

ORIGINAL ARTICLE

# Overview on the recommendations for breastfeeding and COVID-19

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## Abstract

**Introduction:** Human infection caused by the new Coronavirus is a public health emergency of international importance, whose clinical spectrum ranges from mild symptoms to severe acute respiratory syndrome. However, there is weak information about the clinical presentations of Coronavirus in newborns and children.

**Objective:** To describe the recommendations about breastfeeding during SARS-CoV-2 infection.

**Methods:** Scope review study.

**Results:** The discussion on viral transmission through breastfeeding is controversial and the recommendations vary according to experts of different countries.

**Conclusion:** The scientific knowledge currently available does not allow to accurately inform the best conduct in the breastfeeding process, making each country decide the strategy that best adapts to its reality. Implications for the practice: It is important that the health team has a close eye to identify atypical signs and symptoms during this process to act preventively in the face of possible complications.

**Keywords:** Breastfeeding, Coronavirus Infections, Coronavirus, SARS Virus, Maternal-Child Nursing.

## Authors summary

### Why was this study done?

The study was carried out to describe recommendations about breastfeeding during SARS-CoV-2 infection and to provide different authors' views on the breastfeeding process around the world during the COVID-19 pandemic.

### What did the researchers do and find?

A scope review was carried out on the strategies and recommendations adopted by different countries in relation to breastfeeding during the Coronavirus pandemic. Thus, the results addressed a global panorama regarding confirmed/suspected mothers with COVID-19. Countries like China, for example, contraindicate breastfeeding, while countries like Brazil encourage it, as long as the mother wants and is able to breastfeed, following the appropriate prevention and hygiene measures.

### What do these findings mean?

The findings indicate that the evidence regarding breastfeeding in times of COVID-19 is fragile and unclear so far. The scientific community begins to adopt different guidelines as new data becomes available and experience is accumulated.

It was identified that there are contradictions regarding the indication of breastfeeding at the international level. It is worth mentioning the importance of the prepared health team, regardless of the guidelines of each country, so that they carefully monitor the mother-child binomial and their family in this process, in order to avoid possible complications, often determining for breastfeeding interruption.

## INTRODUCTION

Human infection caused by the new Coronavirus (SARS-CoV-2), or COVID-19, is a public health emergency of international importance, whose clinical spectrum is diverse, ranging from mild symptoms to severe acute respiratory syndrome. Lethality varies according to each country, but it is clear that elderly and people with chronic comorbidities are the ones with the most complications. At the moment, no vaccines or drugs have been developed with proven scientific evidence for their definitive treatment and, currently, clinical management is aimed at supporting and controlling symptoms<sup>1</sup>.

The number of people infected with SARS-CoV-2 in the world is impressive. As of August 30, 2020, approximately 25 million cases and 800,000 deaths have been reported since the outbreak began<sup>2</sup>. The mortality rate is between 0.2% and 0.4% for the age groups between 10 and 49 years, 1% for the elderly between 50 and 59 years, 3.6% for people between 60 and 69 years and 8% for over 70<sup>3</sup>.

In view of the novelty of the disease and even with scientific advances to better understand the natural course of the disease, there is little information on the clinical presentations of Coronavirus in newborns and children. According to some studies, the condition of children infected with Coronavirus is mild or moderate<sup>4,6</sup>, although newborns have recognized immaturity of the immune system, which suggests that they may be more susceptible to infection by the virus<sup>7</sup>.

Currently, there is no consolidated evidence on the vertical transmission of SARS-CoV-2, since the virus was not found in samples of amniotic fluid, umbilical cord, swab in the throat of neonates and in human milk<sup>4,8</sup>. A study carried out in China found that, specifically, with respect to Coronavirus, children under one year old have higher rates of serious complications than older ones<sup>5</sup>.

Since March 18th of 2020, the World Health Organization (WHO) indicates that women with COVID-19 are able to breastfeed, based on the idea that through breast milk, babies obtain antibodies and anti-infectious factors that help to protect them from various infections<sup>9</sup>.

