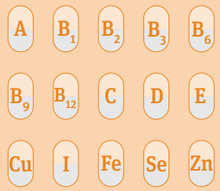
Update on MMS Evidence

Key messages

Two-thirds of non-pregnant women of reproductive age worldwide have micronutrient deficiencies, and for pregnant women in low- and middle-income countries (LMIC) the prevalence is likely to be higher, resulting in adverse pregnancy and birth outcomes.

Recent evidence shows **consistent risk reductions** for low birth weight (LBW), small for gestational age (SGA), and other adverse birth outcomes, over and above the benefits provided by iron and folic acid supplements (IFA) alone.

MMS is safe meaning that there is no evidence of harm or hypervitaminosis-related adverse effects (even when paired with balanced diets, which are rarely available or not affocdable in LMICs.



Prenatal multiple micronutrient supplements (MMS) provide 15 vitamins and minerals that are critical for a healthy pregnancy and to fill the gap between the higher nutrient requirements imposed by pregnancy and the typical low micronutrient intakes often found in LMIC.

Benefits of MMS on Birth Outcomes (over and above IFA alone)*

8% in stillbirths

2%–9% in SGA births

6%–8% in preterm births

13%–19% in very preterm births

12%–14% in LBW

With even greater benefits for underweight and anemic women

19% in LBW

29% in infant mortality

16% in preterm birth

Adolescent girls who receive MMS also benefit substantially

19% in LBW

14% in SGA births

14% in preterm births

A **12% risk reduction** in LBW observed with MMS has the potential to benefit an estimated **2.2 million** infants in LMIC annually, given the recent global estimates of 20.5 million live births with a birth weight of less than 2,500 g, of which 91% occur in LMIC.

Early start of supplementation and high adherence also produce greater benefits in terms of preterm births and neonatal and infant mortality

Recommended dietary allowances (RDA) for 15 micronutrients in non-pregnant and non-lactating women as well as in pregnant women (showing increases of micronutrient requirements by up to 50%), the composition of the UNIMMAP MMS formulation (designed to meet the needs of 15 micronutrients in pregnant women), and the composition of the most used formulations of iron and folic acid supplements (which only offer 2 micronutrients).

Micronutrient	RDAs for non-pregnant and non-lactating (NPNL) women	RDAs for pregnant women (% increase from NPNL women)	UNIMMAP MMS formulation	Iron and folic acid supplements (common formulations)
Vitamin A	700 µg RAE	770 µg RAE	800 µg	-
Vitamin B_1 (thiamine)	1.1 mg	1.4 mg (+27%)	1.4 mg	-
Vitamin B_2 (riboflavin)	1.1 mg	1.4 mg (+27%)	1.4 mg	-
Vitamin B_3 (niacin)	14 mg	18 mg (+28%)	18 mg	-
Vitamin B_6 (pyridoxine)	1.3 mg	1.9 mg (+46%)	1.9 mg	-
Vitamin B_9 (folate)	400 µg DFE	600 µg DFE (+50%)	400 µg	400 µg†
Vitamin B_{12}	2.4 µg	2.6 µg (+8%)	2.6 µg	-
Vitamin C	75 mg	85 mg (+13%)	70 mg	-
Vitamin D	600 IU	600 IU	200 IU	-
Vitamin E	15 mg	15 mg	10 mg	-
Copper	900 µg	1,000 µg (+11%)	2 mg	-
Iodine	150 µg	220 µg (+47%)	150 µg	-
Iron	18 mg	27 mg (+50%)	30 mg	30–60 mg
Selenium	55 µg	60 µg (+9%)	65 µg	-
Zinc	8 mg	11 mg (+38%)	15 g	-

†*MMS contains 400 mcg folic acid. 1.67 mcg DFE is the same as 1 mcg of folic acid*
1 mcg DFE = 0.6 mcg folic acid from fortified foods or dietary supplements consumed with foods
RAE: Retinol activity equivalents; DFE: Dietary folate equivalents

* Variations in estimates were expected due to the differences in the number of trials included in each analysis and their methodology, but it is important to note the consistent findings demonstrating risk reduction for several birth outcomes.