause of anaemia among non-pregnant and pregnant women.
Large for gestational age:
An infant born above the 90th percentile of a birthweight for a given gestational age.
Low birthweight
Weight of an infant of less than 2.5 kg at birth, regardless of gestational age.
Macrosomia
An infant with a birth weight greater than 4,000 to 4,500 g, regardless of gestational age.
Short maternal stature
A woman's height ranging from <145 cm to <155 cm.
Small-for-gestational-age
An infant born below the tenth percentile of a birthweight-for-gestational-age.
Preterm birth
An infant born alive before 37 weeks of pregnancy are completed.
Woman of reproductive age
An adolescent girl or woman aged 15–49 years.
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Executive summary
Women's nutrition matters. Not only is it a human right; it is also essential for women's survival, well-being and participation. Women's nutrition – especially during the nutritionally vulnerable

period of pregnancy and breastfeeding – is also an important determinant of children's nutrition, growth, health and development outcomes during the 1,000-day window from conception to age 2, and beyond.

Despite this recognition, global progress in reducing all forms of malnutrition among women of reproductive age (henceforth referred to as 'women') is lagging against global goals and targets. Although the prevalence of underweight among women has improved in low- and middle-income countries (LMICs), the prevalence of overweight and obesity among women has increased around the world. An estimated 170 million women worldwide suffer from underweight, while three times as many women (610 million) are living with overweight.1 And while the prevalence of anaemia among women has declined slightly, about 571 million women (29.9 per cent) worldwide are still affected.1 Global trends in short maternal stature show some improvements; however, short stature still affects 7 per cent of women (aged 20–49 years) in LMICs, particularly in South Asia and Southeast Asia.2, 3

Malnutrition in women is the result of poor diets and poor care services and practices. These factors increase women's risk of illness, death and poor pregnancy outcomes, and put their children at risk of undernutrition in early childhood (including wasting, stunting and micronutrient deficiencies) with long-term negative consequences for school readiness, enrolment and learning performance. These consequences can translate into poverty in adulthood due to limited employment opportunities and lower productivity and wages, ultimately perpetuating malnutrition across generations.

This guidance is intended to support the implementation of UNICEF's vision for maternal nutrition programming as outlined in the UNICEF Nutrition Strategy 2020–2030.4 In doing so, the guidance aims to accelerate progress towards the Sustainable Development Goals (SDGs) and the nutrition targets set by the World Health Assembly across countries and regions.

About this guidance

This document aims to provide UNICEF country teams and their partners with guidance to design, implement and monitor evidence-based programmes to improve the nutrition of women before and during pregnancy and while breastfeeding. The guidance supports UNICEF's vision for improving the diets, services and practices of women as described in the UNICEF Nutrition Strategy 2020–2030. Specifically, this guidance supports the implementation of Results Area 3 on the prevention of all forms of malnutrition in women across the life course.

Chapter 1 describes the importance of addressing malnutrition in women and highlights the global magnitude of the problem, including its causes and consequences. This chapter also outlines global goals and guidance for the prevention of malnutrition among women.

Chapter 2 describes UNICEF's strategic approach to preventing malnutrition in women before and during pregnancy and while breastfeeding.

Chapter 3 outlines UNICEF's programmatic priorities: 1) women's nutrition before pregnancy; 2) women's nutrition during pregnancy; 3) women's nutrition while breastfeeding; 4) nutrition of adolescent mothers and other nutritionally at-risk women; and 5) innovations for maternal nutrition.

Chapter 4 sets forth the programming principles that will guide UNICEF's approach to women's nutrition across the life course.

Chapter 5 describes the role of five systems – food, health, water and sanitation, education, and social protection – with the greatest potential to deliver nutrition results for women.
Chapter 6 covers the programmatic approaches, coordination and partnerships that are needed to improve women's nutrition.
The guidance ends with a list of resources and suggestions for further reading.
Finally, this guidance is intended to be used in conjunction with other UNICEF guidance documents to improve nutrition in early childhood, middle childhood and adolescence. It is also intended to be used alongside thematic guidance for the prevention, early detection and treatment of child wasting and the prevention of overweight and obesity in childhood and adolescence, and is aligned with the UNICEF Gender Action Plan and Core Commitments for Children in Humanitarian Action.5-9

1.
Introduction
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Overview of the nutritional situation of women
Why women's nutrition matters
Securing access to nutritious, safe, affordable and sustainable diets, along with essential nutrition services and positive nutrition practices, is fundamental to women's survival, health and well-being.10 Women's nutrition is also associated with the nutrition status, health, growth and development of their children.11 Protecting women's nutrition at each phase of the life course is therefore extremely important – especially before and during pregnancy and while breastfeeding, when nutritional vulnerability is greatest (Figure 1).
For women who are about to become mothers, adequate diets preconception help establish sufficient nutrient reserves to support pregnancy. During adolescence, it is important that girls consume adequate diets to meet their energy, protein and micronutrient needs and support physical growth and development.
For adolescents who become pregnant, nutritious diets also prepare them for the nutritional demands of pregnancy and breastfeeding.12
During pregnancy, women have increased dietary requirements to support changes in maternal tissues, metabolism, and foetal growth and development. Compared with pre-pregnancy, energy requirements increase by an average of 300 kcal/day during pregnancy.13 In addition, pregnancy also increases women's need for protein, vitamins and minerals such as iron, folic acid and calcium.14
Women who are breastfeeding also have increased energy needs compared with non-pregnant and non-lactating women.15, 16 Indeed, energy requirements increase by 640 kcal/day during the first six months postpartum among women who breastfeed exclusively.13 Although infant demand is a key condition for stimulating milk production, better diets can also improve the lactation capacity of women who are undernourished.16, 17
Figure 1 Women's nutrition across the life course
AdolescencePreconceptionPregnancyBreastfeedingDuring pregnancy, nutritious diets support foetal growth and development and help meet women's energy needs, which increase by an average of 300 kcal/day during this timeNutritious diets are critical during the first six months postpartum when dietary requirements increase by 640 kcal/day among exclusively

breastfeeding womenBefore pregnancy, women need nutritious diets to protect their health and establish sufficient nutrient reserves to support pregnancyAdolescents need nutritious diets with high amounts of energy, protein and micronutrients to fuel rapid physical growth and developmentAdolescentAdult

Global prevalence, consequences and causes of malnutrition in women
Global prevalence of malnutrition in women
Despite recognition of the importance of women's nutrition, the prevalence of malnutrition in women – in all its forms – is unacceptably high. Malnutrition, including underweight, short stature, anaemia and overweight, affects millions of women around the world (Figure 2), including during the nutritionally demanding periods of pregnancy and breastfeeding.1 Globally, approximately 170 million women (9.1 per cent) are underweight, while three times as many women (610 million or 32.5 per cent) are overweight.1 While there have been important reductions in the prevalence of underweight in LMICs, progress has been uneven across regions and within countries; prevalence is still high in sub-Saharan Africa and South Asia, and low-income women within countries are most impacted.2 At the same time, the prevalence of overweight and obesity among women has increased over the past three decades and now affects more than half a billion (610 million) women.1
Globally, the mean body mass index (BMI) in women is 24.4 kg/m², which is the cusp of the global cut-off for overweight.2 This reflects the trend of increasing overweight in women.2,18 Short stature, an indicator of intergenerational and chronic malnutrition, has shown some improvements. Still, 7 per cent of women (aged 20–49 years) in LMICs are affected by short stature.2 In South Asia and Southeast Asia, short stature affects as many as 32–35 per cent of all women.3
While global estimates on micronutrient deficiencies and dietary quality among women are limited, available evidence suggests that women's diets are poor, and deficiencies of key micronutrients (e.g., iron, folate, vitamins B12 and D, iodine, and zinc) are widely prevalent, irrespective of whether women are underweight, normal weight or overweight.19,20 Anaemia affects slightly fewer than one-third (29.9 per cent) or 571 million women worldwide.1 These contrasting forms of malnutrition affect women across all regions and settings and often overlap in the same countries.
Consequences of malnutrition in women and children
All forms of malnutrition in women – underweight, short stature, anaemia and overweight — have serious consequences for women's health, well-being and participation. Women who are underweight or overweight before pregnancy face additional risk factors when they become pregnant, such as gestational diabetes, hypertension, pre-eclampsia and caesarean section, as well as poor pregnancy and breastfeeding outcomes.21 During pregnancy, gestational weight gain less than or greater than guideline recommendations
Figure 2. Global prevalence of malnutrition in women and low birthweight.1
Approximately170 millionwomen (9.1%) are underweight(BMI <18.5 kg/m2) Nearly 610 millionwomen (32.5%) are affected by overweight(BMI 25 kg/m2) Anaemia affects520 million women (32.8%) Annually,20.5 million babies (14.6%) are born with low birthweight (<2,500 g)7 % of women aged 20–49 years in LMICs have short stature (<145 cm)

increases the risk of adverse maternal and infant outcomes (such as small-for-gestational-age (SGA) or large-for-gestational age births, preterm births, macrosomia and caesarean delivery) and may also lead to postnatal weight retention.22,23 Anaemia in pregnancy, much of which has nutritional causes, is associated with increased morbidity, mortality and adverse birth outcomes.24,25

Malnutrition in the period following childbirth presents its own unique risks for women. Women suffering from anaemia in the third trimester may continue to suffer from anaemia in the postnatal period, especially if they experience excessive blood loss during delivery and/or if they had multiple births.26-28 Breastfeeding also increases the need for increased dietary energy intake. In some cases, among women who are undernourished, maintaining breastmilk supply throughout the recommended breastfeeding period may come at the expense of a woman's nutritional reserves.15

The consequences of maternal malnutrition for newborns are equally serious.3, 29, 30 Each year, about 20 million babies are born with low birthweight (LBW), an early form of malnutrition that is closely linked to the nutritional status of women before and during pregnancy.31 Malnutrition before and during pregnancy can also contribute to stunting, wasting and micronutrient deficiencies in infants, putting them on a trajectory to potentially long-term negative consequences, ranging from impaired growth, development and learning readiness in early childhood, to chronic diseases in adulthood (Table 1).2, 29, 30

Women suffering from underweight before pregnancy face a greater risk of preterm birth (32 per cent) than women with a healthy weight.21 Similarly, women affected by overweight and obesity before and during pregnancy are at increased risk of poor pregnancy outcomes, while their children face a greater risk of overweight, obesity and cognitive and development problems that may extend into adulthood.33-34 Short stature in women is also associated with poor pregnancy outcomes, such as SGA and preterm births, and is strongly correlated with stunting in children.3, 35 While short stature (<145 cm) carries the highest risk for women and children, other height categories (<155 cm) are also associated with increased risk of SGA and preterm births.3

During pregnancy, deficiencies in essential vitamins and minerals, such as iodine, iron and calcium, are also linked to poor health outcomes, such as miscarriage, stillbirths, congenital defects, LBW, infant mortality, impaired cognitive development, and cardiometabolic risks in adult life.20

Table 1. Consequences of maternal malnutrition on women and children

Impacts of maternal malnutrition (underweight, overweight, short stature and micronutrient deficiencies)

Impacts

Underweight

Overweight/obesity

Short stature

Micronutrient deficiencies

Mother

Morbidity, death

Gestational hypertension and diabetes, pre-eclampsia, prolonged labour, caesarean section, miscarriage, postpartum haemorrhage, anaemia, death
Obstructed labour, death
Hypothyroidism, fatigue, bleeding during delivery, eclampsia and pre-eclampsia, miscarriage, obstructed labour, morbidity, death
Newborn and child
Stillbirth, preterm birth, LBW, stunting, wasting
Large-for-gestational-age, preterm birth, stillbirth, neonatal asphyxia and infant mortality, low and high birthweight, birth defects
SGA, preterm birth, LBW, stunting, wasting
SGA, preterm birth, stillbirth, LBW, newborn/infant mortality, congenital defects, goitre, hypothyroidism, intellectual disabilities
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Of special concern are the needs of millions of adolescent girls who give birth each year, the vast majority of whom live in LMICs and suffer from malnutrition.36 In some countries, 1 in 10 adolescent girls (aged 13–15 years) are underweight, one-third are affected by overweight or obesity, and as many as half suffer from stunting.37 Pregnant adolescent girls face a higher risk of malnutrition because they are still growing. Their nutritional needs may compete with the nutritional demands of pregnancy and impact their growth.38, 39 Moreover, some adolescent girls face difficulties in accessing nutritious foods and pregnancy care due to harmful cultural and gender norms.40, 41 Adolescent girls with stunting face a high risk of malnutrition and negative health outcomes during pregnancy and around the time of childbirth; they are also more likely to have babies who are premature or LBW.42-45
Pregnant adolescent girls with overweight face a higher risk of gestational diabetes, pre-eclampsia, and caesarean delivery compared with pregnant adolescents in the normal weight range.45
Adolescent girls and women who conceive shortly after adolescence are likely to enter pregnancy with iron deficiency, or with low or no iron stores.46
Across a woman's life course, poor nutrition is exacerbated by humanitarian crises, including natural disasters, public health crises and conflict, which can further deteriorate the quality of women's diets, disrupt access to essential services and exacerbate discriminatory gender norms and social inequalities around access to food and care.47
Causes of poor nutrition in women
At all stages of life, malnutrition in women is the result of poor-quality diets, poor services, poor practices and a weak enabling environment. Women's access to diets and care are constrained by several factors, including limited availability of and access to nutritious, safe and affordable foods; limited opportunities for women to access nutrition services; limited knowledge of the importance of preconception nutrition care; and harmful gendered social norms and social and cultural practices.
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Understanding these causes is critical to identifying the appropriate mix of interventions and actions to improve women's nutrition across the life course.
Poor diets. Poor maternal diets are a major risk factor for poor health before and during pregnancy and can contribute to poor pregnancy outcomes.9,48 Across countries, women's

diets are lacking in diversity, with limited intake of vegetables, meat, dairy and fruits. This results in micronutrient deficiencies due to gaps between daily nutrient requirements and the intake of quality nutrients (such as vitamin A, B-vitamins, calcium, iron and zinc).19, 20, 50-53 While women's diets may be better during pregnancy compared to pre- or post-pregnancy diets, they are still not optimal and lack variety. Meeting additional nutritional needs during pregnancy can be especially difficult in terms of micronutrients; in particular, the need for iron often cannot be met by dietary measures alone.

