

# Nutritional support to pregnant women in Niger

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## Background

Recent vaccine trials have shown substantially lower vaccine efficacy in low-income countries than in high- or middle-income countries. Most of the difference in vaccine efficacy between high and low-income countries may be due to lower immunogenicity of oral live vaccines, but the mechanisms underlying lower immunogenicity in developing countries remain poorly understood. To identify potential boosters of immunogenicity, we conducted a nested, cluster randomized study to evaluate the effect of prenatal nutrition supplementation on infant immune response to three doses of oral rotavirus vaccine.

## Methods

Fifty-three villages were randomized in a 1:1:1 ratio to receive daily lipid-based nutrient supplements (LNS), multiple micronutrients (MMN) or iron-folic acid (IFA). Pregnant women in participating villages received the assigned supplement at home on a weekly basis from the time of pregnancy identification until delivery. Infants of participating women were randomized in a 1:1 ratio to receive three doses of oral rotavirus vaccine or placebo. Response to the rotavirus vaccine, defined as anti-rotavirus IgA concentration, was assessed at the time of the first dose and 28 days Post-Dose 3.

## Results

Immune response among children receiving vaccine vs. placebo, as well among vaccinated children whose mothers received LNS vs. MMN vs. IFA, will be presented.

## Conclusions

Evidence supporting the immunogenicity of oral vaccines, and the identification of potential boosters, in an African setting can provide valuable information to increase of impact of vaccination.

Immunogenicity of oral live vaccines is low in developing countries. We examine immune response among children receiving vaccine vs. placebo, as well among vaccinated children whose mothers received nutritional support in pregnancy.