

# MAIN COMPLICATIONS RELATED TO EARLY WEANING: AN INTEGRATIVE REVIEW

## PRINCIPAIS COMPLICAÇÕES RELACIONADAS AO DESMAME PRECOCE: UMA REVISÃO INTEGRATIVA

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**Abstract: Introduction:** Breastfeeding is considered the ideal form of infant nutrition, especially in the first months of life. However, early weaning, defined as the interruption of breastfeeding before six months of life, is still common and can result in several complications Of health for the child. Factors such as return to work, pain during breastfeeding and lack of social support contribute to early weaning, Negatively impacting child health and development. **Objective:** To analyze the main complications arising from early weaning and understand their Impacts on health, growth and child development. **Method:** An integrative literature review was conducted between October and November 2024, with research in the SciELO, VHL and PubMed databases, using descriptions related to breastfeeding, weaning and associated complications, such as Respiratory diseases and infections, in English, Portuguese and Spanish. Of the 1354 articles found, after inclusion and exclusion criteria, four studies Were selected, covering countries such as Denmark, Pakistan and the United States. **Results:** The studies analyzed samples of children aged Six months to five years, indicating that early weaning is associated with an increase in the incidence of respiratory infections, allergies and disabilities Nutritional. **Conclusion:** Early weaning represents an important risk to child health, with the occurrence of complications that compromise the Development and increase the burden on the public health system. The promotion of prolonged breastfeeding and adequate support for mothers are essential To prevent these complications and improve the quality of life of children.

**Keywords:** Weaning; Breastfeeding; Respiratory Diseases; Allergy and immunology; Infections; Risk Factors.

## INTRODUCTION

Breastfeeding is an essential practice for the healthy development of children, being considered the ideal method of infant nutrition in the first years of life. According to the Brazilian Ministry of Health<sup>(1)</sup>, it is recommended that breastfeeding be exclusive until six months of age, and can be maintained up to two years or more, with the introduction of complementary foods from the sixth month. This practice is classified into several forms, such as exclusive, predominant, complemented and mixed breastfeeding<sup>(2)</sup>, which reflects the different approaches to infant feeding based on the consumption of breast milk and other foods.

The benefits of breastfeeding are widely documented in the scientific literature, covering both the health of the child and the mother. Children breastfed exclusively with breast milk in the first six months of life have a lower risk of developing various diseases, such as respiratory infections, diarrhea and allergies<sup>(3)</sup>. In addition, breast milk is rich in immunological substances, such as the IgA antibody, which protects against microorganisms that affect the respiratory and digestive system, giving the lactant an important defense against infectious agents present in the mother's environment<sup>(1)</sup>.

For the mother, breastfeeding also brings numerous benefits. Exclusive breastfeeding helps in the return of the uterus to its normal size, in postpartum weight loss and in the prevention of diseases such as breast cancer, ovarian cancer and type 2 diabetes<sup>(1,4)</sup>. The production of hormones such as prolactin and oxytocin, which are stimulated by breastfeeding, contribute to milk production and uterine health, in addition to reducing the risk of maternal anemia<sup>(5,6)</sup>.

However, despite the widely recognized benefits, early weaning, characterized by the interruption of breastfeeding before six months of life, is still a frequent problem. Factors such as pain during breastfeeding, postpartum depression, return to work and lack of support network contribute to the practice of early weaning<sup>(7,8)</sup>. The early introduction of milk formulas and other foods can also be driven by mistaken beliefs, such as that breast milk is insufficient for the infant<sup>(9,10)</sup>.

This early weaning may have long-term negative implications for both child health and public health. The absence of exclusive breastfeeding increases children's vulnerability to infectious diseases, especially respiratory infections, such as pneumonia, bronchitis and asthma, which are among the main causes of child hospitalization<sup>(10-12)</sup>. It is estimated that exclusive breastfeeding up to six months of life could prevent about 13% of deaths from preventable causes in children under five years of age worldwide<sup>(1)</sup>.

Given this scenario, this study aims to analyze the main complications arising from early weaning and understand their impacts on health, growth and child development.