The problem of poor diets is not unique to women in LMICs. Even in high-income countries (HICs), women's diets are often deficient in essential nutrients, such as folate, iron and vitamin D.54 Moreover, women who are affected by overweight may also lack quality nutrients in their diet.55 Across LMICs and HICs alike, women are increasingly consuming diets that are high in ultra-processed foods, high in saturated and trans fats, salt and sugar, and low in essential micronutrients.50, 56,29 These shifts in women's diets are linked to the wide availability and promotion of low-cost, unhealthy foods. Changes in taste preferences towards sugary and salty foods, and the social desirability of such foods, are also impacting women's diets.

With the increasing engagement of women in the formal and informal work sector, time and effort needed for breastfeeding and food preparation may also be constrained, making convenience an important factor in the foods that families choose to purchase and consume. These convenient foods are often ultra-processed and/or of poor nutritional quality. Moreover, sedentary lifestyles and limited opportunities for exercise may prevent women from being physically active.

Poor nutrition services. Women's nutrition, including before and during pregnancy and while breastfeeding, is also determined by their access to and use of services: health services, water and sanitation services, and social safety nets for the most vulnerable women. Limited access to these services can increase the risk of infection and disease and result in poor outcomes for women and their children.

Figure 3. Global coverage (%) of four antenatal care visits and iron and folic acid supplementation (90+ tablets)1

Missed opportunities to provide essential nutrition services to pregnant women020406080100Pregnant women who receive 90+ iron andPregnant women who receive 90+ iron and folic acid tabletsPregnant women who attend at least four antenatal care visits59%38%

For women to avail of these essential services they must be routinely offered, and women must be able to access them. However, in 2020, fewer than two in three women (59 per cent) attended four antenatal care (ANC) visits, as recommended by WHO,* and even fewer women (38 per cent) received the recommended quantity of iron and folic acid (IFA) supplements (90+ tablets) (Figure 3), representing a missed opportunity for providing an essential nutrition service to pregnant women.57

Health services continue to experience supply-related barriers and stock-outs of preventive iron supplements – despite the inclusion of these commodities on the list of essential medicines and despite policies for their free provision in many countries.58 Also, while maternal nutrition counselling is a recommended component of health care, many women do not receive quality nutrition counselling services.58 Similarly, weaknesses in water and sanitation systems

disproportionally affect women's access to clean, safe water and sanitation facilities. Women who lack safe water are also more prone to waterborne illnesses, such as hookworm, which can increase the risk of anaemia and LBW.60

Poor care practices. Malnutrition in women is rooted in poor care practices at the individual, household, community and societal levels. Together, these factors influence women's ability to make informed decisions about their nutrition and care. At the individual and household levels, women's knowledge, beliefs and values, fears about pregnancy, lack of family support, and household dynamics around food distribution, influence their food and care-seeking behaviours and choices.58, 61, 62 At a broader community and societal level, harmful cultural beliefs and practices about pregnancy (e.g., restrictive or excessive food intake), gender norms, and gender and income inequality, may also limit women's access to resources and information, and can influence gendered practices on what women eat, when they eat and how much they eat.

* WHO has updated its recommendations from a minimum of four ANC visits to a minimum of eight ANC contacts to improve women's pregnancy care. However, data reporting at global, regional, and country levels are currently only available for a minimum of four visits, aligned with the previous recommendation.

Weak enabling environment. Despite a strong evidence base and global recommendations to support women's nutrition, there are challenges in translating these into effective policies and programmes.63 It is well-recognized that maternal nutritional status is closely linked to children's growth and development during the first 1,000 days of life. Yet women's nutrition is often neglected in policies and programmes targeting this critical developmental period.58, 64 A lack of prioritization and funding for maternal nutrition has also meant that there are few large-scale comprehensive programmes.64 Programming for maternal nutrition has also relied predominantly on the health system to deliver nutrition services for women during pregnancy, with suboptimal coverage.

Few countries have the appropriate policies and guidelines on what and how to achieve healthy diets for pregnant women and breastfeeding mothers.59 The absence of policies, regulations and standards on food labelling and marketing may facilitate access to unhealthy foods, snacks and beverages, and contribute to suboptimal diets. Further, the absence of specific food-based dietary guidelines targeting the nutritional needs of women across the life course affects the information women receive and the content of nutrition counselling and education programmes that target them. Moreover, nutrition-sensitive social protection programmes are not available in many countries to help meet the nutrition needs of pregnant women, breastfeeding mothers, adolescent girls and other vulnerable groups.

Global goals and targets on women's nutrition

Women's nutrition is directly linked to many global nutrition, health and gender-related goals and targets. Improvements in women's nutrition are needed to achieve SDG 2 on hunger and SDG 3 on health, as well as the World Health Assembly targets on stunting, wasting, obesity, anaemia, LBW and non-communicable diseases (Box 1).

Box 1.

Global goals and targets associated with women's nutrition

Sustainable Development Goal targets.65, 66

SDG 2. Zero Hunger
Target 2.2. End all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons.
SDG 3. Good Health and Well-being
Target 3.4. Reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.
Target 3.8. Achieve universal health coverage, including financial risk protection, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.
SDG 5. Gender Equality
SDG Target 5.1. End all forms of discrimination against all women and girls everywhere.
World Health Assembly nutrition goals and 2030 targets.66, 67
Target 1: Achieve a 50 per cent reduction in the number of children under 5 who are stunted
Target 2: Achieve a 50 per cent reduction in anaemia in women of reproductive age
Target 3: Achieve a 30 per cent reduction in low birthweight
Target 4: Reduce and maintain childhood overweight to less than 3 per cent
Target 5: Increase the rate of exclusive breastfeeding in the first six months to at least 70 per cent
Target 6: Reduce and maintain childhood wasting to less than 3 per cent
WHO targets for the prevention and control of non-communicable disease69
Experience no increase in obesity and diabetes (in adults and adolescents)
Achieve a 30 per cent reduction in the average population salt intake
Similarly, improvements in maternal nutrition are also required to achieve SDG 5 on gender equality and the empowerment of all women and girls.65
Existing global guidance and
recommendations on women's nutrition
UNICEF actions are guided by global policies and guidelines on maternal and child nutrition, maternal and reproductive health, and newborn outcomes. The 2016 WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience reinforce the importance of nutrition interventions during pregnancy and provide comprehensive guidance on the practice, organization and delivery of ANC services. They include universal recommendations for all pregnant women and context-specific recommendations that are increasingly adopted by countries.70 Subsequent updates to these guidelines (e.g., on multiple micronutrient supplementation, calcium and vitamin D) provide countries with the latest recommendations on the provision of essential nutrition services as part of ANC.71-73 Other WHO guidelines relevant for women's nutrition include: Preconception care: Maximizing the gains for maternal and child health, a policy brief (2013); Postnatal care of the mother and newborn (2013); and Guidelines for implementing effective actions for improving adolescent nutrition (2018).26,73,74 For a full list of WHO recommendations from preconception through pregnancy and the postnatal period, refer to Annexes.

2.
Strategic

framework:
Preventing
all forms of
malnutrition
in women
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VISIONGOALOBJECTIVESPROGRAMMEPRIORITIESPROGRAMMEAPPROACHESPROGRAMMEPRINCIPLESFoodsystemHealthsystemWater andsanitationsystemEducationsystemEquity-focusedRights-basedGender-responsiveEmpowermentSocialprotectionsystemSYSTEMSStrategic framework for maternal nutrition A world where all pregnant women and breastfeeding mothers realize their right to adequate nutritionTo protect and promote diets, services and practices that support optimal nutrition for women during pregnancy and breastfeedingDiets, services and practices that support optimal maternal nutritionPolicies, strategies and programmes that support optimal maternal nutritionBefore pregnancyDuring pregnancyNutrition of adolescent mothers and other nutritionally at-risk womenInnovations for improved maternal nutritionWhile breastfeeding1. Conduct a situation analysis2. Advocate for the protection, promotion and fulfillment of nutrition rights3. Design evidence-based policies, strategies and programmes4. Support the scale-up of nutrtion strategies and programmes5. Engage communities for nutrition action6. Strengthen capacities for maternal nutrition programming7. Strengthen supply chains for sustainable nutrition programming8. Mobilize finances for maternal nutrition9. Invest in data, monitoring and evaluation for nutrition10. Advance knowledge, learning and innovation for nutrition
Strategic framework
UNICEF's vision is a world where all women realize their right to adequate nutrition, as shown in the strategic framework for maternal nutrition (Figure 4). The goal of UNICEF programming in this area is to prevent all forms of malnutrition in women – undernutrition, micronutrient deficiencies and overweight – with emphasis on the nutritionally vulnerable periods before and during pregnancy and breastfeeding, and to meet the needs of nutritionally vulnerable pregnant adolescent girls and women.
To realize this vision and goal, UNICEF programming aims to achieve two overarching results:
•
Women benefit from diets, services and practices that support optimal nutrition before and during pregnancy and while breastfeeding.
•
Women benefit from gender-responsive policies, strategies and programmes that support optimal nutrition before and during pregnancy and while breastfeeding.
Figure 4. UNICEF strategic framework for preventing malnutrition in women before and during pregnancy, and while breastfeeding
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3.
Programmatic
priorities
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Five programming priorities

The strategic framework (Figure 4) outlines the five programming priorities that UNICEF will support to achieve the vision, goal and objectives associated with the prevention of all forms of malnutrition in women. These priorities include programming for: (1) women's nutrition before pregnancy; (2) women's nutrition during pregnancy; (3) and women's nutrition during the breastfeeding period. In all contexts, special emphasis will be given to the (4) nutrition of adolescent mothers and other nutritionally at-risk women; and (5) innovations for maternal nutrition. The strategic framework recognizes the need for comprehensive approaches to improve women's nutrition. Leveraging existing approaches and interventions for which UNICEF has a comparative advantage, core priorities include the development of and advocacy for policies, legislation and guidelines that: make nutritious foods more available and affordable; support maternity protection; promote large-scale food fortification and micronutrient supplementation; assess anthropometry; and provide counselling on nutritious diets, adequate weight gain, physical activity and rest. Interventions targeted at meeting the specific needs of malnourished women include: social protection schemes and screening and treatment for anaemia, micronutrient deficiencies, helminth infections and undernutrition. Figure 5 details this core package of UNICEF-supported interventions across the life course.

