

# VITAMIN A: THE CHILD'S ALLY

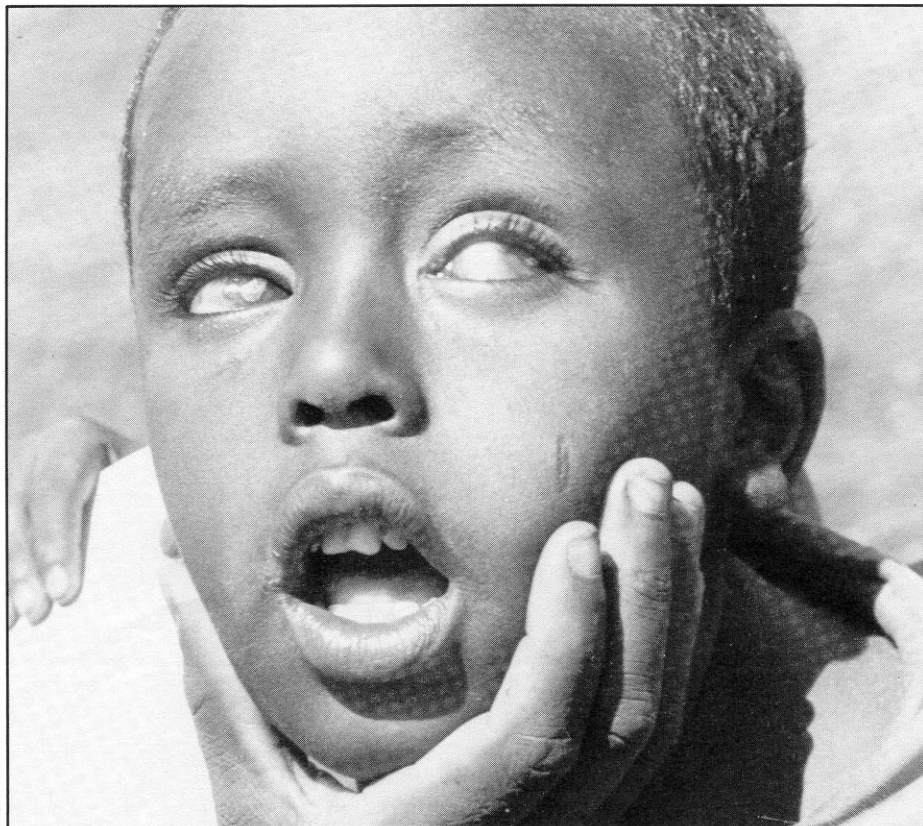


Photo: Helen Keller International

*This Ethiopian boy has lost his sight because of vitamin A deficiency. The cornea ruptures in the final stages of the disease, blinding the victim.*

By FRANCIS HARAWA

It has long been known that vitamin A deficiency causes xerophthalmia, an eye disease that sometimes blinds its victims. According to the World Health Organization (WHO), xerophthalmia (Greek for "dry eye") threatens 5 to 10 million children in the developing world each year. An estimated 500 000 of them lose their sight.

More recently there has been solid evidence that the lack of vitamin A is also directly linked to two of the developing world's major child-killing diseases: diarrhea and respiratory infections. This evidence comes from a major child health study on the Indonesian island of Sumatra, conducted between 1982 and 1984. The results suggest that distribution of vitamin A to children could end up saving millions of lives each year.

"At first it was believed that this association could be explained by the idea that lack of vitamin A was probably an indicator of the more general malnutrition which is well known to predispose a child to illness," writes James Grant, Executive Director of the UN Children's Fund (UNICEF), in *The State of the World's Children 1986*. "But further analysis has suggested that otherwise well-nourished children who lack vitamin A are more prone to both diarrhoeal and respira-

tory illness than are poorly nourished children who happen to have adequate levels of vitamin A.

"In the one major test of the practical significance of these findings, it appears that distribution of the standard UNICEF vitamin A capsule every six months has succeeded in reducing child death rates (in the age group one to three years) by approximately 30% among a population of over 15,000 children in Indonesia," the report says.

"Should these findings be confirmed, then the maintenance of an adequate level of vitamin A will join the range of low-cost, parent-based ways of protecting the health and lives of poor communities of the world."

It is not exactly known how the deficiency encourages the deadly child diseases. But experts say it might make its victims more susceptible to other diseases by suppressing directly or indirectly the immune system.

Evidence has shown the deficiency also causes the hardening of mucous membranes in gastrointestinal and urinary tracts as well as around the eyes. With these normally wet parts drying and lacerating, a process known as keratinization, they may provide an easy entry for infection.

Results of the Indonesian study, which

was conducted by Dr Alfred Sommer of the John Hopkins University in the United States, have galvanized international efforts to combat vitamin A deficiency. UNICEF and WHO, for example, have distributed millions of vitamin A tablets in affected areas.

Distributing vitamin A capsules to children at six-month intervals appears to be the short-term solution to the problem. But it can be an expensive measure that does not necessarily reach the children at risk.

A second method involves fortifying commonly used foods, in the same way salt is iodized to prevent goitre. Sugar fortified with vitamin A has been tried successfully in Latin America, according to Dr Stephen Moses, an IDRC program officer.

IDRC has been working with the New York-based organization Hellen Keller International in Indonesia to investigate the possibility of delivering vitamin A to children through fortification of monosodium glutamate (MSG), a commonly used food additive. Researchers will test the ability of fortified MSG to reduce the early signs of xerophthalmia and to increase vitamin A levels in children and lactating mothers' breast milk.

IDRC is also working on a project in Zambia's Luapula Valley—dubbed the "valley of the blind"—to determine the prevalence, severity and distribution of xerophthalmia and trachoma among children under six years of age. The project will, in addition, identify nutritional and other factors linked to blindness in the Valley.

The long-term solution is nutrition education. "It is in theory a simple solution," says Dr Moses, "but one that is difficult to fulfill because it involves changing people's behaviour." In the meantime, supplementing children's diets with vitamin A will save many lives in Africa, Asia, and Latin America. □

*Francis Harawa, formerly editor of the Malawi News, is now a freelance writer in Ottawa.*

## SIGHT AND DIET

Mild cases of vitamin A deficiency result in night blindness, a condition whereby the victim has difficulty seeing in dim light.

A more severe form of the disease is xerophthalmia. The eyes become rough and wrinkled, and the cornea dries and lacerates, impairing vision. The critical and irreversible stage, keratomalacia, occurs when the cornea ruptures, leaving the victim blind.

Milk, eggs, liver, fish, green leafy vegetables, and fruits such as mangoes and papaya are good sources of vitamin A.