

# Dietary management of moderate malnutrition: Time for a change

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## Introduction

All children with moderate wasting, or with moderate or severe stunting, have in common a higher risk of dying and the need for special nutritional support. In contrast to children suffering from life-threatening severe acute malnutrition, there is no need to feed these children with highly fortified therapeutic foods designed to replace the family diet. Their dietary management should be based on improving the existing diets by nutritional counseling and, if needed, by the provision of adapted food supplements providing nutrients that cannot be easily provided by local foods. Children with growth faltering would also benefit from the same approach.

In contrast to severe acute malnutrition, management of moderate malnutrition (defined by either moderate wasting or stunting) has remained virtually unchanged over the last 30 years. Two broad approaches are used. In most situations, dietary counseling is given to families on the assumption that they have access to all foods needed for feeding their children but lack the knowledge of how best to use them. In the context of food insecurity, or of insufficient access to nutrient-dense foods, food supplements, usually fortified blended flours, are given.

Evaluation of programs for the management of moderate malnutrition so far has yielded mixed results. The review by Ann Ashworth and Elaine Ferguson shows that the dietary advice given is often nonspecific, i.e., not really different from the advice given to well-nourished children, and that the impact of large-scale programs is often uncertain [1]. Doubts about

the efficacy of supplementary feeding programs using blended flours have been raised repeatedly over the past 25 years [2, 3]

Many reasons can explain the apparent lack of efficacy of these programs. Diets recommended as part of counseling often have a low nutritional density, insufficient to promote recovery. Often, when nutrient-dense foods are recommended, they are expensive and not really accessible to poor families. When food supplements are given, they are usually made with the cheapest sources of energy (cereals) and proteins (legumes) and often have no added fat. Such supplements often have a nutritional profile (high protein, low fat, and high dietary fiber and antinutrient content) that does not seem the best adapted to promote rapid growth of malnourished children [4].

Clearly, it is time for a change. Children with moderate malnutrition should get the foods that provide all the nutrients they need for full recovery, not just the food choice that represents the cheapest option to provide them energy and proteins. Their efficacy to promote recovery and their accessibility must be the first criteria to consider when making a choice.

Improving the diets of children with moderate malnutrition will not be easy to achieve. First, there are still many uncertainties about what nutrients children with moderate malnutrition, particularly stunted children, need for recovery, as highlighted in the article by Professor Mike Golden [5]. The possible negative effect of antinutrients, which are present in high concentrations in cereals and even higher concentrations in legumes, will complicate the picture, as described in the article by Kim Michaelsen and colleagues [6]. Second, diets with higher nutrient density and lower antinutrient content, which are more appropriate for children with moderate malnutrition, either have a high level of animal-source foods or have to be made from highly processed plant foods, which makes them more expensive than currently recommended diets. Moreover, in the present context of the emerging burden of obesity in many poor countries, promoting diets leading to increased weight is not satisfactory, especially in areas of high

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stunting prevalence [7]. It is important that proposed diets have a limited effect on deposition of fat tissue, promote lean tissue synthesis, and lead to improved functional outcomes, such as improved cognitive development. In this respect, attention should be paid to the essential fatty acid contents of diets, so far a neglected aspect of the management of moderate malnutrition.

There are clear indications from the papers presented at this meeting on how to improve current programs. Dietary counseling should move away from general "fit-for-all" recommendations and should provide specific suggestions that are nutritionally adequate and locally adapted. Program implementers should make sure that the recommended diets are nutritionally adequate and contain all nutrients needed for growth. Adapted computer software can be used to make this assessment more rigorous [8].

Food supplements should be considered in case of food insecurity, or, in a context of poverty, if these supplements represent a less expensive option for providing all nutrients needed by children. The article by Saskia de Pee and Martin Bloem [4] presents several possible options.

Too many uncertainties were highlighted in this meeting to be able to propose an optimal diet for all children with moderate malnutrition in the short term. Enough information is available, however, to improve the current situation and to start a process of continuous evaluation and improvement of possible treatment options for moderate malnutrition. We hope this meeting will contribute to achieving these objectives, which are within our reach and will contribute to reaching Millennium Development Goals 1 and 4.

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