

Executive Summary



A young girl in Ethiopia being administered vitamin A. Approximately one third of the developing world's children under the age of five are vitamin A-deficient, and therefore ill-equipped for survival. © MI

VITAMINS AND MINERALS ARE VITAL COMPONENTS of good nutrition and human health, advancing physical and intellectual development in many important ways. A number of vitamins and minerals – also known as micronutrients – are particularly important because of the large numbers of people around the world who are deficient in them. These are vitamin A, iodine, iron, zinc and folate.

Around the world, billions of people live with vitamin and mineral deficiencies. For instance, approximately one third of the developing world's children under the age of five are vitamin A-deficient, and therefore ill-equipped for survival. Iron deficiency anaemia during pregnancy is associated with 115,000 deaths each year, accounting for one fifth of total maternal deaths.

Children, whose mothers died giving birth, may be neglected. Children who themselves have insufficient micronutrient intake and absorption can suffer serious lifelong repercussions. If they survive infancy, their bodies may be weak and prone to disease. They may have birth defects or become blind. They may not go far in school.

When whole populations suffer from malnutrition, including

a lack of critical vitamins and minerals, nations likewise cannot fulfill their potential. Health-care costs rise, education efforts are thwarted, the workforce is less capable and productive, and economic activity is curtailed. Human capital overall is significantly diminished.

Yet there is encouraging news from many corners. Working together, national governments, donors, science and industry have made huge strides in delivering cost-effective solutions to vulnerable populations. These successes, if further scaled-up, present exciting opportunities to improve the lives of those who have thus far not been reached.

The Causes of Vitamin and Mineral Deficiencies

The causes of vitamin and mineral deficiencies are multiple and interconnected. At the most basic level, the problem is related to diet. Throughout the world, poor people do not consume sufficient amounts of nutrient-rich foods such as meat, eggs, fish, milk, legumes, fruits and vegetables. The problem is made worse by inadequate health care and sanitation, disease, and a lack of education in infant and childcare.

Quality, varied diets would resolve most vitamin and mineral deficiencies. However, improving the diets of the world's poor is a complex and long-term undertaking that is largely dependent on rising incomes, improved access to food, better health and nutrition services delivery, and changing infant and young-child feeding practices. Well-integrated strategies to address nutrition at the national level will be critical for long-term success in reducing malnutrition, improving health, educational achievement, and economic productivity. In the short term, however, many lives can be saved and improved through a range of cost-effective interventions, including supplementation and fortification.

Call to Action: Solving Vitamin and Mineral Deficiencies through Partnerships

The successful delivery of large-scale interventions requires broad-based partnerships. National governments take the lead by identifying needs, setting and monitoring national policy and standards, budgeting for micronutrient programmes, training health-care providers, and launching social marketing and education campaigns. Their long-term commitment is vital.

Non-governmental organizations can support this commitment with expertise in programme design and delivery, continuing research, advocacy, and the procurement of products. International donors – governments and philanthropic groups alike – help across the board, by assisting with large-scale procurement, boosting global supplies, and covering implementation costs.

Internationally and locally, the private sector brings its pharmaceutical and food processing expertise and ingenuity to produce, promote, and ensure quality control. Small-scale processors and farmers also play key roles. Partnerships have created some stunning successes in the past decade.

Vitamin A – Research has shown that, where a population is at risk of vitamin A deficiency, vitamin A supplementation reduces mortality in children between six months and five years of age by an average of 23%. Global efforts to provide young children with twice-yearly supplements have involved 103 countries. In 1999, just 16% of children in these countries received full supplementation. By 2007, that number had more than quadrupled to 72%.

Salt iodization – When the power of iodine is unleashed through intake of iodized salt, the results are impressive. In communities where iodine intake is sufficient, average IQ is

shown to be on average 13 points higher than in iodine-deficient communities. Between 1993 and 2007, the number of countries in which iodine-deficiency disorders were a public health concern was reduced by more than half, from 110 to 47.

Like these successes, other approaches have shown great promise. One approach is food fortification, which is the process of adding vitamins and/or minerals to foods to increase their overall nutritional content. Multiple micronutrient solutions, whether in packets for in-home use or delivered through clinics and public campaigns, warrant urgent and wide expansion.

The Best Investment in the World

As the global financial crisis unfolds and available funds from all sources are shrinking, the need for development assistance is expanding at an alarming pace. It is more important than ever that priority for investments goes to measures that yield the highest rates of return.

Micronutrients are inexpensive commodities. Low-cost supplements and fortificants are already available. For instance, it is estimated that the cost of salt iodization is a mere five cents per person per year. Vitamin A capsules cost two cents each. Micronutrient initiatives can easily be integrated into ongoing health services, or into existing methods for food production.

With the low cost of interventions and their high returns in improved capacity, the benefit:cost ratio of micronutrient programming is unmatched by any other large-scale health or economic intervention.

This simple truth has been endorsed by a panel of eight of the world's most distinguished economists. In May 2008, the Copenhagen Consensus panel considered 30 options and ranked the provision of micronutrients as the **world's best investment for development**.

They determined that vitamin A and zinc supplementation for children provided the very best returns: an annual investment of US\$ 60 million would yield benefits worth more than US\$ 1 billion per year. Micronutrient fortification ranked third; biofortification ranked a close fifth.

Achieving the Millennium Development Goals by 2015 will require strategic vision on the part of all those with resources to invest. Much is already understood about early nutrition needs and what works. Commitment and funds, supported by strong partnerships, will extend the reach of micronutrient interventions and leave no one behind.