AdolescencePreconceptionPregnancyBreastfeedingDuring pregnancy, nutritious diets support foetal growth and development and help meet women's energy needs, which increase by an average of 300 kcal/day during this timeNutritious diets are critical during the first six months postpartum when dietary requirements increase by 640 kcal/day among exclusively breastfeeding womenBefore pregnancy, women need nutritious diets to protect their health and establish sufficient nutrient reserves to support pregnancyAdolescents need nutritious diets with high amounts of energy, protein and micronutrients to fuel rapid physical growth and developmentAdolescentAdultAdolescencePreconceptionPregnancyBreastfeedingDuring pregnancy, nutritious diets support foetal growth and development and help meet women's energy needs, which increase by an average of 300 kcal/day during this timeNutritious diets are critical during the first six months postpartum when dietary requirements increase by 640

kcal/day among exclusively breastfeeding womenBefore pregnancy, women need nutritious diets to protect their health and establish sufficient nutrient reserves to support pregnancyAdolescents need nutritious diets with high amounts of energy, protein and micronutrients to fuel rapid physical growth and developmentAdolescentAdultAdolescencePreconceptionPregnancyBreastfeedingDuring pregnancy, nutritious diets support foetal growth and development and help meet women's energy needs, which increase by an average of 300 kcal/day during this timeNutritious diets are critical during the first six months postpartum when dietary requirements increase by 640 kcal/day among exclusively breastfeeding womenBefore pregnancy, women need nutritious diets to protect their health and establish sufficient nutrient reserves to support pregnancyAdolescents need nutritious diets with high amounts of energy, protein and micronutrients to fuel rapid physical growth and developmentAdolescentAdultAdolescencePreconceptionPregnancyBreastfeedingDuring pregnancy, nutritious diets support foetal growth and development and help meet women's energy needs, which increase by an average of 300 kcal/day during this timeNutritious diets are critical during the first six months postpartum when dietary requirements increase by 640 kcal/day among exclusively breastfeeding womenBefore pregnancy, women need nutritious diets to protect their health and establish sufficient nutrient reserves to support pregnancyAdolescents need nutritious diets with high amounts of energy, protein and micronutrients to fuel rapid physical growth and developmentAdolescentAdult

Maternal nutrition interventions across the life course

Figure 5. UNICEF-supported interventions to prevent malnutrition in women before and during pregnancy and while breastfeeding

Interventions aimed at benefiting all women

Before pregnancy

During pregnancy

While breastfeeding

Policies, legislation and guidelines to make nutritious foods more available and affordable

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Policies and legislation to support maternity protection

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Nutrition education and counselling on nutritious and safe diets, physical activity and rest, appropriate weight gain, and micronutrient supplementation

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Large-scale food fortification

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Supplementation with iron containing supplements (IFA)

r

Supplementation with iron containing supplements (IFA or MMS)
r
r
Anthropometric assessment (height, weight, BMI or MUAC), counselling and referral as needed
r
r
r
Gestational and post-natal weight gain monitoring
r
r
Screening for anaemia and treatment
r
r
r
Interventions aimed at benefiting adolescent mothers and other nutritionally at-risk women
Before pregnancy
During pregnancy
While breastfeeding
Social protection interventions (cash, vouchers, food rations, and food supplements)
r
r
Deworming prophylaxis
r
r
r
Nutrition education on increasing daily energy and protein intake
r
Balanced energy-protein dietary supplementation (prevention and treatment)
r
Calcium supplementation and nutrition counselling to increase consumption of calcium-rich foods
r
Vitamin A supplementation
r
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Programmatic priority 1.
Women's nutrition before pregnancy
Women who will become mothers need nutritious and safe diets during the critical period before pregnancy for their own health, nutrition and well-being and that of their newborn.74,75 However, many women are malnourished before pregnancy; they may be underweight, deficient in micronutrients and/or anaemic due to inadequate food intake or infection, or they may be living with overweight or micronutrient deficiency due to limited access to, and availability and affordability of nutritious diets. In many settings, pregnancies are not planned, and women are often unaware of their pregnancy status or unwilling to divulge it in early stages of pregnancy.

This makes it difficult to achieve significant changes in diets or nutritional status in early pregnancy, which highlights the need to support healthy diets and care among women before conception.74

Understanding what influences and drives women's food options and choices can provide important insights into the policies, guidelines and programmatic actions needed to ensure that all women have access to nutritious, safe and affordable diets before they conceive. This includes understanding the barriers women face in accessing nutritious diets and services that support healthy diets prior to pregnancy. It also requires an understanding of the social, cultural and environmental factors that determine which foods women consume. For instance, although women play an important role in purchasing and preparing foods, they may not always have influence over what foods to purchase due to access and affordability, or how food is allocated at the household level. With more women entering the formal employment sector, their choices may also be influenced by convenience, causing them to opt for more processed, low-quality foods.

The adoption of national policies, strategies and other normative documents can help foster an enabling environment that supports women in accessing nutritious and safe diets and engaging * Family-friendly policies are the measures and arrangements that have a positive impact on workers' abilities to reconcile work and family responsibilities – and advance the development and well-being of their children. in physical activity before pregnancy. National standards on what and how to achieve healthy and nutritious diets for women, including in the form of food-based dietary guidelines, can protect women's nutrition and shape the design of policies and programmes. Advocacy is critical to encourage governments to implement regulations on food labelling, adopt policies that limit how foods are marketed, and tax unhealthy foods and beverages to facilitate nutritious, safe, affordable and sustainable food choices.

Pre-pregnancy actions should also consider approaches and interventions that address the underlying societal determinants of poor nutrition in women. For instance, social protection measures, such as cash transfers, can help address the underlying drivers of poor nutrition in women and improve household food consumption.76 Expanding family-friendly policies* to facilitate working women's access to health services and nutrition counselling before pregnancy is also a promising approach.77

In settings where diets are poor and micronutrient deficiencies are widespread, fortifying staple foods (e.g., wheat flour, rice, cooking oil and salt) with one or more micronutrients (e.g., folic acid, iron, vitamin A and iodine) can improve the quality of women's diets and improve pregnancy outcomes. Folic acid fortification of flours and cereals has been successfully implemented in countries around the world, contributing to impressive declines in neural tube defects among newborns.78-81 Iron fortification of staple foods (e.g., cereals, flour, rice) improves biomarkers for iron status and anaemia and is currently mandated by over 80 countries.81,82 Similarly, salt iodization is effective in improving iodine intakes and preventing and controlling iodine deficiency in pregnant women and breastfeeding mothers.83-85 Lessons from implementing large-scale food fortification in LMICs show that mandatory legislation and standards, regulatory monitoring and industry consolidation are essential for the long-term success of national food fortification programmes.85

Creating opportunities for women to access maternal health services, nutrition education and counselling and micronutrient supplements before pregnancy is important and can improve pre-pregnancy weight and pregnancy outcomes.21,76 Experiences in HICs and LMICs alike show that pre-pregnancy nutrition counselling (one-to-one in facilities and/or group counselling in communities) increases ANC attendance during pregnancy and the likelihood of breastfeeding.86 As more women plan their pregnancies, there may be opportunities to link nutrition counselling and the provision of micronutrient supplements to these visits.

The health system offers various platforms for delivering nutrition services to women, such as ANC and postnatal care contacts, and child immunization and growth monitoring visits during the postnatal period. However, reaching women before pregnancy is a greater challenge because a significant proportion of all pregnancies are unplanned and non-pregnant women are less likely to be in regular contact with health services.87 In most contexts, it is also not practical to counsel all non-pregnant women of reproductive age; moreover, those who are not planning a pregnancy may be less receptive to maternal nutrition counselling. A rational approach is to target preconception counselling to women who are planning a pregnancy and those at a high likelihood of becoming pregnant for the first time, such as premarital or newlywed women in settings where these women are likely to become pregnant within one or two years of marriage.88,89

UNICEF ACTIONS

UNICEF advocates for policies, strategies and programmes that aim to improve the nutritional status of women before pregnancy. This includes supporting the formulation of policies and programming that: strengthen food environments for women and their communities; create opportunities to reach women before pregnancy with nutrition counselling, micronutrient supplementation and social and behaviour change communication (SBCC); and scale-up large-scale food fortification, including fortification of salt, wheat flour, rice, and cooking oils.

Programmatic priority 2.

Women’s nutrition during pregnancy

All pregnant women require nutritious diets containing adequate energy, protein, vitamins and minerals, along with adequate services and practices for optimal maternal and newborn outcomes.70 Ensuring these nutritional needs are met during pregnancy requires a comprehensive approach that includes counselling on nutritious diets, monitoring appropriate weight gain, micronutrient supplementation and deworming prophylaxis as appropriate.

Counselling pregnant women on nutritious diets can improve gestational weight gain, reduce maternal anaemia in late pregnancy, increase birthweight, and lower the risk of preterm birth.70,90 Pregnant women who are counselled on nutritious diets and physical activity and rest are also less likely to experience excessive gestational weight gain during pregnancy, gestational diabetes, caesarean section, macrosomia, large-for-gestational-age newborns and postnatal weight retention. Further, their children are less likely to experience obesity in childhood.31,91-94 SBCC interventions delivered as part of counselling were also found to increase physical activity in pregnant women.95 These findings are relevant to all contexts – in both HICs and LMICs – where rates of overweight and obesity and mean BMI are increasing in women.

The WHO ANC guidelines recommend nutrition counselling for all women as part of pregnancy care, which includes actions to promote and support: (1) safe and nutritious diets; (2) adherence

to micronutrient supplements; (3) early and exclusive breastfeeding; and (4) hygiene practices. Table 2 details the recommended content of nutrition counselling across the life course. Box 2 outlines some key considerations for providing quality nutrition counselling based on the latest available evidence.96

Table 2: Key content for nutritional counselling of women and adolescent girls during preconception, pregnancy and postnatal care26,70,74,96

Preconception

Pregnancy

Postnatal

Dietary intake

Healthy eating and physical activity to stay healthy, attain or maintain a healthy weight and/or prevent excessive weight gain

r

r

r

Increase daily energy and protein intake to increase BMI and/or reduce the risk of low birthweight infants in undernourished populations

r

r

r

Diverse diet, including locally available and affordable nutritious foods and fortified foods (iodized salt, fortified vegetable oil and fortified cereals)

r

r

r

Avoid drinking tea or coffee with meals and limit the amount of coffee during pregnancy in contexts where tea or coffee are a commonly consumed

r

r

r

Adequate rest and reducing heavy workloads

r

r

Dietary supplementation

Continued and consistent use of IFA or multiple micronutrient supplements, including how to take supplements and manage side-effects

r

r

r

Continued and consistent use of calcium supplements in countries with low calcium intake, including how to take supplements and manage side-effects

r

Continued and consistent use of balanced energy-protein supplements in undernourished populations
r
r
r
Breastfeeding
Breastfeeding (initiation immediately after delivery, providing colostrum, not giving prelacteal feeds, exclusive breastfeeding, continued breastfeeding, managing breastfeeding problems)
r
r
Hygiene
Handwashing practices at critical times and food hygiene practices through safe handling, preparation and storage
r
r
r

Box 2
Key considerations for strengthening the coverage, quality and equity of maternal nutrition counselling
UNICEF and WHO recommend nutritional counselling for adolescent girls and women during preconception, antenatal and postnatal care, including in humanitarian contexts. The evidence base on how to improve the coverage, quality and equity of maternal nutrition counselling is developing, but gaps remain. Nevertheless, it is essential to act now to strengthen maternal nutrition counselling, while continuing to invest in research to further build the evidence. Countries should consider the following actions.96
1 Targeting: The primary target audiences are adolescent girls and women planning to conceive (at least three months before conception), pregnant women and women who have recently given birth (from delivery to six months postpartum). Adolescent girls and women at nutritional risk (e.g., those affected by short stature, underweight, overweight, obesity or anaemia) and those who lack experience (e.g., first time pregnancies) should be prioritized for more intensive counselling support. In contexts where adolescent girls and women need the support of family members to take decisions on their diet or use of health care services, these family members should also be counselled.
2 Counselling content and materials: Women need information and counselling on dietary intake, physical activity, dietary supplementation and hygiene practices (Table 2). The content of counselling materials should reflect locally prevalent forms of malnutrition, and the barriers and enablers to positive maternal nutrition practices, including social norms and socio-cultural beliefs and practices. Where possible, maternal nutrition should be included in counselling materials or packages on preconception, antenatal and postnatal care and breastfeeding. At the individual level, counselling should be tailored to the nutritional status and the economic and socio-cultural circumstances of each adolescent girl or woman. It is important to focus on small doable actions that an adolescent girl or woman and her family members can take.

3 Counselling modes: Both individual and group counselling modalities are needed. Individual counselling is better suited to an individual's counselling needs but is time-intensive for health providers. As such, individual counselling may need to be prioritized for women receiving their first contact with a health provider, or for those who are pregnant for the first time or who are nutritionally at-risk. Group counselling can be provided to adolescent girls and women at lower risk of nutrition challenges. Remote counselling modalities (e.g., mobile phones and digital media) may complement but should not replace face-to-face counselling until more evidence on their effectiveness in different contexts is available.

4 Timing, frequency and duration of counselling: Nutrition counselling should begin as soon as a girl or woman plans a pregnancy. To do this, counselling can be targeted at premarital or newlywed couples in contexts where it is common for women to have their first pregnancy within one or two years of marriage. For at least six months following birth, every ANC contact and all interactions with health workers and community workers should be used to provide nutrition counselling. Better counselling outcomes are also expected with higher frequency and longer duration contacts. However, decisions on the frequency and duration of counselling are ultimately a trade-off between what is desirable and what is feasible, given the delivery platforms available and workload of health providers.

5 Service delivery platforms and expanding reach: Counselling services should make use of existing health delivery platforms at facility and community level that are nationwide in coverage or

have the potential to reach scale. Strategies should be developed to identify, sensitize and mobilize women from hard-to-reach, marginalized and vulnerable families. In addition to counselling, other communication channels and platforms – such as mass media (radio, television, websites and social media), mobile text messaging and community mobilization – should be used to reinforce messages on positive maternal nutrition practices for all women and their families.

