

Multiple Micronutrient Supplementation: Frequently Asked Questions



The Need

What is the role of good nutrition during pregnancy?

Good nutrition during pregnancy is critical to good health outcomes for both the mother and her baby. Strong evidence shows that poor nutrition—especially during pregnancy, a period when women have increased nutritional needs—has serious adverse effects on birth and maternal health outcomes, as well as the long-term development of the child. Children born to malnourished women are more likely to be born too small, too soon, or stillborn. Those who survive infancy are more likely to experience physical and cognitive setbacks that can keep them from reaching their full potential as adults.¹

Why are micronutrients important for pregnant women in particular?

Many vitamins and minerals (collectively referred to as micronutrients)—including vitamins A, B₆, B₉ (folic acid), B₁₂, C, D, E, and the minerals iron, zinc, iodine, copper, and selenium—are essential for a healthy pregnancy and fetal development. During pregnancy, the required daily intake of these micronutrients increases by as much as 50%.² Additionally:

- Women need 2.5 times more iron than men on average, and this requirement increases further during pregnancy.
- During pregnancy, women need higher levels of vitamin A to support healthy fetal growth and development.
- Iodine is essential in the first 16 weeks of pregnancy; without it, miscarriages and stillbirths are more common, and brain development and cognition are compromised.

An alarmingly high percentage of women of reproductive age in low- and middle-income countries (LMICs) are already deficient in several key micronutrients.³ That is why nutrition interventions to supplement micronutrient intake are a critical component of antenatal care (ANC).

What is MMS?

Multiple micronutrient supplementation (MMS) provides the vitamins and minerals that are necessary for a healthy pregnancy. More than 20 years of research shows that MMS is safe, cost-effective, affordable, and more effective than iron and folic acid (IFA) supplementation, the current standard of care in maternal malnutrition.¹ Through more than 20 clinical trials, MMS consistently improved maternal nutrition and reduced the risk of adverse birth outcomes including preterm birth, stillbirth, low birth weight, and small for gestational age, especially in anemic and underweight women.⁴

What is UNIMMAP MMS?

MMS refers to the internationally recognized formula used in the United Nations International Multiple Micronutrient Antenatal Preparation (UNIMMAP). The UNIMMAP MMS formulation (hereinafter referred to as MMS) was developed in 1999 through a collaboration between the World Health Organization (WHO), the United Nations University, and UNICEF. In 2021, it was included in the WHO Essential Medicine List, recognizing it as among the most effective and safe interventions when used as an antenatal supplement for pregnant women.⁵

How many micronutrients does MMS contain, and how are the amounts of each determined?

The recommended MMS formulation contains 15 essential vitamins and minerals for pregnant women and was carefully developed based on multiple criteria to ensure safety and help meet the increased micronutrient demands of pregnancy. Across all 15 ingredients, none exceed the recommended daily intake levels for the target age groups.⁶ (Table 1)

What is the amount of iron contained in IFA in comparison to MMS?

MMS contains 30 milligrams (mg) of iron. WHO antenatal care guidelines recommend iron supplementation between 30-60 mg/day. A recent analysis confirms that MMS with 30 mg of iron is comparable to IFA with 60 mg of iron in protection against anemia during pregnancy.⁷

UNIMMAP MMS composition

Vitamin A	800 µg
Vitamin D	200 IU
Vitamin E	10 mg
Vitamin C	70 mg
Thiamin	1.4 mg
Riboflavin	1.4 mg
Niacin	18 mg
Vitamin B ₆	1.9 mg
Folic Acid	400 µg
Vitamin B ₁₂	2.6 µg
Copper	2 mg
Iodine	150 µg
Iron	30 mg
Selenium	65 µg
Zinc	15 mg

What format does MMS come in, and how should it be taken?

MMS for pregnant women is produced as tablets. Ideally, one MMS tablet would be taken each day for 180 days during pregnancy.

The Benefits

Who should take MMS, and when?

Pregnant women should begin taking MMS as soon as possible after conception and continue through pregnancy, ideally for 180 days, to reduce the risk of preterm, small for gestational age, low birthweight, and infant mortality.^{1,3} MMS is most effective in contexts where dietary quality is poor, micronutrient deficiencies are common, and anemia and low birthweight are public health problems. In settings where MMS are provided during pregnancy, women can continue taking them during the postnatal period.⁸

What are the benefits of transitioning to MMS from IFA?

More than 20 years of research provides clear evidence that MMS is more effective than IFA supplementation in preventing adverse birth outcomes, particularly for women who are anemic or underweight.^{1,3} MMS is also highly cost effective, contributing to better health outcomes and human capital gains in the long-term. For example, scaling the use of MMS up to 90% coverage is projected to result in 5 million additional school years, leading to an estimated annual increase of approximately \$18 billion in lifetime income.⁹

What are the long-term benefits of MMS for children?

Emerging evidence shows that MMS has long-term benefits for cognitive development in children compared to IFA supplementation.¹⁰

Are there any potential risks in administering daily MMS?

Evidence shows the risk of administering daily MMS is low, as it is very unlikely to cause an excess of micronutrients in pregnant women, even if they consume a nutritionally adequate diet.¹¹

Implementation

What is the current guidance around MMS?

WHO guidance supports context-specific implementation of MMS, including in pregnant women affected by an emergency and/or experiencing active tuberculosis, and in the context of rigorous research as part of antenatal care for pregnant women.^{12,13,14} In 2021, the formulation was included in WHO's Essential Medicines List, recognizing it as among the most efficacious, safe, and cost-effective maternal nutrition interventions.

What are the steps or phases to introduce MMS at the country level?

MMS implementation generally follows a [three-phased approach](#):

- **Exploration:** Building an enabling environment for MMS through advocacy and landscape analysis.
- **Initial Implementation:** Designing and testing implementation strategies through research and ensuring adequate supply.
- **Scale-up:** Robust planning and integration into existing antenatal care and primary health care services to expand use to the sub-national or national level.

What type of questions should be answered by implementation research?

Implementation research can help groups and countries better understand how to embed MMS into antenatal care. Assessing acceptability, feasibility, sustainability, and cost-effectiveness of MMS can help overcome existing barriers to adherence, optimize policies, and improve implementation processes.

How does the Healthy Mothers Healthy Babies Consortium (HMHB) support implementation and scaling of MMS?

HMHB, hosted by the Micronutrient Forum, is a collective of more than 90 organizations and individuals dedicated to improving maternal nutrition by accelerating the availability and effective use of MMS in LMICs. To learn more about how HMHB supports collective action, advocacy, and information sharing on MMS activities or to connect directly with stakeholders who have experience and are active in the field of MMS, please contact: HMHB@micronutrientforum.org.

Visit the HMHB [website](#) and [Knowledge Hub](#) for existing knowledge, guidance and tools, and other useful resources related to women's nutrition, maternal nutrition, and evidence-based interventions targeting women.

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