

# Overview of Complementary Feeding (Weaning) in Countries of Asia

## Introduction

Asia contains both highly developed and developing countries and so there is a wide spectrum of nutritional problems in children receiving complementary foods reflecting the different socioeconomic and cultural backgrounds. Some countries such as Japan, Taiwan, and Korea have published detailed guidelines or recommendations or both for weaning but others, most of which are developing countries, have not done so. This diverse background leads to many potential research questions concerning complementary feeding in the countries of Asia. The following 2 research issues are explored in more detail.

## 1. The Prevalence and Prevention of Micronutrient Deficiencies

In children of the developing countries of Asia, intakes of iron and zinc are often below the daily intakes recommended in developed countries.<sup>1</sup> Cereals or starchy roots and tubers are commonly used during early infancy as a basis for gruels, which have a low-energy density and micronutrient content.

Pilot, carefully monitored, studies of strategies to enhance the micronutrient bioavailability and content of the plant-based com-

plementary foods used are required. Several strategies may be assessed.<sup>2,3</sup> Germination, fermentation, and soaking can be used to enhance bioavailability of iron and zinc by reducing the content of phytic acid. Ascorbic acid is a good enhancer and may be added in the home as fruit/fruit juices. Animal and fish proteins enhance the absorption of iron, zinc, and copper,<sup>4</sup> so that inclusion of even small amounts of meat, poultry, or fish (as dried flours) in complementary foods is an advantage.

In the developed countries of Asia, however, micronutrient deficiencies are more likely to be attributable to a low consumption of iron- and zinc-rich foods such as meat or fortified foods,<sup>5</sup> or alternatively an excessive reliance on foods low in these nutrients, eg, formulas containing small amounts of zinc.<sup>6</sup> More national studies of the prevalence of micronutrient deficiencies in the developed countries of Asia are required. These surveys should assess the size of any problem and its associated factors.

In both developing and developed countries, efficacy and effectiveness trials are needed to assess various intervention strategies that can be applied to communities with varying food customs, food availability, and price. It is probable that the most effective strategy will vary in different communities.

## 2. Secular Trend in the Prevalence of Allergic Disease—Possible Causes, Prevention, and Management

In the past 20 to 30 years, the prevalence of allergies has increased, particularly among children in highly developed countries,<sup>7</sup> including Japan.<sup>8</sup> Hypotheses to explain this trend<sup>9,10</sup> include a decline in exposure to infections, altered intestinal and other commensal flora and environmental stimuli by immunogenic saprophytic species (eg, mycobacteria<sup>11</sup>), diphtheria, pertussis, tetanus, and other vaccinations. Many of these changes are occurring in Asian countries as they experience rapid economic development so that an increase in allergic disease might be expected.

Studies are desirable to determine if there is an actual increase in allergic disease and to determine the factors associated with or responsible for it. The opportunity to do this in developed countries has already more than likely been lost. If an increasing prevalence is confirmed, attention to the dietary factors currently thought to be important will be necessary, eg, breastfeeding, use of "hypoallergenic formulas," the timing of the introduction of egg, citrus fruit, and nuts in infants with a high-risk (positive family history) of allergy. The evidence for effective prevention by these dietary manipulations is far from clear, as study reports conflict.<sup>12,13</sup> The evaluation of any new policies introduced to Asian countries might provide an opportunity to resolve some of these conflicts of evidence.

### Research Questions

In summary, 2 research questions relevant to Asian countries are important:

1. The prevalence and prevention of micronutrient deficiencies.
2. Secular trend in the prevalence of allergic disease—possible causes, prevention, and management.

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*Pediatrics* 2000;106;1274

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