6 Capacity to counsel women: Health workers and community health workers should be: assigned the responsibility to counsel on maternal nutrition in their job descriptions; given the necessary training (both pre- and inservice) to build their knowledge, skills and competencies; provided with access to quality job aids and supportive supervision; and appropriately renumerated and/or incentivized to sustain their motivation.

7 Monitoring: Counselling should be integrated into national standards for assessing, monitoring and improving the quality of maternal care. These standards should explicitly define what is required to achieve highquality counselling on maternal nutrition. In addition, indicators on the provision of maternal nutrition counselling should

be included in routine health
information systems and
periodic household surveys, and
the data used to track progress
and take corrective action.

Women have increased nutritional requirements during pregnancy, which may be challenging to meet through diet alone, especially in LMICs where the quality of women's diets are poor and micronutrient deficiencies are widespread. Although pregnancy is a time when many women and their families are motivated to make changes to their diets, achieving these changes during the pregnancy period and correcting micronutrient deficiencies that occurred prior to pregnancy may not be feasible with diet alone. Supplementation with micronutrients is thus essential to meet additional nutritional requirements and has been adopted as the standard of pregnancy care across countries (Table 3).
Preventive daily or intermittent supplementation with iron during pregnancy is effective in increasing haemoglobin concentration, reducing anaemia (including severe post-partum anaemia) and reducing LBW.97,98
Ensuring women have access to supplements early and routinely in pregnancy is important as it increases the chances that pregnant women consume the recommended number of supplements, thus improving birth outcomes.99-102
* https://www.hemocue.us
WHO recommends that all women and adolescent girls take daily IFA supplements containing 30-60 mg of elemental iron and 400 µg folic acid to prevent iron deficiency and anaemia and improve pregnancy outcomes.70, 103, 104 In settings where anaemia is a mild public health problem (<20 per cent prevalence), intermittent/weekly IFA doses containing 120 mgs of elemental iron and 2,800 µg (2.8 mg) of folic acid is recommended for pregnant women and adolescent girls, particularly among women who are not anaemic, to reduce possible of side-effects from IFA. Table 3 provides details on WHO recommendations on IFA supplementation for pregnant women, by severity of anaemia.
Screening women for anaemia at different points in pregnancy (12, 26 and 36 weeks) and providing timely treatment is an essential component of nutrition care in pregnancy. WHO recommends using the full blood count testing method for diagnosing anaemia during pregnancy, or using a hemoglobinometer (HemoCue@)* when full blood count testing is not available. In settings where supplies and diagnostic equipment for screening women are not available and health workers may not be adequately trained. clinical testing (i.e., checking for physical signs of pallor) can be used
Table 3. WHO recommendations on preventive and therapeutic iron supplementation in pregnancy25,70,103,104
Recommendation type
Preventive
Therapeutic
Settings
Anaemia prevalence is <20% (mild)
Anaemia prevalence is <40% (moderate)

Anaemia prevalence is ≥40% (severe)
Based on haemoglobin testing and levels (see Table 4)
Frequency
Intermittent (weekly)
Daily
Daily
Daily
Supplement composition
120 mg of elemental iron and 2,800 µg folic acid
30 mg of elemental iron and 400 µg of folic acid
60 mg of elemental iron and 400 µg of folic acid
120 mg of elemental iron and 400 µg of folic acid
Duration
Weekly throughout pregnancy if daily iron is not acceptable due to side-effects
Daily throughout pregnancy
Daily throughout pregnancy
Until haemoglobin levels return to normal levels (11 g/dl or higher), after which daily or intermittent regimen can resume
Special considerations
In malaria endemic zones, iron supplementation should be provided only in conjunction with measures to prevent, diagnose and treat malaria.
In many countries, women receive two IFA tablets to treat anaemia, each containing 60 mg of elemental iron and 400 µg of folic acid, unless a specific supplement for treatment purposes is procured containing 120 mg of iron and 400 µg of folic acid.
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to detect severe anaemia.105 Table 4 provides the haemoglobin cut-offs for assessing anaemia in non-pregnant and pregnant women.
Increasingly, countries across both development and humanitarian settings are adopting multiple micronutrient supplements (MMS) as an approach to improve quality of care for pregnant women and breastfeeding mothers. There is clear evidence that MMS provide additional benefits over IFA in meeting the increased nutrient requirements of pregnancy and reducing adverse pregnancy outcomes (stillbirths, preterm births, SGA and LBW), with greater benefits conferred among infants of women who are anaemic and underweight.71, 106-108 Moreover, MMS containing 30 mg of iron are as effective as IFA containing 60 mg of iron in preventing maternal anaemia. MMS are routinely used by women in HICs and are increasingly prescribed to affluent women in LMICs.109 Their adoption in LMICs is an opportunity to improve the quality of pregnancy care for all women.
MMS are low-cost (@US$0.01–0.02 per tablet) and are also cost-effective, yielding a high return on investment.110,111 The use of MMS is now supported by the 2020 update to the WHO Antenatal Care Recommendations for a Positive Pregnancy Experience in the context of ANC services and informed by implementation research designed to optimize MMS coverage and adherence.71, 112, 116 MMS has recently been added to the WHO Model List of Essential Medicines; this is an important step towards their inclusion in policies and national essential medicines lists, which can facilitate access, lower costs, and reduce restrictions on importation

or local production.114 Box 3 outlines key considerations for introducing MMS as part of national ANC programmes.

Table 4. Haemoglobin cut-offs for anaemia in non-pregnant and pregnant women living at sea level.72

All Anaemia	Mild Anaemia	Moderate Anaemia	Severe Anaemia
Non-pregnant women			
Hb<12 g/dl	Hb 10–11.9 g/dl	Hb 7.0–9.9 g/dl	Hb<7 g/dl
Pregnant women – first and third trimester			
Hb<11 g/dl	Hb 10.0–10.9 g/dl	Hb 7.0–9.9 g/dl	Hb<7 g/dl
In the second trimester			
Hb<10.5 g/dl			

BOX 3

Key considerations for introducing multiple micronutrient supplements

Based on the latest guidance from WHO and informed by implementation research, countries may consider introducing MMS, especially in settings where women's diets are poor and anaemia, micronutrient deficiencies and/or LBW are prevalent. In doing so, countries should consider the following guidance.116

1 Create an enabling environment to (i) facilitate an understanding of the evidence as it relates to the benefits of MMS over IFA; (ii) establish a national coordinating mechanism for maternal nutrition; and (iii) develop a plan for MMS introduction to ensure sustainability and impact.

2 Analyse key determinants of anaemia. Given the different etiologies of anaemia, analyse the magnitude and distribution of anaemia and its determinants (e.g., iron and other micronutrient deficiencies, malaria or soil-transmitted helminthic infections) and implement evidence-based interventions to address these determinants as per WHO and/or national guidelines.

3 Introduce MMS as part of a comprehensive package to improve the quality of nutrition services in ANC. The updated ANC guidelines recommend that women have eight ANC contacts, including those through the community, thereby offering additional opportunities to counsel and deliver MMS along with other recommended interventions. Explore alternative options to introduce MMS as part of social protection schemes and to deliver for a cost through private entities.

4 Ensure uninterrupted quality MMS supplies to harness their benefits. This may require supply chain analyses to maintain MMS access where IFA stock-outs are routinely reported. It may also require an analysis of local production capacities to establish local MMS manufacturing and an

understanding the regulatory landscape to facilitate MMS importation. Refer to Annexes for MMS-related supply tools.
5 Strengthen health worker capacities to effectively deliver, counsel and support women to receive and consume MMS. Investing in the training of health and community workers is essential to ensure effective distribution and counselling on the benefits of MMS. Depending on the context, this may require updates to pre-service and in-service/refresher training.
6 Counsel women, adolescent girls and key influencers on the importance of MMS, nutritious diets and appropriate weight gain. This requires attention to SBCC, which should be tailored to the needs of pregnant women and adolescent girls to raise awareness among key influencers on MMS and nutritious diets. Refer to Box 2 on maternal nutrition counselling.
7 Integrate MMS coverage into routine monitoring systems, including health management information systems, such as the District Health Information System 2 (DHIS2). Furthermore, there may be opportunities to introduce MMS monitoring into health facility assessments and household surveys (e.g., Demographic and Health Surveys).
30 Tablets, Based on the UNIMMAP formulaPregnancy and Lactation Vitamin & Mineral Supplement Manufactured by Lomapharm®, D-3180 Emmerthal, Fed. Rep. of GermanySupplied byBatch No.:Man Date:Exp. Date:80044245 | 42x30x95 | ro74 | Pregnancy and LactationVitamin & Mineral Supplement Provides 15 essential nutrients to support a healthy pregnancyPregnancy and Lactation Vitamin & Mineral Supplement 30 Tablets3 x 10 TabletsPregnancy and Lactation Vitamin & Mineral Supplement Each tablet contains:Vitamin A (as acetate) RAE 800mcg; Vitamin E (as acetate) TE 10mg; Vitamin D (as Cholecalciferol) 5 mcg (200 IU); Vitamin B1 (as Thiamine Mononitrate) 1.4 mg; Vitamin B2 (Riboflavin) 1.4 mg; Vitamin B3 (as nicotinamide) NE 18mg; Vitamin B6 (as Pyridoxine) 1.9 mg; Vitamin B12 (Cyanocobalamin) 2.6 mcg; Folic acid 400 mcg (667 mcg DFE); Vitamin C (Ascorbic acid) 70 mg; Elemental Iron (as Ferrous Sulphate) 30 mg; Zinc (as Zinc Sulfate) 15 mg; Copper (as Copper Sulfate) 2 mg; Selenium (as Sodium Selenite) 65 mcg; Iodine (as Potassium Iodide) 150 mcgPregnancy and Lactation Vitamin & Mineral Supplement Indications: Vitamin and Mineral supplement for pregnant and lactating women.Directions for Use: Not to be chewed. Swallow with glass of water. Preferably to be taken with food.Dosage: One tablet per day with a meal or as directed by the physician.Storage: Do not store above 30°C. Protect from light and moisture. Keep out of the reach and sight of children.

Additional supplementation of specific vitamins and minerals may be necessary in contexts of deficiency. In settings with low calcium intakes and high prevalence of calcium deficiency, daily calcium supplementation (1.5–2.0 g of oral elemental calcium/day) can reduce the risk of pre-eclampsia, preterm birth, maternal morbidity and mortality.72 Calcium supplementation may be initiated at the first ANC visit to improve adherence. In these settings, nutrition counselling to promote the use of calcium-rich foods is also an effective strategy to improve intakes.70,72 In countries with a high prevalence of night blindness and low levels of serum retinol, vitamin A supplementation can reduce night blindness in pregnant women. Similarly, in areas where vitamin A deficiency is a public health problem, daily supplementation (up to 10,000 IU) or weekly supplementation (up to 25,000 IU) is recommended.70
Prophylactic deworming using a single-dose albendazole (400 mg) or mebendazole (500 mg) is recommended for pregnant women after the first trimester to reduce the burden of intestinal

worms caused by soil-transmitted helminth infections where hookworm and/or T. trichiura infection is ≥20 per cent and where anaemia is a public health problem (i.e., prevalence of ≥40 per cent).70, 117, 123 Provision of routine deworming medication when delivered as part of ANC substantially improved pregnancy outcomes (e.g. LBW, newborn mortality) even in countries with low soil-transmitted transmissions.118

Table 5 provides details of the various maternal nutrition commodities that are available through UNICEF's Supply Division.

Table 5. Essential nutrition commodities for women available through UNICEF Supply Division

Nutrition commodities	Description
Iron 30 mg and folic acid 400 mcg tablets	Iron 30 mg (as ferrous fumarate or ferrous gluconate) and folic acid 400 mcg tablets. Available in a 100-count blister pack.
Iron 60 mg and folic acid 400 mcg tablets	Iron 60 mg and folic acid 400 mcg film coated tablets. Available in 100-count and 30-count blister packs and a 100-count bottle.
Iron 60 mg tablets	Iron 60 mg (as ferrous fumarate, gluconate or sulphate) tablets. Available in a 100-count bottle.
Folic acid 400 mcg tablets	Folic acid 400 mcg tablets. Available in 100-count pack.
Multivitamin and mineral tablets	Pregnancy and lactation vitamins and minerals supplement. Based on the United Nations International Multiple Micronutrient Antenatal Preparation (UNIMMAP) formula. Available in a 100-count bottle and 30-count blister pack.
Calcium 300 mg tablets	Calcium 300 mg tablets. Available in a 100-count blister pack.
Mebendazole 500 mg chewable tablets	Mebendazole 500 mg tablets. Available in a 100-count bottle.
Albendazole 400 mg chewable tablets	Albendazole 400 mg chewable tablets. Available in a 100-count bottle.
Supplementary spread for pregnant and lactating women	Supplementary spread for pregnant and breastfeeding women. Lipid-based nutrition supplement, 92 g sachet. Available in a 150-count carton.
Mid-upper arm circumference (MUAC) tape, adult, without colour code	MUAC measuring tape. Pack of 50 tapes with instructions for use.

