

# Iron supplementation during pregnancy and risk of malaria in malaria-endemic region

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Credit: CDC

Among women in a malaria-endemic region in Kenya, daily iron supplementation during pregnancy did not result in an increased risk of malaria, according to a study in the September 8 issue of *JAMA*. Iron supplementation did result in increased birth weight, gestational duration, neonatal length, and a decreased risk of low birth weight and prematurity.

Anemia in pregnancy is a moderate or severe health problem in more than 80 percent of countries worldwide, but particularly in Africa, where it affects 57 percent of pregnant [women](#). Iron deficiency is the most common cause, but [iron supplementation](#) during pregnancy has uncertain health benefits. There is some evidence to suggest that [iron](#) supplementation may increase the risk of infectious diseases, including malaria. Martin N. Mwangi, Ph.D., of Wageningen University, Wageningen, the Netherlands, and colleagues randomly assigned 470 pregnant Kenyan women living in a malaria endemic area to daily supplementation with 60 mg of iron (n = 237 women) or placebo (n = 233) until 1 month postpartum. All women received 5.7 mg iron/day through flour fortification during intervention and usual intermittent preventive treatment against malaria.

Among the 470 participating women, 40 women (22 iron, 18 placebo) were lost to follow-up or excluded at birth; 12 mothers were lost to follow-up postpartum (5 iron, 7 placebo). At study entry, 190 of 318 women (60 percent) were iron-deficient. The researchers found that in a comparison of women who received iron vs placebo, Plasmodium infection (malaria) prevalence after childbirth was 50.9 percent vs 52.1 percent. "Overall, we found no effect of daily iron supplementation during pregnancy on risk of maternal Plasmodium infection. Iron supplementation resulted in an increased birth weight [5.3 ounces], gestational duration, and neonatal length; enhanced maternal and infant iron stores at 1 month after birth; and a decreased risk of [low birth weight](#) (by 58 percent) and prematurity. The effect on birth weight was influenced by initial maternal iron status. Correction of maternal iron deficiency led to an increase in birth weight by [8.4 ounces]."

Serious adverse events were reported for 9 and 12 women who received iron and placebo, respectively.

The authors note that their results may apply to pregnant women in other

low- and middle-income countries, although the effect on [birth weight](#) can vary depending on the prevalence of [iron deficiency](#).

"In low- and middle-income countries, it is generally impractical to screen for iron status, and most countries have policies for universal iron supplementation for [pregnant women](#). Based on our results, we believe that the benefits of universal supplementation outweigh possible risks."

"Pregnant women living in areas with endemic malaria require quality antenatal [during pregnancy] care," write Parul Christian, Dr.P.H., M.Sc., and Robert E. Black, M.D., M.P.H., of the Johns Hopkins Bloomberg School of Public Health, Baltimore, in an accompanying editorial.

"In a recent evaluation using Demographic and Health Survey data from 41 countries, among women with 4 or more antenatal care visits, the greatest gaps in content of care involved iron and folic acid supplementation and malaria prevention. It is important that intermittent preventive treatment and insecticide-treated net use during [pregnancy](#) be increased in malaria endemic areas to protect the mother and fetus from the effects of [malaria](#) and to decrease the possible risk of adverse effects of iron if iron folic acid supplements or multiple micronutrient supplements are provided."

**More information:** *JAMA*, [DOI: 10.1001/jama.2015.9496](https://doi.org/10.1001/jama.2015.9496)  
*JAMA*, [DOI: 10.1001/jama.2015.10032](https://doi.org/10.1001/jama.2015.10032)

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