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**Improving MMS Effectiveness
through High Adherence:
Evidence and Country Insights**



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Optimizing the impact of MMS

Early initiation & high adherence increases the effect of supplementation in pregnancy

Results from an IPD Meta-Analysis

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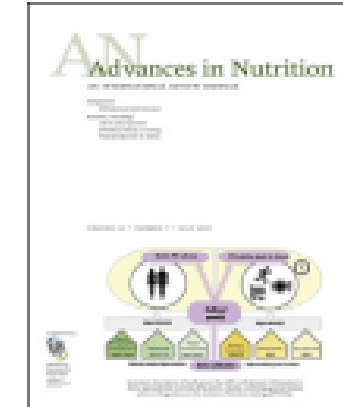


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Review

Contribution of Maternal Adherence to the Effect of Multiple Micronutrient Supplementation During Pregnancy: A Systematic Review and Individual Participant Data Meta-analysis



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Multiple micronutrient supplementation (MMS) in pregnancy reduces risk of low birthweight and improves other maternal and infant outcomes.

What is the role of supplement initiation timing and supplement adherence in the effectiveness of MMS?

Why did we do this study?



Previous Evidence

MMS increases infant birthweight and reduces low birthweight and other adverse outcomes

Benefits may depend on when supplementation begins and adherence level

- <20 weeks: greater effect on preterm birth
- $\geq 95\%$ adherence: greater effect on infant mortality



Knowledge Gaps

Previous analyses only assessed very high adherence ($\geq 95\%$)

Did not account for total number of tablets taken (adherence \times duration)

What data contributed to our IPD meta-analysis?

Included Information



15 trials



56,939 pregnancies



Most used **pill counts**



Trials conducted in West, East, and Southern Africa and South and Southeast Asia

Variation by Trial

- Adherence ranged widely

proportion of women with >90% adherence ranged from **15%** → **83%** across trials

- Gestational age at start varied widely

Proportion of women <20 weeks at initiation ranged from **0%** → **100%** across trials

Higher adherence → better outcomes

≥90% adherence

↑ Birthweight by +18 g

↓ Risk of low birthweight by 7%

↓ Risk of **small-for-gestational-age (SGA)** by 5%

≥75% adherence

↓ Risk of **stillbirth**

↓ Risk of **anemia**

<60% adherence was associated with greater risk of stillbirth (RR: 1.43; 95% CI: 1.12, 1.83) and maternal anemia (RR: 1.26; 95% CI: 1.11, 1.43) than 75%–90% adherence

Earlier initiation amplifies benefits

Combined Effect of Adherence and Timing

 Started <20 weeks

 ≥90% adherence



+23 g higher birthweight

↓ 8% reduced risk of LBW

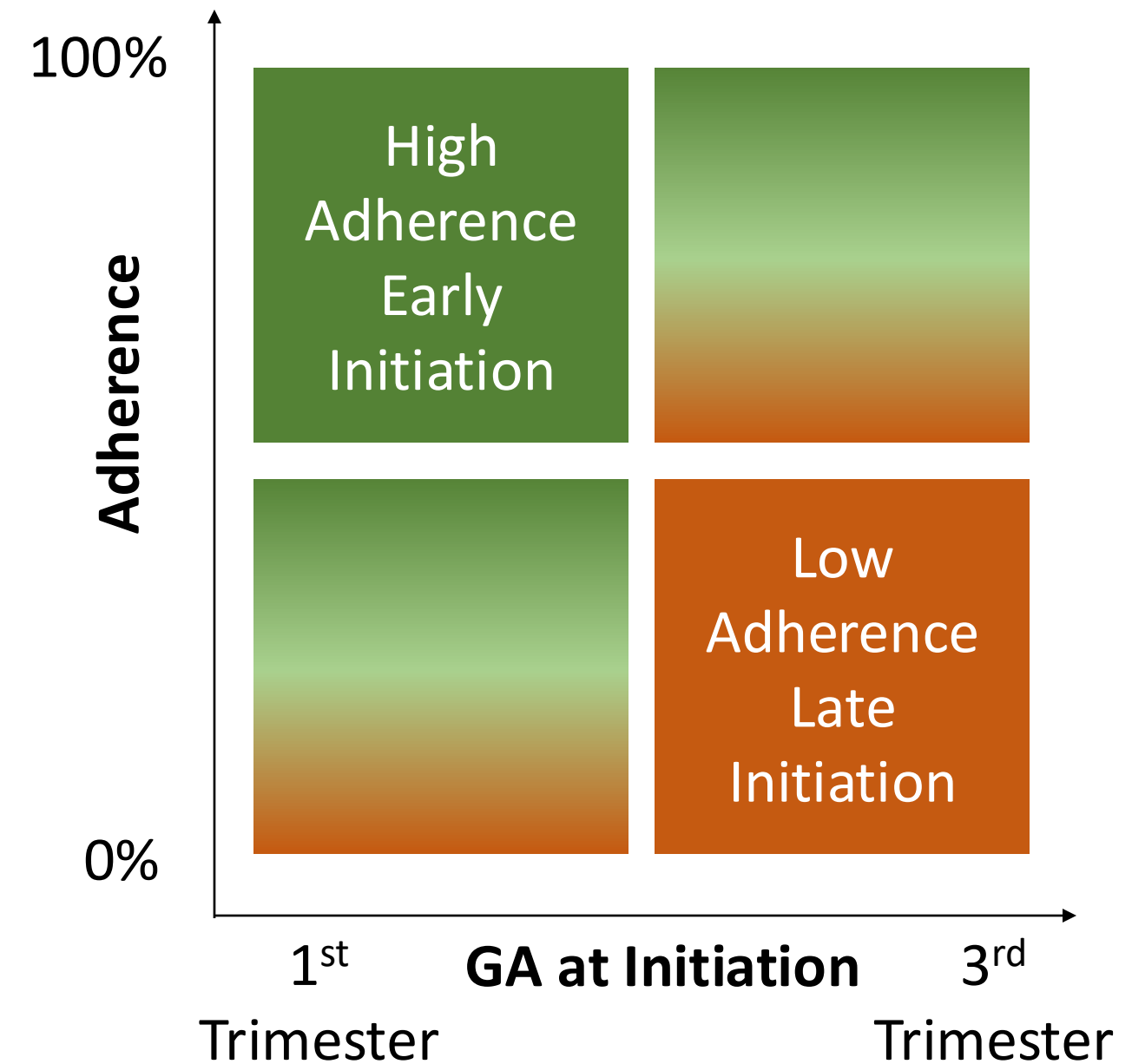
Total number of tablets also matters

>180 tablets during pregnancy associated with

↓ **Preterm birth risk**

↓ **Stillbirth risk**

↑ **Birthweight**



Early initiation + High adherence → Higher total tablets in pregnancy

Key Messages

Start early, adhere consistently:

- Initiating MMS before 20 weeks + achieving higher adherence improves preterm birth and birthweight outcomes
- >90% adherence yields the largest benefits for birth size

Program focus:

- Strengthen early ANC attendance
- Support adherence throughout pregnancy for maximum impact

Planning and budgeting implications:

- 180 tablets sufficient for many pregnancies
- Some many require additional tablets, for example ~189 tablets for a pregnancy starting at 10 weeks, with 90% adherence, full-term pregnancy



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Thank you for joining our Coffee and Chai Chat! Stay tuned for more chats with experts on maternal nutrition, MMS and BEP interventions.



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