Table 6. United States Institute of Medicine recommendations on weight gain during pregnancy, by pre-pregnancy BMI, for women classified as underweight, normal and overweight/obese.13

Total weight gain	Rates of weight gain (2nd and 3rd trimester)
Pre-pregnancy nutritional status (BMI)	
Range in kg	
Range in lbs	
Mean (range) in	

kg/week
Mean (range) in
lbs/week
Underweight (<18.5 kg/m2)
12.5–18
28–40
0.51 (0.44–0.58)
1 (1–1.3)
Normal weight (18.5-24.9 kg/m2)
11.5–16
25–35
0.42 (0.35–0.50)
1 (0.8–1)
Overweight (25.0-29.9 kg/m2)
7–11.5
15–25
0.28 (0.23–0.33)
0.6 (0.5–0.7)
Obese (≥30 kg/m2)
5–9
11–20
0.22 (0.17–0.27)
0.5 (0.4–0.6)

Ensuring women enter pregnancy at a healthy weight and gain weight within national and international guidelines is important for achieving healthy pregnancy outcomes. Assessing weight and nutritional status early in pregnancy is important to establish a baseline for measuring the progression of the pregnancy and to identify women who may be at risk for poor pregnancy outcomes and in need of additional support. To determine nutritional recommendations for weight gain during pregnancy, an accepted standard of care is for health care providers to measure the woman's weight and height and to calculate BMI (≤20 weeks gestation). Routine monitoring of weight gain at each ANC contact is important for assessing the progression of the pregnancy.

WHO guidance to increase the number of ANC contacts from at least four visits to eight contacts represents additional opportunities to monitor weight gain, counsel women and identify those in need of additional support. While most 'normal' gestational weight gain occurs after 20 weeks of gestation, the definition of 'normal' weight gain is subject to regional variations and should also take pre-pregnancy BMI into consideration when feasible. Table 6 outlines the recommendations for weight gain during pregnancy by pre-pregnancy BMI for women classified as underweight, normal and overweight/obese.13

In many LMICs, there are few opportunities to assess women's nutritional status before pregnancy or early enough in pregnancy. Measuring height and calculating BMI can be difficult in some field settings; the right equipment

may not be available and health care workers may not have the skills to accurately assess women's nutritional status. Where such assessments are not feasible before or early in pregnancy, a MUAC measurement may be used as an alternative to BMI to identify pregnant women who are underweight and to determine the prevalence of underweight in the population.120,121 Low MUAC in pregnant women has been associated with intrauterine growth restriction, LBW and neonatal morbidity.120

MUAC offers the advantage of being inexpensive, simple to use, and providing a narrow range of cut-off values for underweight status that are not affected by pregnancy status. It is increasingly being used to assess the nutritional status of pregnant women and determine their eligibility for nutrition support programmes, especially in emergency or humanitarian contexts when measuring weight and height may be difficult.120-123 The MUAC values below which most adverse effects were identified were <22 and <23 cm; some emergency programmes have used MUAC cut-offs of <21 cm to <23 cm to identify women at nutritional risk.124 Because a recommendation for a universal MUAC cut-off for pregnant women has yet to be established, countries should consider undertaking a cost-benefit analysis to identify a context-specific MUAC cut-off.120, 122

UNICEF ACTIONS

UNICEF advocates for and supports policies, strategies and programmes that reflect global recommendations on healthy eating, micronutrient supplementation (either IFA or MMS; and calcium), screening for micronutrient deficiencies (including anaemia), deworming prophylaxis, weight gain monitoring, and counselling on physical activity and rest for pregnant women. Programmatic priority 3.

Women's nutrition while breastfeeding

The postnatal period represents an important opportunity to restore maternal nutrient reserves after childbirth and ensure they are sufficient to meet the additional energy needs associated with breastfeeding.13 This is particularly important among women who are undernourished.15, 17

Nutrition counselling, micronutrient supplementation and deworming are recommended for women after delivery to replenish nutrients lost due to pregnancy, childbirth and breastfeeding, and to encourage healthy weight loss after pregnancy.26,103 Counselling mothers on the benefits of early and continued breastfeeding for their own health is particularly important, as breastfeeding is associated with short-term benefits (including postnatal weight loss, mother-infant bonding, lactational amenorrhea) and longer-term benefits (such as a reduced risk of diabetes, cardiovascular disease and certain cancers).124

Creating opportunities to counsel women and family members on the importance of nutritious diets and breastfeeding – in health facilities, at home, and during well-child and immunization visits – is critical (Table 7).

It is important that national guidelines and training curricula include nutrition counselling, micronutrient supplementation and deworming, especially to meet the needs of adolescents and mothers affected by underweight and overweight. Family-friendly policies – such as paid maternity leave, access to quality childcare, breastfeeding breaks and dedicated nursing spaces – promote women's health by providing them the opportunity to recover from childbirth and breastfeed in the critical early weeks and months of life. These policies also support women's

participation in the workforce by making paid and unpaid work less of a barrier to breastfeeding.125

Daily iron supplementation, either alone or in combination with folic acid, is recommended postnatally for 6–12 weeks following delivery to reduce the risk of anaemia in settings where gestational anaemia is a public health concern.26 ,126 In settings where MMS are provided during pregnancy, women can continue taking them during the postnatal period. In countries with guidance for routine deworming in pregnancy, breastfeeding women should also receive deworming prophylaxis as part of postnatal visits to reduce the burden of soil-transmitted helminth infections.123

Table 7. Pregnancy and postnatal contacts for the provision of maternal nutrition interventions.26,70

Period	Contact	Maternal nutrition interventions
Pregnancy, first trimester	Contact 1: Up to 12 weeks	Assessment: All anthropometric measurements, clinical examination, tests Supplementation: IFA, MMS, calcium Counselling on nutrition/-related topics
Pregnancy, second trimester	Contact 2: 20 weeks Contact 3: 26 weeks	Assessment: Gestational weight gain; blood pressure; monitoring anaemia, diabetes, infections Supplementation: IFA, MMS, calcium Counselling on nutrition/-related topics
Pregnancy, third trimester	Contact 4: 30 weeks Contact 5: 34 weeks Contact 6: 36 weeks Contact 7: 38 weeks Contact 8: 40 weeks	Assessment: Gestational weight gain; blood pressure; monitoring anaemia, diabetes, infections Supplementation: IFA, MMS, calcium Counselling on nutrition/-related topics and breastfeeding
Postnatal	Contact 1: First day (24 hours) Contact 2: Day 3 (48–72 hours) Contact 3: Between days 7–14 Contact 4: Six weeks Contacts ≥5*: Monthly, bimonthly or trimonthly	Assessment: All anthropometric measurements; clinical examination

Supplementation: IFA, MMS
Counselling on nutrition/-related topics, breastfeeding and complementary feeding
*Plan for additional contacts for breastfeeding women with maternal nutrition services during child health visits extending from the last WHO recommended postpartum visit at six weeks up to two years postpartum

UNICEF ACTIONS
UNICEF advocates for and supports policies, strategies and programmes that improve the nutritional status of breastfeeding mothers (e.g., family-friendly policies); reflect global recommendations on healthy eating, micronutrient supplementation, deworming prophylaxis, physical activity and rest during breastfeeding periods; and strengthen the quality of nutrition counselling and support for breastfeeding mothers during postnatal care visits.
Programmatic priority 4.
Nutrition of adolescent mothers and
nutritionally at-risk women
Nutrition care and support on healthy diets, appropriate weight gain, physical activity and rest are essential for all women to ensure optimal pregnancy outcomes for the mother and child. Some women, however, may be at increased risk for malnutrition and poor pregnancy outcomes, and as such, require additional attention and support.128 Women who are nutritionally at-risk and in need of additional support include those who are underweight prior to and during pregnancy, those who gain inadequate weight during pregnancy, and those suffering from anaemia and other micronutrient deficiencies. The rapid rise in overweight and obesity among women in LMICs also means that more attention must be paid to the distinct needs of this group before and during pregnancy.
Adolescent girls who are pregnant are also at higher risk of poor pregnancy outcomes because they are still growing; they have important nutritional requirements of their own, resulting in even higher nutritional requirements during pregnancy.38-40, 128 Other groups that may be at higher risk of poor nutritional outcomes are women with disabilities, women with mental health concerns, women living with infectious diseases (e.g., HIV and tuberculosis), women who have faced gender-based violence, and ethnic and racial minorities, among others.70 Women living in emergency settings, and in contexts where there is food and nutrition insecurity or humanitarian crisis, are also especially vulnerable.
In settings where pregnant women and breastfeeding mothers already face challenges in meeting their nutritional requirements, humanitarian crisis may exacerbate malnutrition.
Meeting the nutritional needs of pregnant adolescent girls and women affected by underweight (low BMI or MUAC): Where the prevalence of underweight is high among pregnant women (20–39 per cent), nutrition education and counselling with the aim of increasing energy and protein intake are recommended for all pregnant women to reduce the risk of LBW and preterm birth, and to increase birthweight. The use of balanced energy-protein supplements (BEP) (i.e., supplements wherein protein provides less than 25 per cent of the total energy content) is recommended for pregnant women who are underweight to reduce the risk of stillbirth and SGA in newborns.
The use of BEP supplements before and in early pregnancy has been found to improve gestational weight gain and pregnancy outcomes, including stillbirth, LBW and SGA, especially

among undernourished pregnant women.127,129 In late pregnancy, the use of BEP supplements in women with low BMI or inadequate weight gain can prevent stillbirth and SGA births.127 Similarly, small-quantity (20 g/dl) lipid-based nutrient supplements (sq-LNS) containing micronutrients and macronutrients, including essential fatty acids, have been found to improve birthweight, birth length, SGA and newborn stunting in pregnant adolescent girls and women, and breastfeeding mothers.130,131 Among underweight and pregnant adolescents, the use of sq-LNS has been shown to improve newborn stunting and wasting, with greater benefits among pregnant adolescents living with moderate to severe food insecurity.132 Details on the composition of different maternal nutrition food supplements are included in Table 8.

Table 8. Recommended dietary allowances for non-pregnant, pregnant and breastfeeding women and composition of MMS, BEP supplements and sq-LNS13,14,133,134

Recommended dietary allowances for:	MMS UNIMMAP formulation	Balanced energy-protein supplement (92 g)	Balanced energy-protein supplement (75 g)	Small-quantity lipid-based nutrition supplement (20 g)
non-pregnant women	2,000	515 .22.3%-19.5%]	420 .18.2%-16%]	119 .5.2%-4.5%]
pregnant women	2,300			
breastfeeding women	2,640			
Energy (kcal)	-			
% contribution of energy				
Protein (g)	46	14.4	11.7	2.6
	71			
	71			

Vitamin A (μg RE)
700
770
1300
800
881
718
800
Vitamin D (μg)
5 (200 IU)
5 (200 IU)
5 (200 IU)
5
15
12.2
15
Vitamin E (mg)
15
15
19
10
13
10.5
15
Folic acid (μg)
400
600
600
400
461
378
600
Thiamin (mg)
1.1
1.4
1.4
1.4
1.6
1.3
1.4
Riboflavin (mg)
1.1
1.4
1.6

1.4
1.6
1.3
1.4
Niacin (mg)
14
18
17
18
21
17
18
Vitamin B12 (µg)
2.4
2.6
2.8
2.6
2.6
2.1
2.6
Vitamin B6 (mg)
1.2
1.9
2.0
1.9
2
1.6
1.9
Vitamin C (mg)
75
85
120
70
71
58
55
Iron (mg)
18
27
9
30
35
28.5
20

Zinc (mg)
8
11
12
15
17
14
10
Iodine (µg)
95
220
290
150
150
122
250
Copper (µg)
900
1,000
1,300
2,000
2,700
2,200
1,150
Selenium (µg)
55
60
70
65
65
53
30
Use
Prevention of vitamin and mineral deficiencies in pregnant and lactating women.
One tablet/day during pregnancy and lactation.
Prevention and treatment of malnutrition in women before, during and after pregnancy
One sachet/day for prevention. Two sachets/day for treatment.
Prevention and treatment of malnutrition in women before, during and after pregnancy.
One sachet/day for prevention. Two sachets/day for treatment.
Prevention of malnutrition in women during and after pregnancy.
One sachet/day.

UNICEF ACTIONS

UNICEF advocates for policies, strategies and programmes that provide nutrition care and support to pregnant adolescent girls, breastfeeding adolescent mothers and other nutritionally at-risk pregnant and breastfeeding women. This includes supporting counselling and nutrition services for adolescent mothers and other nutritionally at-risk women, including adherence to recommended micronutrient supplementation protocols and the use of BEP supplementation where appropriate. In settings where adolescent pregnancies are prevalent, UNICEF will engage with child protection systems and key community stakeholders, including religious leaders, to identify opportunities to prevent adolescent girls and women from becoming malnourished before and early in pregnancy and while breastfeeding. UNICEF will also create links with social protection systems to provide targeted support to nutritionally vulnerable adolescent girls and women.

