

Improving Young Child Feeding in Eastern and Southern Africa

Household-Level Food Technology

Proceedings of a workshop
held in Nairobi, Kenya,
12-16 October 1987

Proceedings



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Improving Young Child Feeding in Eastern and Southern Africa

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Editors: D. Alnwick, S. Moses,
and O.G. Schmidt



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Abstract

The weaning period, that is the period in a young child's life when supplementary foods are introduced to complement breast milk, poses great nutritional risk to children in developing countries. By the end of the second year of life, one-third of children in eastern and southern Africa are chronically malnourished. The following factors contribute to the growth faltering commonly observed in weaning-age children: low nutrient intake, high incidence of diarrheal disease (often caused by contaminated weaning foods), and recent declines in duration and intensity of breastfeeding.

Food scientists, nutritionists, and health planners working in Africa and South Asia met in an international workshop to examine household-level food technologies that hold promise for improving nutrition of infants and young children. After reviewing current knowledge of breastfeeding and weaning practices in eastern and southern Africa, participants discussed the use in weaning diets of fermented foods and germinated flour, for both improved nutrient intake by young children and decreased risk of food contamination. Research that should be conducted into the effectiveness of the food technology was identified and its diffusion at the community level discussed.

This publication contains the proceedings, conclusions, and recommendations of the workshop. It is directed at scientists and health planners who are involved in nutrition research and developing programs to improve feeding of infants and young children in developing countries.

Résumé

Le sevrage, c'est-à-dire la période où l'on commence à donner des aliments solides à un jeune enfant en complément du lait maternel, présente de graves risques nutritionnels pour les enfants dans les pays en développement. Dès la fin de leur deuxième année, le tiers des enfants en Afrique orientale et australe souffrent de malnutrition chronique. Les facteurs suivants sont à l'origine du retard de croissance que l'on retrouve couramment chez les enfants en âge d'être sevrés : carence nutritionnelle, forte prévalence des maladies diarrhéiques (qui s'expliquent souvent par la contamination des aliments) et diminution récente de la durée et de l'intensité de l'allaitement maternel.

Des spécialistes des sciences de l'alimentation, des nutritionnistes et des planificateurs de la santé travaillant en Afrique et en Asie du Sud se sont réunis dans le cadre d'un atelier international afin d'examiner des technologies alimentaires applicables au niveau des ménages qui semblent prometteuses pour améliorer la nutrition des nourrissons et des jeunes enfants. Après avoir examiné les connaissances actuelles en matière d'allaitement au sein et les pratiques de sevrage en Afrique orientale et australe, les participants ont discuté de l'utilisation, au cours du sevrage, d'aliments fermentés et de farine germée, tant pour améliorer l'apport nutritionnel chez les jeunes enfants que pour diminuer les risques de contamination des aliments. Ils ont également discuté des recherches qu'il y aurait lieu d'entreprendre sur l'efficacité des technologies alimentaires et sur leur diffusion dans la collectivité.

Cette publication fait un compte rendu des discussions de l'atelier et présente ses conclusions et ses recommandations. Elle s'adresse aux scientifiques et aux planificateurs de la santé qui participent à des recherches en matière de nutrition et à l'élaboration de programmes visant à améliorer l'alimentation des nourrissons et des jeunes enfants dans les pays en développement.

Resumen

El período de destete, es decir, aquel período en la vida de un niño en que se introducen en su dieta alimentos suplementarios para complementar la leche materna, representa un gran riesgo nutricional para los niños de países en vías de desarrollo. Hacia el final de su segundo año de vida, un tercio de los niños en África oriental y del sur muestran señales de malnutrición crónica. Los siguientes factores contribuyen al crecimiento vacilante que se observa comúnmente en los niños que se encuentran en edad de dejar la lactancia materna: baja ingestión de nutrientes, alta incidencia de diarrea (a menudo causada por alimentos para el destete contaminados), y nuevas disminuciones en la duración e intensidad de la alimentación proveniente del pecho de la madre.

Científicos del campo de los alimentos, especialistas en nutrición y planificadores de la salud que trabajan en África y en el Sur de Asia se reunieron en un taller internacional para examinar las tecnologías de alimentos que se utilizan en el hogar y que prometen buenos resultados en el mejoramiento de la nutrición de lactantes y niños pequeños. Después de analizar el conocimiento que existe actualmente sobre la alimentación recibida a través del pecho de la madre y las prácticas que se utilizan para el destete en el oriente y sur de África, los participantes discutieron el uso en dietas para el destete de alimentos fermentados y harina germinada para que los niños puedan ingerir nutrientes mejorados y haya una disminución en el riesgo causado por la contaminación de los alimentos. Se identificó la investigación que se debe realizar sobre la efectividad de las tecnologías de alimentos y se discutió su difusión en el seno de la comunidad.