In this sense, breastfeeding is vital for health and can save the lives of more than 820,000 children under the age of five each year. In the first hours of the baby's

life, breastfeeding, which has a multitude of protective properties, including immunological ones, decreasing the risk of infections by viruses or bacteria and reducing neonatal mortality, should be initiated. Likewise, it provides adequate nutrients for the healthy development of the child. For the mother, it reduces the risk of postpartum depression, anemia and different pathologies<sup>10</sup>.

As it is a recent pathology, the transmission of Coronavirus via breastfeeding is still a limited and quite controversial subject, since the recommendations vary in different countries. It is worth mentioning that, during the pandemic, decisions regarding breastfeeding are constantly reassessed by the scientific community, which may adopt different guidelines as new data becomes available and experience is accumulated. In this sense, this study aims to describe the recommendations about breastfeeding during SARS-CoV-2 infection.

## METHODS

Scope review study, which, according to Peterson and collaborators<sup>11</sup>, allows the identification of knowledge gaps, mapping the available evidence in a specific area of interest, defining the scope of a body of literature, clarifying concepts and investigating research conducts, gathering several drawings of search.

The following steps were taken to develop this review: (1) identify the research question; (2) identify the relevant studies; (3) selection of studies; (4) data mapping; (5) compile, summarize and report the data<sup>11</sup>. From the research question "What are the recommendations for breastfeeding during the COVID-19 pandemic?", the following elements were defined according to the mnemonic P - Population, C - Concept and C - Context P (women and newborns); C (breastfeeding) and C (COVID-19/SARS-CoV-2).

We sought to review the strategies and recommendations adopted by different countries in relation to breastfeeding during the Coronavirus pandemic in protocols, guidelines, government websites and search for scientific articles published in the databases: National Library of Medicine (MEDLINE/PubMed) and Literature Latin American and Caribbean Health Sciences (LILACS). Then, to ensure a thorough search, the controlled descriptors

[Health Science Descriptors (DeCS), Medical Subject Headings (MeSH)] were defined: “Breastfeeding” and “Coronavirus” in English and Portuguese, combined two by two, using the Boolean operator AND. As an inclusion criterion, the selection included scientific articles available in full, in Portuguese, English, Spanish and Italian, which addressed the issue of breastfeeding in the context of SARS-CoV-2. The following were excluded: opinion and duplicated articles. There was no time frame for searching publications.

The articles were mapped using data collection indicators designated by title, type of study, country of origin and recommendations on breastfeeding. The results

were submitted to a descriptive analysis of the content, using analytical tables that synthesized the key information of the studies, interpreting and comparing the productions, to describe the available evidence that answered the guiding question.

## RESULTS

Board 1, below, describes and summarizes the results found on recommendations related to breastfeeding during the COVID-19 pandemic, in different countries. It is noteworthy that, of the publications found, 11 are scientific articles and 11 are documents such as protocols, guidelines and government websites.