Meeting the nutritional needs of pregnant women and adolescent girls living with overweight or obesity: The rapid rise in overweight and obesity among adolescent girls and women, including in LMICs, is consistent with the global transition towards a reliance on energy-dense, low-nutrient foods and sedentary lifestyles.

Counselling women about healthy eating and keeping physically active during pregnancy is recommended to improve women's health and to prevent excessive weight gain before and during pregnancy.70 When aimed at pregnant women affected by overweight and obesity, counselling and SBCC interventions can help ensure that the amount of weight gained during pregnancy is in line with the recommendations of the United States Institute of Medicine. It can also reduce the risk of excessive gestational weight gain, gestational diabetes, caesarean delivery, macrosomia and large-for-gestational-age newborns.92,94

SBCC interventions are also effective in encouraging physical activity during pregnancy.95 Pregnant women who are appropriately counselled on nutritious diets and physical activity are less likely to experience excessive postnatal weight retention and their children are less likely to be affected by obesity in childhood.91-93, 31 This is true for women in both and HIC and LMICs and across a range of contexts.

UNICEF ACTIONS

As mentioned throughout this guidance, UNICEF will advocate for and create an enabling environment to support actions that prevent overweight and obesity in women, in line with UNICEF's programme guidance on preventing overweight and obesity in children and adolescents.8 Such actions include support for policies, including fiscal measures and marketing regulations, that not only create disincentives to promote unhealthy foods and beverages but provide incentives for healthier options. UNICEF recommends that, among countries with a prevalence of overweight in women greater than 30 per cent, significant focus be placed on the prevention and management of overweight and obesity in maternal nutrition programming. UNICEF will also undertake the necessary analyses to design programmes that address the drivers of overweight and obesity in women. Core interventions supported by UNICEF will emphasize overall dietary quality, appropriate weight gain prior to and during pregnancy, and physical activity.

Treating pregnant women and adolescent girls suffering from anaemia and micronutrient deficiencies: Once a woman is diagnosed as anaemic (see Table 4 for haemoglobin cut-offs for assessing anaemia in non-pregnant and pregnant women), the normal course of treatment includes daily supplementation with 120 mg of elemental iron and 400 µg of folic acid until

haemoglobin levels return to normal (11 g/dl or higher) (see Table 3). Ensuring the availability of therapeutic doses as part of ANC services is important to provide timely treatment of anaemia. In the absence of a therapeutic doses, women may be prescribed two of the standard IFA supplements.

UNICEF will also support policies and programmes to ensure that women who are suffering from anaemia receive nutrition services, including timely screening and treatment with recommended micronutrient supplements.

Programmatic priority 5.

Innovations for maternal nutrition

Innovations can offer solutions to a range of programming challenges that impede progress in improving women's nutritional status. Some of these innovations include specialized nutritional products and packaging, alternative delivery modes to improve access to nutrition services, and new procedures for measuring nutritional status and the coverage of interventions.

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Developing new products and interventions could include, for example:

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Assessing whether nutrition commodities are responding to women's needs and identifying new ways to adapt packaging or labelling to facilitate adherence and uptake.

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Working with suppliers to shape global and local markets in LMICs to ensure that low-cost, high-quality maternal nutrition products are available and affordable.

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Improving the delivery of interventions could include, for example:

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Leveraging alternative communication channels (e.g., SMS reminders, social media) to overcome challenges in providing essential information to women on nutritious diets and adherence to supplementation.

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Testing market-based approaches (e.g., sale via pharmacies) to distribute micronutrients or other nutrition services.

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Strengthening the measurement of women's nutrition status could include, for example:

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Investing in low-cost, field-friendly methods to assess the biochemical markers of micronutrient deficiencies and update estimates of micronutrient deficiencies in women and adolescents.

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Conducting local studies to establish context-specific MUAC cut-offs to identify women at risk of undernutrition.121

Investing in innovative ways to improve the availability and quality of routine data on maternal nutrition is also important. Such improvements in monitoring maternal nutrition are essential to bridge data gaps in measuring counselling and care for women, and report on global goals and targets.

Documenting these innovations will be important to share learnings and to close the knowledge gap in maternal nutrition programming. Indeed, addressing the gaps in the operational evidence base and documenting programme experiences are key priorities for UNICEF and can cement UNICEF's reputation as a knowledge leader on maternal nutrition. Planning at the outset of the programme is critical to effectively document programme experiences, in collaboration with implementing partners and research institutions where appropriate.

UNICEF ACTIONS

UNICEF tests innovations for improving women's nutrition during pregnancy and breastfeeding, such as those related to the provision of high-quality nutrition counselling, pregnancy weight gain monitoring, use of MMS and calcium supplements during pregnancy, and the use of BEP dietary supplements for adolescent mothers and nutritionally at-risk women. Globally, UNICEF aims to shape markets to increase access to low-cost, high-quality micronutrient supplements and other commodities, and drive product innovation.

4.

Programming

principles

UNICEF programming for maternal nutrition is aligned with the programme principles outlined in the UNICEF Nutrition Strategy 2020–2030, as described below.

Rights-based

UNICEF programming for maternal nutrition is guided by the Universal Declaration of Human Rights, the United Nations Convention on the Rights of the Child, and the Convention on the Elimination of all Forms of Discrimination Against Women.

Equity-focused

Equity-focused programming is crucial to fulfilling the nutrition rights of all women and adolescent girls, especially the most marginalized and socio-economically deprived adolescent girls and women. UNICEF commits to supporting equitable approaches to ensure adequate diets and care for all adolescent girls and women.

Gender-responsive

UNICEF will help governments secure women's nutrition rights by designing nutrition programmes with women's needs in mind. UNICEF will also support policies and programmes that address underlying inequality and harmful gender roles, norms and dynamics, while strengthening positive norms that support equality, as outlined in the UNICEF Gender Action Plan.

Context-specific

UNICEF will support context-specific nutrition programmes – shaped by an analysis of the nutrition situation for women and girls, and the resources and partnerships available – to respond to the specific needs of women across different regional, national and subnational contexts. Such programmes are increasingly important, as different forms of malnutrition may coexist in the same country.

Evidence-informed

UNICEF will support evidence-based policies, strategies and programmes to scale up nutritious, safe, affordable and sustainable diets, essential nutrition services, and care for women before

and during pregnancy and while breastfeeding. Furthermore, UNICEF will endeavour to generate new evidence to inform nutrition programmes for women, in both development and humanitarian contexts.

Systems-centred

UNICEF commits to work alongside governments and partners to strengthen the capacity of different systems to deliver results for women before and during pregnancy and during the breastfeeding period. UNICEF efforts will focus on five systems – food, health, water and sanitation, education, and social protection – with the greatest potential to improve nutrition outcomes for women. In settings where child marriage and adolescent pregnancies are widespread, UNICEF will explore opportunities to work with child protection systems to adopt protective policies and legislation and shift harmful social norms.

5.
A systems approach to preventing all forms of malnutrition in women

The UNICEF Nutrition Strategy 2020–2030 recognizes the role of five systems – food, health, water and sanitation, education, and social protection – in securing positive nutrition outcomes for women before and during pregnancy and while breastfeeding. A systems approach works to make stakeholders across these systems more accountable for improving maternal nutrition. UNICEF is uniquely positioned to support this approach. Table 9 provides illustrative actions related to UNICEF's engagement with the five systems.

Table 9. Illustrative actions related to UNICEF's engagement with five systems

Systems	Illustrative actions
Food system	• Policies, dietary guidelines and standards to improve access to nutritious, safe, affordable and sustainable foods • Legislation for staple food fortification • Financial incentives, taxes and financial disincentives • Front-of-pack labelling to facilitate healthy foods choices and discourage consumption of unhealthy foods
Health system	• Policies to strengthen alignment and integration of maternal nutrition interventions in health systems

- Provision of high-quality and cost-effective micronutrient supplements, deworming tablets and BEP supplements for undernourished women
- Compulsory nutrition training for health workers (pre-service and in-service)
- Financing of maternal nutrition commodities in national medicine formulary
- Integration of maternal nutrition indicators in information systems that collect routine data
- SBCC and counselling on nutritious diets, dietary supplements, physical activity and rest, breastfeeding and hygiene

Water and sanitation system

- Policies, strategies and programmes to ensure water and sanitation systems provide safe and palatable drinking water and sanitation facilities in health facilities and communities
- Integration of nutrition counselling and SBCC for women into water and sanitation platforms
- SBCC to promote hygienic food handling and handwashing with soap

Education system

- Policies, strategies and programmes to strengthen nutrition curricula to improve knowledge and skills about food, healthy diets, good nutrition, and physical activity among children and adolescents
- Capacity development and training of teachers and school managers to deliver nutrition education and promote good nutrition
- Provision of IFA and deworming to adolescent girls
- Communication campaigns to promote physical activity and active living

Social protection system

- Policies, strategies and programmes (e.g., provision of cash transfers, food and specialized foods, vouchers, subsidies, etc.) aimed at improving the diets and nutrition of pregnant women and adolescent girls in settings with high prevalence of maternal underweight, LBW and stunting
- Inclusion of free and universal health insurance and benefits for pregnant women and breastfeeding mothers
- Family-friendly policies and maternity protection benefits

6.

Programming,
partnerships,
and
coordination
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Programming approaches
Programming approaches to support women's nutrition.
Analyse the nutrition situation of women

- Assess the nutritional status of women and maternal nutrition intervention coverage using household surveys, administrative data and available studies to determine the status, trends and epidemiological profile of women at risk for underweight, overweight and/or micronutrient deficiencies, including information available on dietary intakes.
- Assess the adequacy of nutrition policies, strategies, legislation and programmes to determine how women's nutrition is supported.
- Analyse the social determinants and gender-related drivers of malnutrition in women, including barriers limiting women's access and use of nutrition services and practices.

Advocate for women's right to nutritious diets, services and practices

- Advocate for and support policies, strategies and programmes to protect and fulfil the nutrition rights of women before and during pregnancy and while breastfeeding, including the rights of nutritionally at-risk women (e.g. family-friendly policies, maternity protection).
- Advocate for the inclusion of maternal nutrition services in the benefit package for universal health coverage schemes.
- Advocate for policies, legislation and interventions to prevent child marriage and adolescent pregnancies.
- Advocate for strengthening institutional systems to ensure accountability, transparency and responsiveness to women as rights-holders.

Design evidence-based policies and strategies to inform maternal nutrition programmes

- Align interventions and approaches with the global, regional and local evidence base, with attention to gender issues.
- Develop and/or update the minimum intervention package for women.
- Develop an implementation plan with a vision, goals, milestones, roles and responsibilities for scaling up maternal nutrition interventions aligned with national priorities.

Support the scale-up of maternal nutrition strategies and programmes

-

Provide technical support to implement proof-of-concept nutrition programmes to improve women's diets, services and practices.

- Undertake analyses of delivery platforms and identify ways to make them gender-responsive (e.g., bring maternal nutrition interventions closer to women by task-shifting and identifying roles for community workers, mother support groups and other peer support groups to promote and deliver nutrition interventions).
- Strengthen capacities to advocate for, prioritize and allocate domestic finances for the implementation of maternal nutrition programmes at scale.
- Strengthen the integration of recommended maternal nutrition interventions in existing platforms and systems (such as health, water and sanitation, education, and social protection).
- Advocate for social protection programmes to include maternal nutrition objectives and indicators.

Engage adolescent girls, women, and communities to understand and respond to their needs

- Engage with women to understand their needs and challenges; and engage key influencers and decision-makers to understand their concerns.
- Support formative research to learn more about current knowledge, attitudes and practices to inform the design and implementation of SBCC strategies.
- Develop an SBCC strategy and tools that include individual counselling, community mobilization and mass communication focused on improving women's nutrition.
- Support community action to change norms and practices.

Strengthen capacities for maternal nutrition programming

- Analyse the capacities of UNICEF staff, government, health professionals, educators and other relevant service providers, including implementing partners, to implement maternal nutrition programming.
- Train and supervise health and community workers to deliver maternal nutrition interventions. Such training should be gender-responsive to help health workers effectively deliver nutrition programmes for women.
- Develop and update maternal nutrition pre-service and in-service curricula, supervision tools, and on-the-job training modules and ensure their integration into ANC training for physicians, midwives, nurses, other health professionals, and community workers.

Strengthen national procurement and supply chains for maternal nutrition programming

-

Support government to procure essential nutrition commodities, including MMS, calcium, BEP and Sq-LNS, and anthropometric equipment.

- Undertake market analyses to identify local suppliers of high-quality nutrition commodities.
- Build capacities to support accurate and timely forecasting of essential maternal nutrition commodities.
- Conduct analyses to address supply chain bottlenecks, strengthen supply chain integration and improve end-user monitoring of maternal nutrition commodities.

