

# Nutrition interventions: what works best when?

Millions of infants and young children are at risk for malnutrition, and consequently, poorer outcomes. This article addresses what interventions work best, and how food programmes can be developed to maximise their effects on reducing chronic malnutrition.

While malnutrition affects people of all ages, infants and young children are particularly vulnerable to its effects. Recent estimates suggest 28 percent (156 million) of children under five years living in developing countries suffer chronic malnutrition or stunting. Undernutrition reduces the capacity to fight infection, making even common diseases and illnesses in young children life-threatening. Dietary intake that does not meet the nutritional needs for the extraordinary brain and body growth that occurs during the first two years can lead to irreversible alterations. There is strong evidence linking early, chronic malnutrition with cognitive delay, impaired learning, low education attainment and decreased economic earning power. Although some “catch up” is possible, children who become stunted in the first two years of life typically remain stunted and may never fully recover from the functional consequences of early malnutrition (Grantham-McGregor et al: *Developmental potential in the first 5 years for children in developing countries*, Lancet, 2007, 369: 60-70).

Growth retardation can begin in utero if mothers are underweight

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### World Health Organization (WHO) definition for “stunting”

Chronic malnutrition is indicated by stunting, defined as length or height two or more standard deviations below the median value for healthy children of the same age and sex. New growth curves were recently developed by WHO and are based on a global representation of children.

or have poor nutrition during pregnancy. Weight and length often begin to drop off around six months of age when *exclusive breastfeeding* is no longer sufficient to support growth and infants need to also start eating *complementary foods*. For children living in places where food is scarce and sanitation is lacking, this dietary shift can lead to growth faltering. Some of the most common reasons for this include: introducing foods too early or too late; feeding too little or too infrequently; feeding with low nutrient foods; and inadequate nutrient absorption, caused by illness,

### WHO recommendations for feeding of infants

WHO recommends exclusive breastfeeding (i.e., no other liquids or foods) until six months of age and continued breastfeeding through 24 months of age. Complementary feeding refers to the provision of soft, easily digested foods during the transition from exclusive breastfeeding to family foods.

often due to unhygienic preparation of foods or use of unsafe water. Faltering is usually most marked at 12 to 18 months, but tapers off by four years (Allen & Gillespie: *What Works? A Review of the Efficacy and Effectiveness of Nutrition Programs*, ACC/SCN, 2001).

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## Nutrition interventions

Most food programmes target all children under five years of age, but younger children show greater growth response to treatment. While no singular “best” strategy has been identified, a recent review of programmes and trials offers some insights about the pros and cons of various interventions on the nutritional status and health of young children (Dewey & Adu-Afarwah: *Systematic review of the efficacy and effectiveness of complementary feeding interventions in developing countries*, Maternal and Child Nutrition, 4, 24-85 2008). The programmes/trials evaluated in the review provided:

- fortified or unfortified complementary foods;
- micronutrient fortification alone;
- local foods modified to augment their caloric value;
- education about feeding practices; or
- food + education about feeding practices.

The foods used were processed or locally available cereal-legume blends, milks and spreads. All studies included children six to 24 months of age, and most measured weight and length before and after two+ months of intervention.

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## What works?

The authors of the review generally concluded that programmes providing complementary foods (with or without education) showed the greatest impact on growth, especially in areas where food insecurity and malnutrition



Photo: GAIN

*Children who become stunted in their first two years of life typically remain stunted and will probably never recover from the functional consequences of early malnutrition.*

were high. Foods modified to boost their caloric content can also increase growth, but the effect of this strategy was more variable and depended upon the quality of the local foods that were modified. Education alone appears to improve growth somewhat, but may be more beneficial when combined with giving foods in places where high quality foods are lacking. Interventions that provided only micronutrient fortification (in processed foods or in packets or tablets to add to foods) typically did not impact growth.

The creation of successful programmes requires careful situation analysis and the development of appropriate, feasible interventions that are tailored to the needs of the population. In any context, the prevalence and severity of undernutrition, the level of food insecurity, and the risk of parasitic infection (which interferes with nutrient absorption) must be considered as they all influence programmes' effectiveness. However, there is some suggestion that the success of any intervention may be enhanced by:

- Promoting exclusive (through 6 months) and continued (through 24 months) **breastfeeding**.
- **Beginning during infancy** – at six to twelve months of age – rather than after twelve months of age.
- Providing **education** about feeding practices – when to start, which foods to use, how to encourage eating, the safe preparation and feeding of foods.
- Including a **focus on hygiene and sanitation**, as access to clean water, toilets and refuse disposal are essential for reducing exposure to parasites and other pathogens that can contribute to growth faltering.

## Conclusion

The first two years of life are critical for receiving the nutritional inputs necessary for physical and neurological growth. Nutrition interventions that sustain development during this period will enable children to take advantage of current and future learning opportunities so that they reach adulthood equipped with the capacities to flourish in life. As there is no indication that the current food crisis will ebb any time soon, it is imperative that the prevention of early, chronic malnutrition remains a top priority for

## Zusammenfassung

Nach neuesten Schätzungen leiden 156 Millionen Kleinkinder unter chronischer Unterernährung, die ihre Lebenserwartung deutlich verkürzt. Kleinere Kinder (unter 24 Monate) sprechen auf eine Behandlung am besten an, bisher gibt es jedoch noch kein allgemein einsetzbares Maßnahmenpaket für eine verbesserte Nahrungsversorgung. Sorgfältig geplante Programme zur Lebensmittelversorgung und Erhöhung des Nährwertes lokaler Lebensmittel können das Wachstum bei unterernährten Kindern fördern, jedoch hat die Anreicherung mit Mikronährstoffen allein keine Wirkung auf das Wachstum. Programme, die im Säuglingsalter beginnen und die das Stillen fördern, eine Aufklärung über richtige Ernährung umfassen und den Schwerpunkt auf Gesundheitspflege und Hygiene legen, können bei der Bekämpfung chronischer Unterernährung unter Umständen hilfreicher sein.

