# Women First: Preconception Maternal Nutrition

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## ABSTRACT

**Rationale:**

Attention is increasingly directed to the role of maternal nutrition during the 1st trimester for normal growth and development during the first thousand days. This also applies to maternal nutrition preconception, not only when the mother herself was very young but also in the months prior to conception. However, human experimental evidence in support of the perceived overriding importance of optimal maternal nutrition during these critical times in the life cycle is currently limited. A strong evidence base is essential because of the implications for virtually all poor, food insecure women of reproductive age (WRA) globally, and for the challenges these present to all stakeholders in scaling up strategies to achieve optimal growth and development in the first thousand days.

Although weight is the standard anthropometric measurement at birth and low birth weight (LBW) has major clinical ramifications, there is substantial evidence that it is birth length in the first trimester that predicts subsequent fetal growth, including the prevalence of preterm birth and intra-uterine growth retardation (IUGR). Moreover, there is evidence that length at birth is the outstanding predictor of infant linear growth, failure of which is recognized to be strongly associated with morbidity and mortality both in young children and, for different reasons, later in life.

**Goal:**

To ascertain the benefits of ensuring optimal maternal nutrition before conception and providing an evidence base for programmatic priority directed to minimizing the risk of malnutrition in all females of reproductive age.

**Objective:**

The objective is to determine the benefits to the offspring of women in poor, food-insecure environments of commencing a daily comprehensive maternal nutrition supplement (with additional balanced calorie/protein supplement for underweight participants) $\geq$ 3 months prior to conception versus the benefits of commencing the same supplement at 12 weeks gestation and also to compare offspring outcomes with those of a control group which receives no supplement