Mobilize financing for maternal nutrition

- Advocate to include maternal nutrition commodities (e.g., IFA, MMS, calcium, deworming prophylaxis) on the essential medicines list, and anthropometric equipment (e.g., scales, MUAC tapes) in essential equipment lists. Table 5 lists the nutritional commodities for pregnant women and breastfeeding mothers available through UNICEF Supply Division.
- Support public expenditure reviews and routine tracking of financial allocations of current domestic financing and official development assistance for women's nutrition and analyse

the costs of scaling up maternal nutrition programmes.

- Advocate for an increase in domestic resources for maternal nutrition interventions.

Invest in data, monitoring and evaluation for maternal nutrition

- Develop a monitoring plan and tools to track programme progress.
- Support population-based surveys to assess women's exposure to and use of nutrition interventions.
- Integrate monitoring of women's nutrition indicators in routine and administrative information systems.

Advance knowledge, learning and innovation on maternal nutrition

- Develop a knowledge generation plan for maternal nutrition to inform policies and programme improvement.
- Document programme lessons learned in field reports and peer reviewed journals to close the knowledge gap in maternal nutrition programming.
- Share and disseminate learning from periodic evaluations and implementation research conducted in-country.

Humanitarian action

Maternal malnutrition, specifically underweight and micronutrient deficiencies, is a significant public health issue in emergencies and humanitarian crises. Pregnant women and breastfeeding mothers, including adolescent girls, are especially vulnerable to malnutrition due to their increased nutritional requirements; and the consequences of nutritional deprivation during this time are serious, for both women and their children. Disruptions in livelihoods, food supplies and crops, and disease outbreaks may limit the foods women can access and consume. Additionally, physical and mental stresses associated with humanitarian crises can suppress appetite, cause nutrient loss, and increase nutritional needs in women. In settings where pregnant women and breastfeeding mothers are already facing challenges in meeting their nutritional requirements, humanitarian crisis can exacerbate existing malnutrition. Emergencies may also exacerbate discriminatory gender and social inequalities around food, with adverse impacts on the nutritional status of women.

UNICEF is committed to meeting the needs of populations affected by humanitarian crises, especially nutritionally vulnerable groups, such as pregnant women and breastfeeding mothers. The UNICEF Core Commitments for Children in Humanitarian Action form UNICEF's policy and framework in emergencies (Table 10). The updated Core Commitments for Children emphasize key actions to be supported by UNICEF during emergencies, with a focus on prevention, followed by early detection and treatment of malnutrition in women. This commitment is aligned with recent organizational commitments made to ensure gender equality in humanitarian settings.136

UNICEF actions in humanitarian settings are also guided by the UNICEF-World Food Programme (WFP) partnership framework, which outlines the accountabilities of each partner to support the delivery of maternal and child services in development and humanitarian settings.137 Within this partnership framework, UNICEF is accountable for supporting national governments in implementing prevention services as part of national systems to improve maternal nutrition, ensure gestational weight gain, and prevent LBW. UNICEF is also responsible for supporting national governments to strengthen efforts for the early detection of maternal wasting, with timely referral to facility- and community- based treatment services. Together with WFP, UNICEF shares accountabilities for supporting national governments to develop and implement nutrition-sensitive social protection policies, strategies and programmes, including conditional or unconditional cash transfers to improve women's access to nutritious diets, health services and counselling to prevent wasting.

Table 10. UNICEF core commitments for the prevention of malnutrition in humanitarian settings.5

Core commitments	Benchmarks
Prevention of undernutrition, micronutrient deficiencies and anaemia in pregnant women and breastfeeding mothers.	Pregnant women and breastfeeding mothers' benefit from diets, services and practices that prevent anaemia, micronutrient deficiencies and undernutrition.
	Pregnant women and breastfeeding mothers, with special attention to pregnant adolescent girls and other nutritionally at-risk mothers, are protected from undernutrition, micronutrient deficiencies and anaemia through a package of interventions that includes: IFA/MMS

(recommended), deworming prophylaxis, weight monitoring, nutrition counselling, and nutrition support through BEP dietary supplementation as appropriate to context.

UNICEF ACTIONS

In emergencies, UNICEF will support a minimum package of preventive interventions for all pregnant women and breastfeeding mothers, including fortified staple foods, counselling on nutritious diets, MMS or IFA supplements, and deworming prophylaxis. In settings where there is food insecurity and poor access to diverse and quality diets, UNICEF will also support services to prevent maternal wasting as part of national systems. In these situations, UNICEF will provide targeted preventive nutritional supplements (i.e., BEP) to pregnant women and breastfeeding mothers who have been screened and referred for BEP. UNICEF will also create opportunities to provide food vouchers and cash-based interventions for women and link these with nutrition counselling. Given the paucity of programmatic evidence, there is an urgent need to develop operational experiences in providing preventive services to pregnant women and breastfeeding mothers in humanitarian emergencies.

Internal collaboration and coordination

As an organization working across multiple sectors, UNICEF is well-placed to influence and mobilize a range of sectors to deliver nutrition results for women. Within UNICEF, this is achieved by collaborating with other programmes, including health, education, water and sanitation, adolescent development and participation, child protection and social policy. Opportunities also exist to leverage cross-sectoral departments and programmes, such as communications for development, gender, data and analytics, supply, and public and private partnerships to improve the design and impact of maternal nutrition programmes.

Within UNICEF, nutrition staff will partner with other UNICEF teams to achieve the following results:

Health

- Strengthen counselling on nutritious diets and weight gain, weight gain monitoring, physical activity, and supplementation with IFA/MMS and/or LNS/BEP.
- Strengthen health worker capacities on nutrition.
- Strengthen systems to improve delivery and coverage of essential nutrition services during ANC and postnatal care.

Education

- Integrate the delivery of IFA for adolescent girls into education platforms.
- Integrate nutrition education into school curricula.

Water and sanitation

- Integrate nutrition counselling and SBCC into water and sanitation systems.
- Increase access to free, safe and palatable drinking water.

•
Improve access to sanitation facilities.
Social policy
•
Advocate to increase fiscal space for maternal nutrition interventions.
•
Analyse public expenditures and budget tracking.
•
Design nutrition-sensitive social protection approaches (cash, vouchers, insurance, maternity benefits).
•
Create soft-conditionalities linking nutrition counselling with social protection programmes.
Communication for development
•
Design SBCC strategies and interventions, including using social media and other channels to promote healthy diets and physical activity for women before, during and after pregnancy.
Urban
•
Design urban programming approaches to provide essential nutrition services closer to women's workplaces (e.g., factories).
Communications
•
Develop communications strategies (e.g., campaigns, media strategy) to influence key audiences, such as governments, the private sector, individuals.
Gender
•
Analyse gender barriers that affect diets, behaviours, food distribution, consumption, physical activity and use of services among women.
•
Support development of gender-responsive policies.
Supply
•
Align programme recommendations and products procured by UNICEF.
•
Establish standards and technical specifications for maternal nutrition commodities.
•
Procure high quality, cost-effective nutrition commodities for preventing and treating malnutrition in women.
Public and private partnerships
•
Strengthen partnerships and seek financial resources to support implementation of maternal nutrition activities.
Data and analytics
•

Support data collection and develop guidance on relevant indicators and surveys.

Strategic partnerships to improve women's nutrition
Achieving nutrition outcomes for women will require strategic engagement with a broad group of partners. To this end, UNICEF will collaborate with public and private institutions, civil society, academia, United Nations agencies, donors, non-governmental organizations, and professional organizations to advance nutrition programmes for women. UNICEF will use its convening power to identify and create strategic opportunities at global, regional and country levels to advocate for a stronger enabling environment to support women's nutrition and to activate national food, health, education, water and sanitation, and social protection systems for women's nutrition.
Working together with human rights, gender and women's groups, UNICEF will advocate for women's rights to nutrition. UNICEF will use its influence to engage and convene thought leaders and researchers to bring the latest science on women's nutrition to bear on programmes. As a United Nations agency, UNICEF will collaborate with WHO to develop policies and normative guidance. As part of the maternal nutrition collaborative comprising lead partners interested in advancing women's nutrition, UNICEF will seek to bring coherence to programmatic approaches for women's nutrition.
Engagement on and with the private sector
UNICEF recognizes the special role of the private sector in producing nutritious, safe, affordable and sustainable foods; and high-quality, low-cost vitamin and mineral supplements and specialized foods, to meet the nutritional needs of women before and during pregnancy and while breastfeeding. UNICEF also recognizes the role that private sector can play in supporting the delivery of nutrition services through private health care providers and pharmacies, and the role that private sector employers can play in supporting women with nutrition care before and during pregnancy and while breastfeeding.
UNICEF encourages engagement on/with the private sector given its role in food production, distribution and retail; such engagement should be in the context of setting policies and standards with government to promote the nutrition and health goals of women. UNICEF engagement may also include advocacy with government to establish social and health insurance to cover ANC, family-friendly policies and maternity protection. Such engagement may also include assessment and monitoring of markets, regulations and quality-standards, with the aim of expanding the supplier base for high-quality nutritional products for women and facilitating their availability for programmes. UNICEF collaborates with the private sector to support the development of food and nutritional supplements for use by women in LMICs.

7.
Monitoring and
reporting

UNICEF has identified a set of standard indicators to monitor and report on the results in the UNICEF Nutrition Strategy 2020–2030 (Table 11). These results are reported via UNICEF's institutional monitoring systems (Country Strategic Indicators), NutriDash (UNICEF's global

programme monitoring system) and population-based surveys (Demographic and Health Surveys, Multiple Indicator Cluster Surveys).

Table 11. Illustrative matrix of indicators to measure the progress of programmes to prevent all forms of malnutrition in women

Level of indicator	Indicator	Sources
Impact		
Underweight:	• Proportion of non-pregnant women aged 15–49 years with low BMI (<18.5 kg/m2)	Population-based surveys
Overweight:	• Proportion (%) of non-pregnant women aged 18–49 years with a BMI ≥25 kg/m2	Population-based surveys
Obesity:	• Proportion (%) of non-pregnant women aged 18–49 years with a BMI ≥30 kg/m2	Population-based surveys
Short stature:	• Proportion of non-pregnant women aged 15–49 years with short stature (<145 cm)	Population-based surveys
Anaemia (non-pregnant women):	• Prevalence (%) of haemoglobin <12 g/dL in non-pregnant women	Population-based surveys
Anaemia (pregnant women):	Prevalence (%) of haemoglobin <11 g/dL in pregnant women	Population-based surveys
Low birthweight:	• Prevalence (%) of infants born with LBW (<2.5 kg)	Population-based surveys and administrative data systems
Iodine status:	• Median urinary iodine concentration in pregnant women indicative of iodine sufficiency (150-249 ug/L)	Nutrition or micronutrient surveys.
Gestational weight gain:	• Proportion (%) of women who gain adequate weight during their pregnancy (as per national guidelines)	

Administrative data systems, population-based surveys
Outcome and coverage
IFA or MMS supplementation:
•
% of mothers who received IFA or MMS for 90+ days during ANC and postnatal care
Population-based surveys and Administrative data systems
•
% of pregnant women who benefit from gender-responsive programmes for the prevention of anaemia*
SDG+ database
Minimum dietary diversity for women (MDD-W):
•
Proportion of women aged 15–14 years who have consumed foods from at least five out of 10 defined food groups the previous day or night
Population-based surveys, nutrition/ micronutrient surveys
Nutrition counselling during pregnancy:
•
Proportion (%) of women aged 15–49 years who attended ANC for the most recent live birth in the five years preceding that received counselling about what foods to eat during pregnancy
Population-based surveys
Nutrition counselling at ANC and postnatal care:
•
Proportion (%) of women who were provided counselling on different topics (diet, hygiene, rest, exercise, breastfeeding, etc.) at ANC and postnatal care
Population-based surveys
Large-scale food fortification:
•
% of population consuming at least one cereal fortified with IFA*
•
% of households with adequately iodized salt
Population-based surveys
* UNICEF Strategic Plan 2022–2025 indicator

Outcome and coverage (con’t.)
Antenatal care (at least eight contacts):
•
% of women aged 15–49 years attended by any provider eight times during pregnancy (ANC8)
Administrative data systems and population-based surveys
Screening of maternal risks:
•
% of women referred for various risk factors (short stature, overweight, etc.) for specialized care
Administrative data systems
Anaemia screening and treatment:
•

