

Meeting the global need for nutrients

PATH applies innovation and technology to solve nutrition problems

Nutritional deficiencies undermine productivity, health, and life expectancy around the world. Each year, for example, iron deficiency leads to more than 60,000 maternal deaths, and inadequate folic acid intake causes severe birth defects in at least 200,000 infants. Stunting, severe wasting, and intrauterine growth retardation contribute to 2.2 million deaths among children less than five years old. In all, an estimated 3.5 million maternal and child deaths are attributed to undernutrition every year.

Improving nutrition in developing countries is a crucial part of PATH's work. We develop technologies to evaluate and improve nutritional status in vulnerable populations; strengthen the systems that detect and address nutritional concerns; and encourage healthy feeding and nutrition behaviors, especially among pregnant women, infants, and children.

Detecting micronutrient deficiencies

Worldwide, an estimated 100 million children get too little vitamin A and precursors to vitamin A, which are found in fresh foods such as fruits, vegetables, milk, and eggs. Vitamin A deficiency leads to blindness and an estimated 1 million deaths each year, mainly among young children.

PATH has developed a new test that can assess vitamin A status at the population level. The retinol-binding protein enzyme immunoassay (RBP-EIA) has several advantages over the traditional method for assessing deficiency:

- It costs less and is easier to use for community- and population-based surveys.
- It uses standard laboratory equipment.
- It requires only a small sample of blood from a finger stick.
- It can be completed in less than 40 minutes.

Developed with funding from the US Agency for International Development (USAID) under PATH's HealthTech program, the RBP-EIA has proved to be a reliable, cost-effective tool for targeting interventions and monitoring results.

In 2003, PATH licensed the technology to Scimedx, a US diagnostics company, for rapid introduction to commercial markets. Together, PATH and Scimedx work with researchers and public health staff in developing countries to provide technical support and tools to ensure proper field use of the test.

Building on this progress, PATH is exploring new tools to evaluate multiple micronutrients, as well as markers of infection, from a single sample. Other micronutrients of concern include iron and zinc.

Success stories

Use of vitamin A test in Uganda

The RBP-EIA technology to assess vitamin A status was successfully used in Uganda in 2006. Field workers collected 5,600 dried blood samples from women and children as part of the Uganda Demographic and Health Survey. Results published in 2007 demonstrated the technology's value in low-resource settings.



Richard Lord

Improving infant feeding in the context of HIV

In Lesotho, staff with the Infant and Young Child Nutrition Project helped develop a new national policy and guidelines for infant feeding in the context of HIV/AIDS. PATH also trained 140 health workers and 20 home economists in five districts to strengthen community-based efforts to improve infant feeding practices.

Expanding the use of the Ultra Rice® technology

Although rice is a staple food for more than half the world's population, it lacks many nutrients essential for good health. With support from the Bill & Melinda Gates Foundation, PATH has advanced Ultra Rice technology—manufactured grains fortified with selected micronutrients—to help meet the nutritional needs of people in low-resource settings.

Fortified with micronutrients such as vitamin A, zinc, folic acid, thiamin, and iron, Ultra Rice grains are blended in small amounts with local rice. By protecting micronutrients within the manufactured grain, the Ultra Rice technology limits nutrient degradation during storage, rinsing, and cooking. Studies have found that Ultra Rice grains are an effective, low-cost means to address specific nutritional deficiencies in rice-dependent populations.

PATH licenses the Ultra Rice technology without royalty fees to local manufacturing partners. Companies in Brazil, Colombia, and India have already learned to make the product, and many in China are also showing interest.

Improving nutrition for infants and young children

Poor nutrition in early childhood increases the severity of common diseases and the risk of stunted growth and death. To prevent these effects, the PATH-led Infant and Young Child Nutrition Project works to improve breastfeeding, complementary feeding, and nutrition practices for children less than two years and to enhance maternal nutrition. The project places special emphasis on infant feeding in the context of HIV/AIDS. Supported by USAID, the project operates in Africa, Asia, and Latin America and the Caribbean.

This new project provides technical assistance to ministries of health, nongovernmental organizations, and other groups in policy development, training, behavior change communication, monitoring, supervision, and evaluation. For example, in March 2008, project staff helped the government of Haiti convene a landmark meeting of more than 100 stakeholders to discuss new World Health Organization recommendations on infant and young child feeding.

To improve dietary quality among children 6 to 24 months old, the project team works to increase the availability and use of high-quality foods. PATH also partners with the Global Alliance for Improved Nutrition to help private firms increase the appropriate use of fortified complementary foods in several Asian and African countries.

For more information

Please visit www.path.org to learn more about these activities, or contact the following project leaders:

- Infant and Young Child Nutrition Project: Rae Galloway, technical director, at rgalloway@path.org.
- Ultra Rice technology: Christine Bounds-Poulin, project administrator, at cbounds@path.org.
- Micronutrient assessment tools: Carol Levin, senior health economist, at clevin@path.org.

Use of fortified rice in Colombia

In Colombia, where PATH partnered with a local manufacturer to produce Ultra Rice grains for the commercial market, more than 66,000 school children now eat micronutrient-fortified rice each day in the city of Medellin. The program will soon be expanded to thousands more children in Medellin and Bogota.



PATH / Mike Wang

PATH is an international nonprofit organization that creates sustainable, culturally relevant solutions, enabling communities worldwide to break longstanding cycles of poor health. By collaborating with diverse public- and private-sector partners, PATH helps provide appropriate health technologies and vital strategies that change the way people think and act. PATH's work improves global health and well-being.



1455 NW Leary Way
Seattle, WA 98107 USA

www.path.org