## Resumen

Según estimaciones recientes, 156 millones de niños pequeños sufren de desnutrición crónica, la cual se asocia con un futuro poco prometedor. La respuesta al tratamiento es mejor entre los más pequeños (< 24 meses de edad), pero a la fecha aún no se ha identificado un paquete de intervenciones de aplicación universal. Los programas cuidadosamente diseñados – que proveen alimentos o enriquecen el valor calórico de los alimentos locales – pueden ser eficaces para promover el crecimiento de niños malnutridos, pero la fortificación con micronutrientes por sí sola tiene pocos efectos sobre el crecimiento. Los programas que se inician en la primera infancia, fomentan la lactancia materna, proporcionan educación sobre buenas prácticas de alimentación e incluyen un enfoque de saneamiento e higiene podrían tener mayor éxito para reducir la desnutrición crónica.

the international development community. The developmental potential of millions of children depends upon it.

## ***Fifth “2015-Watch” report on MDGs: There is a need to move from rhetoric towards results***

Alliance2015 just published its 5th ‘2015-Watch’ report addressing the question whether Europe is still on track to fulfil its commitments and deliver on its promises.

This comes at a crucial time between the Accra High Level Forum on Aid Effectiveness on 2–4 September, and the UN-High-Level meeting in New York on 25 September 2008 set to review efforts to keep the Millennium Development Goals/MDGs on track. Alliance2015 is a strategic partnership of six major European non-governmental development organisations (NGDOs) of which Welthungerhilfe is the German member (CESVI/Italy, Concern/Ireland, IBIS/Denmark, HIVOS/Netherlands, and People in Need/Czech Republic are the others).

This 5<sup>th</sup> report of the 2015-Watch series, entitled *„The EU’s contribution to the Millennium Development Goals – Poverty Eradication: From Rhetoric to Results“* analyses the extent to which the European Commission’s (EC’s) aid programme is oriented towards the achievement of the MDGs. It aims to hold governments accountable for their international commitments. It looks back on five years of analysis of EU development policy and measures progress and regression. It also casts a critical eye on ambitions to deliver 50 percent of aid through General Budget support (GBS) and queries how GBS could support the EU’s efforts towards achievement of the MDGs. The report shows that the EC does not give adequate consideration to democracy and human rights issues in setting levels of budget support and that it provides significant amounts of aid in this form, even when it has judged the situation in a partner country to be deficient in crucial areas.

Given the overriding thematic context in 2008 of the increase in food prices, the sustainability of bio-fuels and the short and long-term implications of a major food crisis, this edition of 2015-Watch places special emphasis on the issue of hunger (MDG 1) as a key obstacle to the achievement of the MDGs. In the context outlined above the report identifies three major challenges for the EU in relation to its aid programme:

- **Fostering civil society as an essential partner for poverty eradication.** In all of the country aid programmes analysed, the EC assessed the situation of civil society in partner countries and acknowledged its important role in development processes. The Commission itself concludes that civil society is not always able to fulfil this role. Together with other donors, the EC has an obligation to ensure that civil society is supported, both politically and financially, to enable it to play a pivotal role in all stages of development programmes.
- **Improving its results-orientation towards the MDGs.** Despite EC rhetoric on the importance of results in the fight to eradicate poverty, less than 50 percent of EC funds are tied to the results that countries achieve. Only half again of this support is tied to results in the social sectors like e.g. health. This means that less than 25 percent of development funds are tied to results related to achieving the MDGs.
- **Ensuring accountability and promoting the proper division of powers to help effective aid administration:** While the European Parliament has been able to scrutinise

the EC’s country aid programmes for developing countries in Asia and Latin America, it played no part with regard to the country aid programmes for African, Caribbean and Pacific countries, which account for one third of the total. As the vast majority of the EC’s General Budget support will be included in its country aid programmes in Africa (2008–2013), the lack of parliamentary scrutiny in the programming process for that region means that a significant proportion of EU aid will be allocated without any direct democratic accountability at the EU level.

The EU as a whole, including its Member States, allocates around 60 percent of global Official Development Assistance (ODA) and is therefore a global player of special relevance. The European Commission’s development programmes have allocated € 51 billion for the period 2007–2013. What the EU does or does not do, counts – for the lives of many people in many developing countries!

The eradication of poverty and the achievement of the MDGs have been confirmed as the overarching objective of its Development Cooperation. This report documents that, in a number of areas, there is room for improvement and a need to move from rhetoric towards results.

The report has been compiled by EEPA, Brussels, and can be downloaded from the websites of [www.alliance2015.org](http://www.alliance2015.org) or [www.welthungerhilfe.de](http://www.welthungerhilfe.de) after September 16<sup>th</sup>.

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