% of women who received a haemoglobin test in their pregnancy
•
% of women who were checked for clinical signs of anaemia in their pregnancy
•
% of pregnant women diagnosed with anaemia who were treated
Administrative data systems
Anthropometric assessment:
•
% of pregnant women who were weighed at each ANC visit
•
% of pregnant women who were measured in height at first ANC visit
Administrative data systems
Calcium supplementation:
•
% of women who received the recommended number of calcium supplements in their pregnancy
Administrative data systems
BEP or Sq-LNS supplementation:
•
% of women who received BEP or Sq-LNS in their pregnancy (context-specific)
Administrative data systems
Receipt of food or cash assistance during pregnancy:
•
% of women aged 15–49 years who gave birth in the preceding five years that received food or cash assistance while pregnant for their most recent birth
Population-based surveys
Output
Enabling environment:
•
Policies, strategies and guidance include maternal nutrition interventions that are aligned with global guidance and recommendations
•
Maternity protection laws/regulation in place
•
Maternal nutrition interventions are included in costed plans
•
Budgets are allocated and dispersed for maternal nutrition commodities
•
Maternal nutrition commodities are included in the national essential medicines list
•
Maternal nutrition commodities are provided free of charge through the health system
•
Maternal nutrition is included in the pre-service and in-service training curricula for health workers

•
Job aids and counselling materials are developed to support the provision of maternal nutrition interventions
•
Nutrition counselling is integrated as part of integrated maternal and infant counselling
•
National policy document, strategy or plan of action allows for the use of MMS
Country office reports
Maternal Nutrition 51
Output (con't.)
Frontline capacities/training and stock availability:
•
% of ANC providers and frontline workers trained on maternal nutrition services (maternal nutrition assessment, maternal nutrition counselling, micronutrient supplementation, etc.)
•
% of health facilities with no IFA or MMS stock-outs lasting more than.xx] week in the past.xx] months (defined nationally)
•
% of facilities with available anthropometric measurement instruments (weighing scale, height scale, MUAC tapes)
•
% of facilities with available job aids, counselling cards, and other materials needed for maternal nutrition
•
% of facilities practising delayed cord clamping at delivery
Country office reports
Population-based surveys and administrative data systems
Adolescent girls and women benefit from gender-responsive diets, services, and practices for the prevention of anaemia and poor nutrition, in development and humanitarian contexts*
•
Number of countries implementing integrated anaemia prevention and nutrition counselling in their pregnancy care programmes for women*
Country office reports
* UNICEF Strategic Plan 2022–2025 indicator
52 UNICEF Programming Guidance
Annexes
Maternal Nutrition 53
1. Resource documents
UNICEF resource documents
Strategies and guidance documents
•
UNICEF Nutrition Strategy 2020–2030: Nutrition, for Every Child
•
Programming Guidance: Nutrition in Middle Childhood and Adolescence

- Food Systems for Children: UNICEF in Action for Food Systems transformation
- Counselling to improve maternal nutrition: Considerations for programming with quality, equity and scale
- No Time to Waste: Improving diets, services and practices for the prevention, early detection and treatment of wasting in early childhood
- Core Commitments for Children in Humanitarian Action
- UNICEF, WFP, Global Nutrition Cluster, GTAM. Protecting Maternal Diets and Nutrition Services and Practices in the Context of COVID-19
- Interim Country-level Decision-making Guidance for Introducing Multiple Micronutrient Supplementation for Pregnant Women
- Programming guidance: Prevention of overweight and obesity in children and adolescents.
- Gender Action Plan 2022-2025
- Joint statement by the World Health Organization, the World Food Programme and the United Nations Children's Fund. Preventing and controlling micronutrient deficiencies in populations affected by an emergency
- Global Social Protection Programme Framework
- Family-Friendly Policies. A Policy Brief
- Technical Bulletin on Commodities to Support Nutrition Care for Pregnant Women
- Supply Toolkit for Multiple Micronutrient Supplements
- Supply Division Catalogue

WHO policies and guidelines

- Comprehensive Implementation Plan on Maternal, Infant, and Young Child Nutrition
- Essential nutrition actions: mainstreaming nutrition through the life-course
- Preconception Care Policy Brief
- Guideline: Recommendations on Antenatal Care for a Positive Pregnancy
-

Guideline: Periconceptual daily folic acid supplementation
•
Guideline: Daily iron supplementation in adult women and adolescent girls
•
Guideline: Intermittent iron and folic acid supplementation in menstruating women
•
Guideline: implementing effective actions for improving adolescent nutrition

•
Preconception care: Maximizing the gains for maternal and child health. A policy brief
•
Guideline: Calcium supplementation during pregnancy for prevention of pre-eclampsia and its complications
•
Guideline: Multiple micronutrient supplements during pregnancy
•
Fortification of wheat and maize flours
•
Preventive chemotherapy to control soil-transmitted helminth infections in at-risk population groups
•
Optimizing Health Worker Roles to Improve Access to Key Maternal and Newborn Health Interventions Through Task Shifting
•
Indicators for the Global Monitoring Framework on Maternal, Infant and Young Child Nutrition
Other resource documents
•
Every Woman, Every Child. Indicator and Monitoring Framework for the Global Strategy for Women's, Children's and Adolescent's Health (2016-2030)
•
Emergency Nutrition Network. Maternal Nutrition in Emergencies
•
The SPHERE Handbook
•
United States Institute of Medicine and National Research Council. Weight Gain During Pregnancy: Re-examining the Guidelines
•
International Labour Standards on Maternity Protection
•
Food and Agriculture Organization of the United Nations. Nutrition and Social Protection
•
Food and Agriculture Organization of the United Nations. Minimum dietary diversity for women

2. WHO recommendations for preconception, pregnancy and postnatal care

WHO recommendations for preconception nutrition care[74]

Nutrition interventions

Context

1. Information, education and counselling on healthy diets

- Educate all women on the importance of consuming a health balanced diet, including foods with IFA.
- Counsel all women to maintain a healthy weight (BMI between 18.5 and 24.5 kg/m2).
- Counsel all women about the specific risk associated with underweight, overweight and obesity to future pregnancies.

Recommended for all women of reproductive age, including adolescent girls

2. Food fortification of staple foods (wheat and maize flour, rice, salt, condiments)

- Promote the consumption fortified food products to improve micronutrient status and reduce vitamin and mineral deficiencies.

Recommended for all women of reproductive age, including adolescent girls

3. Promote exercise/physical activity

- Counsel to engage in moderate physical activity.

Recommended for all women of reproductive age, including adolescent girls

4. Supplementation with IFA

- Provide daily iron supplementation (30-60 mg) to menstruating adult women and adolescent girls, for the prevention of anaemia and iron deficiency.
- Provide intermittent (weekly) supplements to menstruating adult women and adolescent girls for the prevention of anaemia and iron deficiency.
- Encourage all women to incorporate iron-rich foods into their diets, such as red meat, poultry, and fish.

Recommended for all women of reproductive age, including adolescent girls

For women living in settings where anaemia prevalence is ≥40%

For women living in settings where anaemia prevalence is 20–39.9%

5. Screening for anaemia and treatment

- Collect blood samples to screen for anaemia.

Recommended for all women of reproductive age, including adolescent girls, living in settings where anaemia prevalence is ≥40%

6. Monitoring nutritional status

- Screen all women for any nutritional deficiencies or disorders.
-

Provide dietary counselling to all women to improve the nutritional status of women before pregnancy.
Recommended for nutritionally at-risk women and adolescent girls
7. Supplementing energy- and nutrient-dense food
•
Supplement undernourished women's diets with protein and/or energy supplements (such as sq-LNS, fortified blended foods, ready-to-use supplementary food)
Recommended for nutritionally at-risk women and adolescent girls
8. Screening, counselling, and management of diabetes mellitus
•
Support women with diabetes to maximize diabetes control by maintaining a healthy weight before pregnancy
•
Encourage blood glucose self-monitoring using HbA1C to achieve a target of <7% (pre-meal blood glucose level of between 4.4-6.1 mmol/L and two hours after meals <8/6 mmol/L)
•
Prescribe insulin preconceptionally to achieve target levels of blood glucose.
Recommended for nutritionally at-risk women and adolescent girls
Source: World Health Organization. (2013). Preconception care: Maximizing the gains for maternal and child health. A policy brief.
56 UNICEF Programming Guidance
WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience.70
Nutrition intervention
Recommendation
Context
Dietary interventions and physical activity
Improve the quality of the diet
Counselling about healthy eating and keeping physically active during pregnancy is recommended for pregnant women to stay healthy and to prevent excessive weight gain during pregnancy.
Recommended for all pregnant women and adolescent girls
Nutrition education on increasing daily energy and protein intake is recommended for pregnant women to reduce the risk of LBW neonates.
Recommended for pregnant women and adolescent girls in undernourished populations (where the prevalence of underweight in non-pregnant women – defined as a BMI <18.5 kg/m2 – is ≥20 per cent)
Lowering daily caffeine intake during is recommended to reduce the risk of pregnancy loss and LBW neonates.
Recommended for pregnant women and adolescent girls in context-specific settings, with high daily caffeine intake (more than 300 mg per day)
Keeping physically active
Counselling about exercise to prevent excessive weight gain in pregnancy.
Recommended for pregnant women and adolescent girls in context-specific settings with a high prevalence of overweight and obesity.

Increase the intake of target nutrients
BEP supplements
BEP dietary supplementation is recommended for pregnant women to reduce the risk of stillbirths and SGA neonates.
Recommended for all pregnant women and adolescent girls in undernourished populations (where the prevalence of underweight in non-pregnant women is ≥20 per cent).
IFA acid supplements
Daily oral IFA supplementation is recommended for pregnant women to prevent maternal anaemia, puerperal sepsis, LBW, and preterm birth.
Supplement containing 30 mg of elemental iron and 400 µg (0.4 mg) of folic acid.
Supplement containing 60 mg of elemental iron and 400 µg (0.4 mg) of folic acid.
Recommended for all pregnant women and adolescent girls:
Where the prevalence of anaemia is 20–39.9 per cent
Where the prevalence of anaemia is ≥40 per cent
Daily antenatal multiple micronutrient supplements that include iron and folic acid are recommended
Recommended for all pregnant women where MMS programmes are being considered in the context of implementation research
Intermittent (weekly) oral IFA supplementation with 120 mg of elemental iron and 2,800 µg (2.8 mg) of folic acid to improve maternal and neonatal outcomes if daily iron is not acceptable due to side-effects.
Recommended for all pregnant women and adolescent girls in populations with an anaemia prevalence among pregnant women of less than 20 per cent.
Calcium supplements
Daily calcium supplementation (1.5 g.-2.0 g. oral elemental calcium) to reduce the risk of pre-eclampsia.
Recommended for all pregnant women and adolescent girls in populations with low dietary intake
Maternal Nutrition 57
Vitamin A supplements
Daily vitamin A supplementation is recommended for pregnant women (up to 10,000 IU) or a weekly dose (up to 25000 IU).72
Recommended for pregnant women and adolescent girls in areas where vitamin A deficiency is a severe public health problem (defined as ≥5 per cent or more of women in a population have a history of night blindness in their most recent pregnancy in the previous 3–5 years that ended in a live birth, or if ≥20 per cent of pregnant women have a serum retinol level < 0.70 µmol/L)
Zinc supplements
Zinc supplementation for pregnant women
Recommended for pregnant women and adolescent girls in context-specific settings where rigorous research is being conducted
Sources: World Health Organization. (2016). WHO recommendations on antenatal care for a positive pregnancy experience. WHO: Geneva; World Health Organization. (2020). WHO Antenatal Care Recommendations for a Positive Pregnancy Experience. Nutritional Interventions Update: Multiple Micronutrient Supplements during Pregnancy. WHO: Geneva;

World Health Organization. (2018). WHO recommendation: Calcium supplementation during pregnancy for the prevention of pre-eclampsia and its complications. WHO: Geneva.
WHO recommendations for postnatal care26
WHO nutrition recommendations
Context
Counselling
Women should be counselled on healthy diets, physical activity, and maintaining healthy postnatal weight; provided with support for exclusive breastfeeding at each postnatal contact and progress assessed at each postnatal contact; and provided with hygiene counselling, especially handwashing.
Recommended for all women as part of postnatal care.
IFA or MMS
IFA supplementation should continue using the pregnancy dosage for three months
Where MMS are provided during pregnancy, their use may be continued postnatally.
Recommended for all women as part of postnatal care where the prevalence of anaemia in pregnant women is ≥40 per cent.129
Deworming
Preventive chemotherapy using annual or biannual single-dose albendazole (400 mg) or mebendazole (500 mg).
Recommended for all non-pregnant adolescent girls and women of reproductive age where the baseline prevalence of any soil-transmitted helminth infection is ≥20 per cent among adolescent girls and women of reproductive age.
Postnatal contacts
If birth is in a health facility, mothers and newborns should receive postnatal care in the facility for at least 24 hours after birth.
If birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth.
At least three additional postnatal contacts are recommended for all mothers and newborns on day three (48–72 hours), between days 7–14 after birth, and six weeks after birth.
Recommended for all women as part of postnatal care.
Home visits
In the first week after birth, home visits are recommended for the care of the mother and newborn.
Recommended for all women as part of postnatal care.
Source: World Health Organization (2013). WHO recommendations on postnatal care of the mother and newborn.
58 UNICEF Programming Guidance
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