n.	Entity/author	Title	Summary
1	Wang L, Shi Y, Xiao T, et al. <sup>12</sup>	Chinese expert consensus on the perinatal and neonatal management for the prevention and control of the 2019 novel coronavirus infection.	The possibility of vertical transmission of Coronavirus cannot be ruled out. Thus, among other issues, babies of mothers with confirmed Covid-19 should not be fed breast milk.
2	Liang Huan, Acharya G <sup>13</sup>	Novel coronavirus disease (COVID-19) in pregnancy: What clinical recommendations to follow?	Temporary separation of the newborn, for at least 2 weeks, is recommended to minimize the risk of viral transmission, avoiding close and prolonged contact with the infected mother. The newborn should be cared for in an isolation ward and carefully monitored for any signs of infection. During this period, direct breastfeeding is not recommended.
3	Favre G, Pomar L, Musso D, Baud D <sup>14</sup>	2019-nCoV epidemic: what about pregnancies?	Chinese experts discourage breastfeeding and do not rule out the possibility of vertical transmission of the virus and, therefore, contraindicate breastfeeding, even in only suspect cases.
4	Comissão Nacional de Saúde da República Popular da China <sup>15</sup>	Press conference on February 7, 2020.	Two cases of neonatal Coronavirus infections were reported and it is suspected that both were infected in the postnatal period from contact with the infected mother. Researchers advise against breastfeeding even in infected mothers without symptoms.
5	Guan-jing Lang, Hong Zhao <sup>16</sup>	Can SARS-CoV-2 infected women breastfeed after viral clearance?	It reports the clinical course of a pregnant woman with COVID-19. The results suggest that breastfeeding can be practiced after a period of isolation.
6	Colégio de Ginecologia e Obstetrícia da Ordem dos Médicos de Portugal <sup>17</sup>	Covid-19: performance in pregnant women.	Researchers advise against breastfeeding even in infected mothers without symptoms.
7	World Health Organization <sup>18</sup>	Questions and answers about COVID-19, pregnancy, childbirth and lactation.	Encourages breastfeeding, even in women infected with Coronavirus, as long as some respiratory hygiene practices are practiced in order to prevent contamination of the newborn.
8	Centro de Controle e Prevenção de Doenças <sup>19</sup>	Considerations for hospital obstetric healthcare settings.	Encourages breastfeeding, even in women infected with Coronavirus, as long as some respiratory hygiene practices are practiced in order to prevent contamination of the newborn and adds that the decision to initiate or continue breastfeeding must be made by the mother together with the mother, family and the team of professionals who care for her.

**Board 1:** Characterization and synthesis of selected articles/documents. Brazil, 2020.

n.	Entity/author	Title	Summary
9	Royal College of Obstetricians & Gynecologists <sup>20</sup>	Coronavirus infection and pregnancy.	It suggests a discussion between the risks and benefits of breastfeeding among pregnant women, family and the maternity team. Guides breastfeeding, even in women infected with Coronavirus, as long as respiratory hygiene is practiced in order to prevent contamination of the newborn.
10	Sociedade Italiana de Neonatologia <sup>21</sup>	Breastfeeding and SARS-CoV-2 infection (Coronavirus Disease 2019 - COVID-19).	Recommends breastfeeding in mothers with confirmed asymptomatic infection or with mild symptoms. Considers it necessary to separate the binomial in cases of symptomatic mothers, with confirmed infection, or suspicions, until obtaining the results of the samples.
11	Davanzo, Riccardo; Moro, Guido; Sandri, Fabrizio; Agosti, Massimo; Moretti, Corrado; Mosca, Fabio <sup>22</sup>	Breastfeeding and coronavirus disease-2019: Ad interim indications of the Italian Society of Neonatology endorsed by the Union of European Neonatal & Perinatal Societies.	Review of published literature, developed a consensus statement, endorsed by the Union of Neonatal and European Perinatal Societies (UENPS). The Italian Society of Neonatology (SIN), after reviewing the limited scientific knowledge on the compatibility of breastfeeding in the mother with COVID-19 and the statements available from Health Organizations, issued the following indications that were endorsed by the European Union of Neonatology and Perinatal Societies (UENPS). If a mother previously identified as positive or under investigation for COVID-19 is asymptomatic or paucysymptomatic at delivery, joint accommodation is feasible and direct breastfeeding is advisable, under strict infection control measures. On the contrary, when a mother with COVID-19 is too ill to care for the newborn, the newborn will be treated separately and fed with fresh breast milk, without the need to pasteurize it, as human milk is not considered a vehicle of COVID-19.
12	Ministério da Saúde. Fundação Oswaldo Cruz. Rede Brasileira de Bancos de Leite Humano <sup>23</sup>	Recommendations for Reception and Clinical Management in breastfeeding pregnant women, mothers and women who are asymptomatic or symptomatic of COVID-19 by the Human Milk Bank.	Provides guidance on breastfeeding and breast milk supply in times of COVID-19.
13	Sociedade Espanhola de Neonatologia <sup>24</sup>	Recommendations for the management of the newborn in relation to SARS-CoV-2 infection.	It recognizes that there is still insufficient data to make safe recommendations and initially did not support the indication to allow breastfeeding. However, in its most recent protocols, and considering the benefits for the binomial, it advises to maintain breastfeeding from birth, if the clinical conditions of the newborn and mother allow.
14	La Leche League Internacional França <sup>25</sup>	Breastfeeding information from A to Z. Coronavirus (COVID-19).	Encourages families to recognize the importance of human milk in providing immunological protection for the child and adds that it is important not to interrupt breastfeeding, even if the lactating mother becomes ill.
15	Centers of Disease Control and Prevention <sup>26</sup>	Information about Coronavirus Disease 2019.	Addresses that the benefits of breastfeeding outweigh any potential risks of transmission of the virus through human milk.