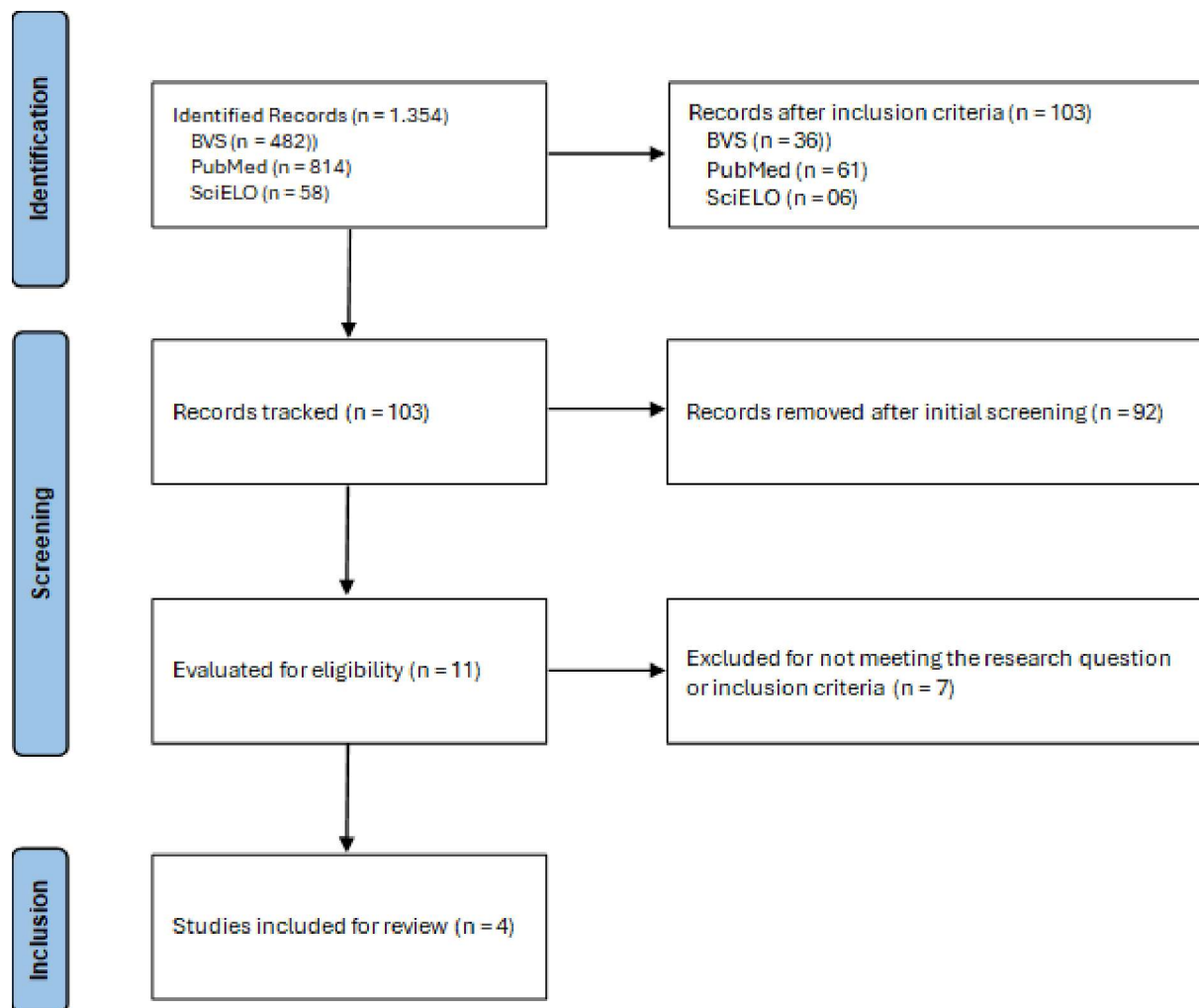
## METHODS

This is an integrative literature review conducted between September and October 2024, using descriptors selected from the Descriptors in Health Sciences/Medical Subject Headings (DeCS/MesH). The data were collected in the Scientific Electronic Library Online (SciELO), Virtual Health Library (VHL) databases using the following search logic: ((Weaning) AND (Breastfeeding)) AND ((Respiratory Diseases) OR (Allergy and Immunology) OR (Infections) OR (Risk Factors)); and in the PubMed database, which, in turn, used the descriptors with the following search logic: ((Weaning) AND (Breast) Feeding) AND ((Respiratory Tract Diseases) OR (Allergy and Immunology) OR (Infections) OR (Risk Factors)). In all databases, the following research question was taken into consideration: "What are the main complications arising from early weaning from breastfeeding, and how do these complications impact health and child growth and development?".

