

# Food supplementation is more effective if better targeted and supervised



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## *Supplementary feeding is more effective for younger and poorer children*

### **What is the aim of this review?**

This Campbell systematic review examines whether food supplementation is effective in improving the health of disadvantaged children under 5. The review summarizes findings from 32 studies: 21 randomised controlled trials (RCTs), and 11 controlled before-and-after studies (CBAs).

Supplementary food has a small effect on nutritional outcomes. It is more effective for younger and poorer children, when provided in day-care or feeding centres than as take home rations, when the supplemental food provides higher energy and when there is stricter program supervision. There is a positive effect on psychomotor development, but no clear evidence of an effect on cognitive development.

### **What did the review study?**

Undernutrition is a severe problem, especially low and middle-income countries, where it contributes to the death of a million children each year. It also increases the risks of lowered cognitive functioning, poor school performance and poor health. Supplementary feeding programs aim to close the energy gap from poor nutrition. They provide additional food or beverages with a high energy level to be consumed alongside regular meals.

This review examines whether food supplementation is effective in improving the health of disadvantaged children aged 3 months to 5 years, and examines the factors that contribute to the effectiveness of food supplementation programs.

### **What studies are included?**

Studies included in this review compare the effects of supplementary food on children's physical and psychosocial health to no-feeding or a placebo. Feeding programs could be implemented through day-care, feeding centres, or in the home, though those in a hospital setting were excluded.

The review includes 32 studies, 21 randomised controlled trials (RCTs) and 11 controlled before-and-after studies (CBAs). The majority of the included studies (29) are conducted in low- and middle-income countries.



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### How up-to-date is this review?

The review authors searched for studies until January 2014. This Campbell Systematic Review was published on 4 May 2015.

### What is the Campbell Collaboration?

The Campbell Collaboration is an international, voluntary, non-profit research network that publishes systematic reviews. We summarise and evaluate the quality of evidence about programmes in the social and behavioural sciences. Our aim is to help people make better choices and better policy decisions.

### About this summary

This summary was prepared by Bianca Albers (Centre for Evidence and Implementation, Save the Children Australia) based on the Campbell Systematic Review 2015:11 'Food Supplementation for Improving the Physical and Psychosocial Health of Socio-economically Disadvantaged Children Aged 3 months-5 years' by Elizabeth Kristjansson, Damian K Francis, Selma Liberato, Maria Benkhalti Jandu, Vivian Welch, Malek Batal, Trish Greenhalgh, Tamara Rader, Eamonn Noonan, Beverley Shea, Laura Janzen, George A Wells, Mark Petticrew (DOI: 10.4073/csr.2015.11). Howard White edited the summary, and Tanya Kristiansen (both of the Campbell Collaboration) designed it.



### What were the main findings of the review?

#### *Is supplementary food effective in improving the health of disadvantaged children under five?*

Supplementary feeding for young, disadvantaged children has small effects on children's weight and growth in low- and middle-income countries. Children who are younger, and poorer or more undernourished grow more in response to supplementary feeding.

More leakage occurs from take home rations. Therefore, food supplementation programs implemented through day care centres seem to be more effective, as are those with stricter supervision.

Both single and multiple interventions were effective for weight gain in children but the effect size for multiple interventions was higher. The effect is also higher for higher energy meals.

There is a positive effect on psychomotor development, which is development of skills that require both mental and muscular activity (such as crawling, walking, talking). However, there was no clear evidence of an effect on cognitive development.

### What do the findings in this review mean?

Targeting and strict supervision may increase the effectiveness of food supplementation programs.

The supplement should contain at least 30 per cent of the recommended daily intake. Consideration should also be given to providing rations for other family members to avoid leakage.

There is a need to fund additional trials to examine the impact of supplementary feeding on the psychosocial development of young, disadvantaged children. More research is also needed on the implementation of high-quality interventions and large-scale programmes for supplementary feeding.