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Lung alert

Maternal vitamin A supplementation improves lung function in offspring

Vitamin A has an important role in fetal lung development. This study tested the hypothesis that maternal vitamin A deficiency could have a long-term adverse effect on the lung function of offspring, quantified by reduced forced expiratory volume in 1 s (FEV₁) and forced vital capacity (FVC).

The participants were a cohort of rural Nepali children, aged between 9 and 13 years, whose mothers had taken part in an original study aimed to determine the effects of vitamin A, β -carotene or placebo supplementation throughout pregnancy on maternal death rates.

Over a 2 year period spirometric data were collected from 1371 children (83% of those eligible for participation after the original study). Results demonstrated normally distributed FEV₁ and FVC volumes, with means of 1.54 and 1.74 litres, respectively. Compared with the placebo group, the FEV₁ was 46 ml higher in the children whose mothers had received vitamin A supplementation throughout pregnancy, and 14 ml higher in the β -carotene group than the placebo group. Even after adjustment for confounders such as age, height and sex, a similar comparison was made for FVC. Compared with the placebo group the FVC was 46 ml higher in the vitamin A group and 17 ml higher in the β -carotene group.

The study concludes that repletion of vitamin A and, to a lesser degree, β -carotene during pregnancy improves lung function, potentially providing long-term public health benefits.

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