The inclusion criteria considered articles published between 2019 and 2024 in English, Portuguese and Spanish, with full availability of the articles, and that answered the guiding question. The exclusion criteria involved studies not related to breastfeeding, qualitative studies, reviews, case reports, theses and dissertations. For the tabulation, a table was used containing the database, the title of the work, the link of the occurrences, the type of study, the year and the language of publication.

The results of the identification and selection process were organized in a PRISMA flowchart, detailing each step of the process and the number of studies included and excluded in each phase.

#### **Flowchart 1 - PRISMA Process for Study Identification, Screening and Selection**



Source: Elaborated by own autor, 2024.

## RESULTS

1354 articles were identified, of which 482 articles in VHL, 58 in SciELO and 814 in Pubmed. After screening, the final selection consisted of 04 articles, 01 from VHL and 03 from PubMed, which were read in full to verify if they had been published between 2019 and 2024 and if they answered the research question. The articles were read and evaluated independently, and only those that met the criteria previously defined for this study were selected.

The selected works cover countries such as Denmark, Pakistan and the United States. Observational studies with a cohort or case-control approach predominated, with the aim of identifying associations between breastfeeding, perinatal factors and various childhood health conditions. The samples were composed of children of different age groups, from birth to five years of age, allowing an analysis of the impact of breastfeeding throughout the first years of life. In total, 8,113 children were analyzed.

The duration and exclusivity of breastfeeding can be better quantified in study 03 (13), with 38.5% of children exclusively breastfed for six months, in addition, 68.5% of the participants

182

had inadequate weaning age, most with late weaning. The studies also considered sociodemographic variables, including socioeconomic status, parental education and sanitation conditions, which enriches the analysis of risk factors associated with early weaning and child health complications.

**Table 1 - Profile of the Included Studies.**

<b>ID</b>	<b>Title, Quote</b>	<b>Type, sample</b>	<b>Objective</b>	<b>Conclusino</b>
01	Breastfeeding and Infections in Early Childhood: A Cohort Study (Amamentação e infecções na primeira infância: um estudo de coorte)  (14)	Cohort, 815 mother-infant pairs. Children followed from birth to 36 months.	In a population-based birth cohort, to investigate whether the duration of breastfeeding is associated with the number of hospitalizations due to infection and symptoms of infection in the household.	The results suggest that increasing the duration of breastfeeding, especially exclusive breastfeeding, protects against infections requiring hospitalization in the first year of life, but not hospitalizations or symptoms of infection in the household after the first year.
02	Early Life Microbiota Colonization at Six Months of Age: A Transitional Time Point (Colonização da microbiota no início da vida aos seis meses de idade: um ponto de transição)  (15)	Observational, 114 children analyzed up to six months of age.	To explore the prenatal and postnatal factors that influence the composition of the infant gut microbiota at six months of age.	The findings showed that, at this stage of life, there is no single factor capable of distinctly affecting the development of the intestinal microbiota of infants. Instead, there appears to be a complex multifactorial interaction between maternal and neonatal factors that determine a unique microbial niche in the gastrointestinal tract.
03	Malnutrition in children under five years in a squatter settlement of Karachi: a case-control study (Desnutrição em crianças menores de cinco anos em um assentamento de ocupação de Karachi: um estudo de caso-control)  (13)	case-control, 280 children under five years of age (140 cases and 140 controls).	To determine the characteristics of malnourished children in an urban settlement in Karachi, Pakistan.	Malnutrition in children under five years of age in the sample is associated with low family income, low paternal education, poor sanitation facilities, lack of exclusive breastfeeding and inappropriate weaning age. Implementation of poverty reduction programmes, provision of affordable sanitation, community-based breastfeeding and educational intervention for weaning are urgently needed to efficiently improve the nutritional status of children.
04	Infant feeding practices and asthma in children aged 6 months to 5 years using a propensity	case-control, 6,904 children aged six months to five years (3,452	To examine the association between exclusive breastfeeding, early introduction of	Public health systems should continue to recommend implementation of the World Health

score approach (Práticas alimentares infantis e asma em crianças de 6 meses a 5 anos usando uma abordagem de escore de propensão)  (16)	asthmatic and 3,452 non-asthmatic).	formula feeding, early weaning, and asthma in children aged six months to five years in a sample of noninstitutionalized American children using a propensity score approach.	Organization's exclusive breastfeeding guideline in developed countries. Interventions for asthma in children under two years of age should continue to emphasize exclusive breastfeeding to reduce the incidence of childhood asthma.
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Source: Elaborated by own author, 2024.

