

sight and life



Action in Brief

Reducing Global Malnutrition, One Egg at a Time

Stunting, or chronic malnutrition, continues to plague countries worldwide. One hundred and fifty-one million children under five are now affected, while a further 2 billion people suffer from micronutrient deficiencies. Children who are stunted before the age of 2 are at a greater risk of poor cognitive development, inferior educational outcomes, and economic underperformance in later life.

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Stunting – inadequate length/height for age – in early childhood has multiple causes. These include inadequate maternal and/or early childhood nutrition, inadequate infant and young child feeding practices, poor environmental health, lack of dietary diversity, and illness. Low intake of animal-source foods (ASFs) rich in high-quality protein and other key nutrients during the complementary feeding period (6–24 months) is a significant factor here. Evidence suggests that the consumption of ASFs is associated with improved linear growth. At *Sight and Life*, we are devoted to increasing egg production and consumption in support of better nutrition for vulnerable populations worldwide. We report here on some egg-citing recent developments.

An egg-cellent way to improve maternal and child nutrition

Eggs have enormous potential to improve maternal and child nutrition during the first 1,000 days of life. Small but mighty, eggs possess almost all the micronutrients an infant needs for growth,

in addition to high-quality protein, and are an important constituent of early diets as a complementary food.

A study in Malawi, in which *Sight and Life* was involved, found that levels of essential amino acids, lipids and choline were significantly lower in stunted than non-stunted children. Eggs are an excellent source of these nutrients, and studies on the effects of egg consumption on women and children show that child growth indicators are significantly improved by a diet involving eggs.

Eggs are easy to store, transport, clean, cook and eat, and can be prepared either as a meal in their own right or as an ingredient in more complex recipes. Of all animal protein sources, eggs have one of the lowest environmental impacts, making them a sustainable means of supporting physical and cognitive development and reducing malnutrition in children.

'Nature's multivitamin'

Eggs are so nutritious that they are often referred to as 'nature's multivitamin' or 'nature's first food.' One whole egg contains an

WHAT'S IN AN EGG?

VITAMINS

25%

Vitamin B₁₂
Helps in the metabolism of fatty acids and amino acids, cell creation, and the protection of nerve cells

15%

Vitamin B₂
Helps the body break down carbohydrates, proteins and fats to produce energy, and allows oxygen to be used by the body.

9%

Vitamin D
Vital for normal calcium metabolism, immunity, nervous system function, and bone density

8%

Vitamin A
Plays a central role in our vision, skin, genes, growth, and immune system

% = percent of recommended daily allowance (RDA)

MINERALS

27%

Selenium
Antioxidant and thyroid regulator

15%

Folate
Cell growth, red blood cell formation and prevention of Neural Tube Defects.

11%

Phosphorus
Keep bones and teeth strong

6%

Iron
Help hemoglobin and myoglobin bring oxygen to all the cells that need it



amazing range of nutrients, including vitamin A, vitamin B₂ (riboflavin), vitamin B₅ (pantothenic acid), vitamin B₉ (folate), vitamin B₁₂ (cobalamin), choline, vitamin D, vitamin E, selenium, iron, iodine, calcium, phosphorus, potassium and zinc.

Eggs deliver a wide range of health benefits, helping to improve energy production, muscle strength, brain health, skin health, and immune system functionality. They support maternal health during pregnancy and healthy fetal development, and also reduce the risk of heart disease.

Elevating eggs

Eggs possess enormous potential as a practical and affordable solution to malnutrition. Nevertheless, no more than 1 to 2 eggs per capita per week are available in many parts of the world, especially sub-Saharan Africa and South Asia – regions that experience the highest burden of childhood malnutrition. However, eggs are the most affordable high-quality, nutrient-dense food globally, and scaling up egg production has the potential to improve livelihoods and deliver health benefits for poor, rural populations in many parts of the world.

The Egg-citing Project at *Sight and Life*

At *Sight and Life*, the quest to deliver eggs to some of the world's most vulnerable populations is an egg-citing and eggstra-ordinary opportunity.

Through our Egg-citing Project, we are working on making eggs available and affordable to low-income households by supporting the introduction of innovative poultry business models in Ethiopia, India, Indonesia, and Malawi. We are also piloting new innovations in egg production and egg-based products, models, tools and approaches to address protein and micronutrient malnutrition during pregnancy, infancy, and adolescence.

Egg hubs

Two core innovations from *Sight and Life* are the 'egg hub' and 'egg powder'. An 'egg hub' is a centralized unit offering farmers high-quality, affordable inputs, extension services, training and market access. Egg hubs solve the supply-side challenges typically faced by small- and medium-scale poultry farms. They can help countries with low-yield production systems make the transition

to the efficient, high-yield systems that are associated with much lower market prices.

Egg pow(d)er

Often referred to as 'powdered egg', 'dry egg', 'dried egg powder', and even 'ersatz egg' in the middle of the 20th century, egg powder is a pasteurized, spray-dried product derived from fresh hen eggs. The use of dehydration to preserve eggs was widespread as long ago as the Middle Ages. This technique was also used in the context of rationing programs during World War II.

Dehydrated egg has a long shelf-life of two years, is easy to store and transport over long distances, and is simple to cook. It also contains no preservatives or artificial flavors, reduces the risk of food-borne illness on account on the pasteurization process, generates less food waste than shell eggs, and is less expensive to purchase than shell eggs. It is commonly used as an ingredient in baked goods, and is consequently traded in large volumes across the world. *Sight and Life* is now testing egg powder for potential consumer applications designed to improve climate-smart nutrition and health.

Stay tuned for news of our egg hub journey, consumer insights and novel applications for egg pow(d)er!

Differences in the relative caloric prices of healthy and unhealthy foods

- > Calorie for calorie, eggs and fresh milk are often 10 times as expensive as starchy staples in most lower-income countries.
 - > The comparatively higher prices commanded by ASF
- typically lead to less frequent consumption among young children.
- > Relative dairy and egg prices are strongly associated with variations in stunting rates around the world.

Source: Headey DH, Alderman HH. The Relative Caloric Prices of Healthy and Unhealthy Foods Differ Systematically across Income Levels and Continents, *The Journal of Nutrition*, nxz158, <https://doi.org/10.1093/jn/nxz158>

Further information

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