Esta publicación contiene las actas, conclusiones y recomendaciones del taller. Está dirigida a científicos y planificadores de la salud que participan en la investigación nutricional y en programas de desarrollo para mejorar la alimentación de lactantes y niños en los países en desarrollo.

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THE COMPLEMENTARY FOODS PROBLEM

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***Abstract** In this paper, an attempt is made to distinguish the term "weaning" from the related processes of "complementation" and "sevrage," or cessation of breastfeeding. In the feeding of young children in rural Africa, it is not the "weaning problem" but rather the problem of complementation that should be of primary concern. Although recognizing the importance of complementary foods in infant feeding, this paper discusses the dangers that arise from an improper administering of these foods, and warns against an overly zealous promotion of the new technologies discussed at the workshop.*

Most nutritionists would agree to an approximate definition of the term "weaning" as "the process of replacing breast milk with other foods." The word is commonly used, however, to suggest two additional processes: the complementation of full breastfeeding with other foods, and the complete cessation of breastfeeding. (Some use the French word "sevrage" to denote this latter process.) The word "wean" is thus misused, perhaps because of the convenience of its compound forms, i.e., "weaning age child" and "weaning foods problem." Serious errors in health policy and practice result, however, from such inaccurate use of terminology: a lack of clarity here can have the effect of hiding or confusing the true causes of problems in nutrition.

To illustrate the definitional issues involved, let me take the example of energy requirement. One must compare the child's increasing nutrient needs with the mother's ability to produce breast milk (Fig. 1). In this figure, no numbers have been placed on either axis: such numbers are not needed to illustrate the principles concerned.

One curve illustrates the way in which the child's energy needs increase with age. The shape is not important, except insofar as the curve rises with age while its slope declines. A second curve illustrates the change in the amount of milk the mother can produce as the child's age increases. Under normal circumstances, the two curves tend to follow each other rather closely for a matter of months. At some point, this ceases to be true, as the child's energy needs outstrip milk production.

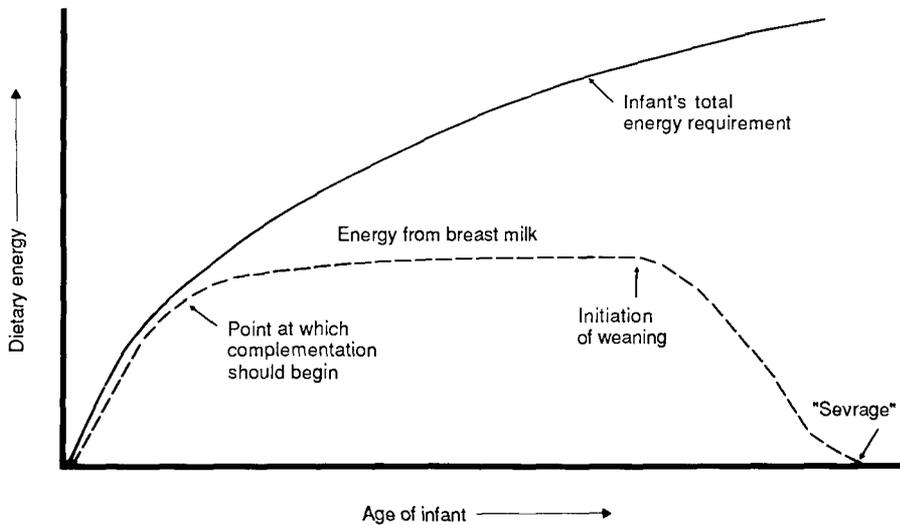


Fig. 1. Relationship over time between an infant's total energy requirement and optimal breast-milk consumption.

At this point, the child will decrease his or her activity level, cease to grow as fast, or both, unless some additional source of energy is provided. It is important to recognize that the food providing this energy need not replace breast milk. Studies in the Gambia showed that, as long as this additional food - let us call it "complementary food" - is kept in short enough supply, the child continues to suck the breast as much as before, and the hormonal system that adjusts breast milk production to match demand remains relatively undisturbed. If the amount of food assimilated by the child continues to increase at the same pace as his or her energy needs, then breast milk production stabilizes near the maximum level that the mother is able to produce.

