Nutritional supplementation program helps prevent weight loss among children in African country

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Children in Niger who received a daily nutritional supplement for three months had a lower rate of weight loss and a reduced risk of wasting compared to children who did not receive the supplementation, according to a study in the January 21 issue of *JAMA*.

Wasting (defined as a certain deviation that a child's weight is from the median [midpoint] weight of a child of the same height in a reference group) is characterized by the loss of weight and muscle mass. It affects approximately 10 percent of the world's children younger than 5 years and is an important factor in the risk of disease and death among this population. Ready-to-use-therapeutic foods (RUTFs) have been shown effective in the treatment of severe and moderate wasting, according to background information in the article. These foods are energy-dense, micronutrient-enriched pastes often made up of peanuts, oil, sugar and milk powder. The effectiveness of RUTFs in preventing moderate and severe wasting in children has not been previously evaluated.

Sheila Isanaka, B.A., of the Harvard School of Public Health, Boston, and colleagues assessed the effect of a 3-month distribution of RUTF to nonmalnourished children in a region with traditionally high levels of child malnutrition and evaluated the effectiveness of a distribution of RUTF delivered at the village rather than the individual level. "The primary hypotheses were that village-level supplementation with RUTF in the months preceding the annual harvest would prevent declines in

individual weight-for-height and reduce the incidence of wasting in children aged 6 to 60 months over a period of 8 months," the researchers write.

The study included 12 villages in Niger, with six being randomized to intervention and six to no intervention. Children in the six intervention villages received a monthly distribution of 1 packet per day of RUTF (500 calories per day) from August to October 2006, with 8 months of follow-up. Children in the 6 nonintervention villages received no preventive supplementation. Active surveillance for conditions requiring medical or nutritional treatment was conducted monthly in all 12 villages during the study period. The number of children with height and weight measurements in August were 3,166; October, 3,110; December, 2,936; and in February 2007, the number of children with height and weight measurements was 3,026.

The researchers found a significant difference in the rate of change in measurements of wasting over the 8-month surveillance period, with the intervention resulting in a 36 percent reduction in the incidence of wasting and a 58 percent reduction in the incidence of severe wasting. The death rate did not differ between groups, and the intervention did not effect the prevalence of malaria, diarrhea or respiratory tract infection.

"These results are applicable to other settings of acute food insecurity, where access to food is limited due to emergency or seasonal conditions and where short-term food supplementation is required for the prevention of wasting. The effectiveness of preventive supplementation with RUTF in other settings may depend on RUTF acceptability, the extent of resale after distribution, and the adequacy of the public health and nutrition systems in place," the authors write.

"The effectiveness of any intervention to prevent malnutrition, however,

will ultimately depend on its consideration of the underlying causes of malnutrition, integration with other broad-based strategies to improve public nutrition, and feasibility within the resource constraints of humanitarian and public health programming."

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