## DISCUSSION

It was possible to identify significant patterns and divergences on the effects of breastfeeding and the impact of early weaning on child health. The first and fourth studies suggest that exclusive breastfeeding has an important protective role, reducing the need for hospitalizations for infections in the first year of life and reducing the incidence of childhood asthma<sup>(14,16)</sup>.

In contrast, the second study that analyzes the intestinal microbiota of the first years of life, with regard to the type of feeding, observed a lower alpha diversity in babies who were exclusively breastfed. On the other hand, babies breastfed in a non-exclusive way showed an excessive increase in the populations of Ruminococcaceae and Flavonifractor. However, there is not a single factor capable of differently affecting the development of the intestinal microbiota of infants<sup>(15)</sup>. In turn, the third study expands the analysis by associating child malnutrition with early weaning from breastfeeding, which agrees with several studies published over the years<sup>(9,13,17,18)</sup>.

The complications identified in the reviewed studies emphasize the relevance of breastfeeding to child health. Hospitalizations for infections, increased risk of asthma and malnutrition are complications that directly affect child growth and development, compromising the quality of life and increasing the demand for health services<sup>(13,14,16)</sup>.

Recent studies support the role of breastfeeding in providing immunoglobulins and essential nutrients for immune development<sup>(19)</sup>, factors that explain the protection against infections observed in the first study<sup>(14)</sup>. However, these complications not only affect the child's health, but also have long-term consequences, such as greater vulnerability to chronic diseases<sup>(20,21)</sup>.

The results of the studies also have important implications in the context of public health, especially with regard to the impact of early weaning. The reduction of asthma and hospitalizations for infections in breastfed children exclusively suggests that the promotion of breastfeeding can be an effective strategy to prevent such complications<sup>(14,16)</sup>. In addition, the third study shows how exclusive breastfeeding can help reduce child malnutrition in vulnerable populations, emphasizing the importance of breastfeeding support policies in communities with low socioeconomic

level<sup>(13)</sup>.

These findings reinforce the Ministry of Health's recommendation to promote exclusive breastfeeding in the first six months of life and, ideally, prolonged breastfeeding until two years of age<sup>(1,22)</sup>. It is worth noting that the health professional, through guidance and direct support, helps mothers and families to understand the benefits of breast milk and to overcome possible initial challenges of breastfeeding<sup>(23)</sup>. For this promotion to be effective, communication between nurse and patient must be clear, empathetic and welcoming, ensuring that mothers feel safe and encouraged in their breastfeeding journey<sup>(24)</sup>.

Despite the relevant findings, the reviewed studies have some limitations that deserve consideration. Most studies are of time clippings, which can make it difficult to establish a definitive cause and effect of early weaning. In addition, some studies, such as the second and third, use small and relatively homogeneous samples, which may limit the generalization of the results. Still, although the diversity in the groups analyzed is low, they reflect an idea accepted by several authors, who associate early weaning with disorders related to child growth and development, as well as complications in adulthood <sup>(21,22,25,26)</sup>

## CONCLUSION

In conclusion, the analysis of the reviewed studies reinforces the importance of exclusive and prolonged breastfeeding for child health, especially in the prevention of infections, asthma and malnutrition. The findings point to a significant relationship between the practice of breastfeeding and a lower incidence of serious complications during the first years of life, with direct implications for public health policies that encourage breastfeeding. Although the studies have methodological limitations, such as reduced samples and lack of diversity, they still reflect an idea accepted by several authors.

However, there is still a need for more longitudinal research that deepens the understanding of the long-term effects of early weaning. In addition, the results suggest that socioeconomic and educational interventions aimed at vulnerable groups can enhance the benefits of breastfeeding, reinforcing it as an essential practice for the healthy development of the child.

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