At some later point, the mother can reduce this level of breast milk production by allowing less sucking, offering more food, or both. This may or may not be to wean the child away from the breast: she may, for example, simply wish to spend less time with the child. Of course, reduced breast milk production will always result from a reduction in sucking, irrespective of any conscious decision. Eventually, however, the decision to wean must be made and it is at this point that the weaning process truly begins. In rural Africa, a delay in the initiation of weaning has many advantages, the two most important of which are

- the likelihood that continued breastfeeding will lengthen the period of lactation amenorrhea and thus assist with birth spacing; and
- the likelihood that the nutritive value of breast milk will be greater than that of the food that replaces it.

The weaning process can proceed gradually or take place abruptly, as the mother and child like. Extremes at either end of the spectrum appear to be fairly common. A problem develops only when weaning takes place too abruptly for adaptation on the part of the child; in such a case, he or she may not be able to eat replacement foods of adequate nutritional value. This can be said to be a true "weaning foods problem," and its importance has been recognized for many decades in pediatric and nutrition literature.

When, however, a child of 2-3 years is abruptly weaned, this does not constitute a "weaning foods problem": by this age, the child is able and willing to eat the family food. No doubt this food often does not meet ideal nutritional standards for a child of that age; the really severe problems occur earlier, however, before the child is old enough to eat thick porridge and other family foods. When referring to this earlier period, it would be more appropriate to speak of a "complementary foods problem."

In some rural areas, particularly in South Asia, complementation begins too late and the amounts given are too small. The gradual undernutrition that results has received a great deal of attention. In other areas - in much of Indonesia, for example - complementation with "soft foods" begins far too early. It is difficult to generalize about Africa: although one can find either extreme, most mothers do seem to begin "solid feeding" between 3 and 9 months of age.

As development takes place, however, it brings with it an increase in the availability of feeding bottles; the dangers of premature supplementation then become of greater importance to public health. These dangers have received far too little attention: the importance of early complementation (at 4-6 months of age) is often stressed in health-worker training and in health-education messages; rarely, however, are warnings issued against a precipitate or excessive provision of complementary food.

When complementary food is given to the child before his or her needs exceed the mother's breast-milk production, the child will suck less at the breast; in this way, the additional food replaces rather than complements breast milk. The nutritional quality of the child's diet is thus lowered, and he or she may be confronted with diarrheal and other pathogens before the immune system is ready to cope with them. Premature supplementation also has a drastic effect on lactation amenorrhea (McCann et al. 1981) and, consequently, on birth spacing. Because of the child's innate need for a certain amount of sucking, the use of feeding bottles may have an especially deleterious effect.

Data from the Yemen Arab Republic (Yemen 1980) illustrate the effect of a radical and rapid increase in premature supplementation. Although, on average, rural children are still breastfed for 1 year, they begin to receive bottle feeds at a median age of 2 months (Greiner 1983). Since only about 2% of couples use any form of modern contraception (Suchindran and Adlakha 1979), birth spacing has been drastically affected: many women now have a child every year or 18 months. The bottle-fed Yemeni child, therefore, has not only to survive his or her poor and probably contaminated diet in the early months of life; while still too young to eat family foods, this child must also survive the complete withdrawal of the breast when the

Table 1. Infant and young-child mortality rates in the Yemen in relation to birth spacing.

Length of the preceding birth interval (months)	IMR ^a	YCMR ^b
< 24	227	141
24-35	109	18
36-59	83	2
> 59	56	3

^aInfant mortality rate: number of deaths under 1 year of age per 1000 live births.

^bYoung child mortality rate: number of deaths among children between 1 and 5 years of age per 1000 children of that age.

mother all too soon becomes pregnant again; several months later, the child will have to survive the third blow, when much of the mother's attention is withdrawn in favour of the newborn.

Tragically, many of these children do not survive. In a country with moderately high, well-distributed incomes, the infant mortality rate is 157/1000, and the young child mortality rate is 95/1000 (Suchindran and Adlakha 1979). The interrelation between these mortality rates and degrees of birth spacing is telling (Table 1). The fact should be noted that the effect on young child mortality is even greater than that on infant mortality: it would be fair to say that were they able to practice birth spacing, Yemeni women would be able to keep their young children alive. In the absence of modern contraception, this adequacy of birth spacing is largely dependent on the continuance and the preponderance of breastfeeding in the child's regimen.

In conclusion, it would seem that our challenge is to assist mothers to feed the "complementation-age" child adequately. This necessitates a provision of the correct amount of complementary food at the correct time. In our enthusiasm for the new technologies discussed at this workshop, we dare not cause in Africa a tragedy similar to that taking place in the Yemen.

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