



SPECIAL ARTICLE

# The importance of maternal nutrition during breastfeeding: Do breastfeeding mothers need nutritional supplements?☆



Susana Ares Segura<sup>a,\*</sup>, José Arena Ansótegui<sup>b</sup>, N. Marta Díaz-Gómez<sup>c</sup>, en representación del Comité de Lactancia Materna de la Asociación Española de Pediatría<sup>◇</sup>

<sup>a</sup> Servicio de Neonatología, Hospital Universitario LA PAZ, Paseo de la Castellana 261, Madrid 28046, España

<sup>b</sup> Pediatra, Neonatólogo, Hospital de Donostia, San Sebastian

<sup>c</sup> Pediatra, Profesor titular de universidad en Universidad de La Laguna, Tenerife

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**Abstract** Breastmilk is the best food for newborns and infants. The nutritional stores of a lactating woman may be more or less depleted as a result of the pregnancy and the loss of blood during childbirth. Lactation raises nutrient needs, mainly because of the loss of nutrients, first through colostrum and then through breastmilk.

Breastmilk volume varies widely. The nutrients present in this milk come from the diet of the mother or from her nutrient reserves.

The conversion of nutrients in food to nutrients in breastmilk is not complete. To have good nutritional status the breastfeeding woman has to increase nutrient intake. Human breastmilk has a fairly constant composition, and is only selectively affected by the diet of the mother. The fat content of breastmilk varies somewhat. The carbohydrate, protein, fat, calcium and iron contents do not change much, even if the mother is short of these in her diet. A mother whose diet is deficient in thiamine and vitamins A and D, however, produces less of these in her milk. The mother should be given advice on consuming a mixed diet. At each postnatal visit, both the mother and the baby should be examined, and advice on the diets of both mother and infant should be provided. A satisfactory gain in the infant's weight is the best way to judge the adequacy of the diet of the infant. Mothers should not receive less than 1800 calories per day.

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\* Corresponding author. Tel.: +34917277416.

E-mail address: [susana.ares@salud.madrid.org](mailto:susana.ares@salud.madrid.org) (S. Ares Segura).

◇ Other authors members of the Breastfeeding Committee of the Spanish Association of Pediatrics are presented in [Appendix A](#).

**PALABRAS CLAVE**

Nutrición;  
Lactancia materna;  
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Suplementos  
nutricionales

## La importancia de la nutrición materna durante la lactancia, ¿necesitan las madres lactantes suplementos nutricionales?

**Resumen** La leche materna es el mejor alimento para los recién nacidos y lactantes. Las reservas nutricionales de una mujer lactante pueden estar más o menos agotadas como resultado del embarazo y la pérdida de sangre durante el parto. La lactancia plantea necesidades nutricionales especiales, principalmente debido a la pérdida de nutrientes a través de la leche materna.

El volumen de leche materna varía ampliamente. Los nutrientes presentes en la leche proceden de la dieta de la madre o de sus reservas de nutrientes.

Para conseguir un buen estado nutricional durante la lactancia, la mujer tiene que aumentar la ingesta de nutrientes. La leche materna tiene una composición bastante constante y la dieta de la madre solo afecta a algunos nutrientes. El contenido de grasa de la leche materna varía con la dieta. El contenido de hidratos de carbono, proteína, calcio y hierro no cambia mucho incluso si la madre ingiere poca cantidad de estos en su dieta. Sin embargo, si la dieta de una madre es deficiente en vitaminas hidrosolubles y vitaminas A y D, su leche contiene menos cantidades de estos nutrientes. En cada visita posnatal tanto la madre como el niño deben ser examinados, y se debe proporcionar asesoramiento sobre la alimentación saludable. Durante la lactancia se debe evitar una dieta que aporte menos de 1.800 cal al día.

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## Introduction

Breast milk must guarantee the adequate nutrition of the infant as a continuation of intrauterine nutrition, and both the mother's nutritional status as well as her diet may influence breast milk composition, and therefore nutrient intake in the infant.

Nutritional requirements are higher in infancy than in any other stage of development, and there is evidence that the composition of breast milk changes with time to adjust to the changing needs of the child.<sup>1-4</sup>

Although there is a vast body of literature on the physiology and disease of lactating women, the professionals that care for them often lack adequate knowledge about their nutritional requirements.<sup>5</sup> This document aims to offer updated information on the nutrition of the breastfeeding mother to facilitate the development of health care protocols based on current knowledge.

The nutritional requirements of women increase during pregnancy and lactation (Table 1).<sup>1</sup> During lactation, the mammary glands have a degree of metabolic autonomy that guarantees adequate milk composition. Unless they are extremely malnourished, all mothers can produce milk in appropriate amounts and of appropriate quality.

Variations in the diet of the mother may result in changes in the fatty acid profile and levels of certain micronutrients, but they are not associated with the volume or quality of the milk produced. The milk of all mothers, even those that are malnourished, has an excellent nutritional and immunological quality. The mother's body always prioritises the needs of the baby, and consequently most nutrients, such as iron, zinc, folate, calcium and copper continue to be excreted in breast milk in adequate and constant amounts, at the expense of maternal stores. In the event of famines and

disasters, and when there is risk of child malnutrition, the approach recommended by the WHO is to support breastfeeding, which guarantees the correct development of the baby, and to supplement the diet of the mother.<sup>6-8</sup>

The energy, proteins and nutrients in human milk come from the diet as well as maternal body stores. Women that do not obtain sufficient nutrients from dietary sources may be at risk of deficiency in some minerals and vitamins that perform important functions. These deficiencies can be prevented if the mother improves her diet or takes nutritional supplements.

The age, baseline postpartum weight, level of activity and individual metabolism will influence the amount of food each woman needs to consume to achieve an optimal nutritional status and an adequate milk supply. The duration and intensity of breastfeeding also have a significant impact on maternal nutritional requirements, but are rarely taken into consideration.<sup>9</sup>

The prevalence of nutrient deficiencies varies based on geographical region, culture, dietary habits and socioeconomic level.<sup>10-13</sup> In Spain, micronutrient deficiencies are more common than energy or protein deficiencies. The content of some nutrients in human milk depends on the mother's dietary intake, especially if her diet is inadequate, and in most cases these deficits can be corrected by means of supplementation.<sup>14</sup>

The concentration of water-soluble vitamins in breast milk is highly dependent on maternal intake levels. The fat-soluble vitamin concentrations depend mostly on maternal stores, although they may be increased by exogenous sources.

It has been demonstrated that maternal requirements may also vary through different stages of lactation.<sup>15</sup> An adequate energy intake and a balanced diet including fruits,

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