**Continuation - Board 1:** Characterization and synthesis of selected articles/documents. Brazil, 2020.

n.	Entity/author	Title	Summary
16	Royal College of Obstetricians and Gynaecologists <sup>27</sup>	Coronavirus (COVID-19) infection in pregnancy: information for healthcare professionals.	Review addresses the benefits of breastfeeding outweigh any potential risks of transmission of the virus through human milk.
17	Fernández-Carrasco, Francisco Javier; Vázquez-Lara, Juana María; González-Mey, Urbano; Gómez-Salgado, Juan; Parrón-Carreño, Tesifón; Rodríguez-Díaz, Luciano <sup>28</sup>	COVID-19 Coronavirus Infection and Breastfeeding: An Exploratory Review.	Bibliographic research was carried out through the databases. Breastfeeding in postpartum women with SARS-CoV-2 is highly recommended for the newborn, if the health of the mother and newborn allows.
18	Lowe, Belinda; Bopp, Benjamin <sup>29</sup>	COVID-19 vaginal delivery - A case report.	Case report of an uncomplicated vaginal delivery in a mother with COVID-19. Encouraging breastfeeding seems possible and safe when viral precautions are observed.
19	Salvatori, Guglielmo; De Rose, Domenico Umberto; Concato, Carlo; Alario, Dario; Olivini, Nicole; Dotta, Andrea; Campana, Andrea <sup>30</sup>	Managing COVID-19-Positive Maternal-Infant Dyads: An Italian Experience.	Experience report in a hospital in Italy. The authors argue that when SARS-CoV-2 is identified in the mother and child, there is no reason to stop breastfeeding and separate them. Whenever direct breastfeeding is not possible, the use of expressed breast milk should be considered and promoted to take advantage of its indisputable benefits.
20	Calil, Valdenise Martins Laurindo Tuma; Krebs, Vera Lucia Jornada; Carvalho, Werther Brunow de <sup>31</sup>	Guidance on breastfeeding during the COVID-19 pandemic.	Review of the medical literature that provides guidance on breastfeeding for mothers with suspected or confirmed COVID-19. We analyzed 20 recent publications on breastfeeding, COVID-19, and its transmission through breast milk. We present the possible options for breastfeeding and its consequences for the mother and child.
21	Davanzo, Riccardo <sup>32</sup>	Breast feeding at the time of COVID-19: do not forget expressed mother's milk, please.	The study cites that Chinese colleagues who recently dealt with COVID-19 simply do not consider the option of breastfeeding, nor the use of breast milk for newborns. Instead, from Switzerland, Favre et al. suggest avoiding direct breastfeeding. The study concludes that the protocols applied in maternity hospitals for the prevention of COVID-19 should consider, as far as possible, the promotion of breastfeeding, without disregarding the possibility of expressing breast milk.
22	Martins-Filho, Paulo Ricardo; Santos, Victor Santana; Santos Jr., Hudson P <sup>33</sup>	To breastfeed or not to breastfeed? Lack of evidence on the presence of SARS-CoV-2 in breastmilk of pregnant women with COVID-19	Rapid systematic review to assess current evidence related to the presence of SARS-CoV-2 in the breast milk of pregnant women with COVID-19. No breast milk sample was positive for SARS-CoV-2 and, to date, there is no evidence for the presence of SARS-CoV-2 in the breast milk of pregnant women with COVID-19. However, data are still limited and breastfeeding for women with COVID-19 remains a controversial issue.

**Continuation - Board 1:** Characterization and synthesis of selected articles/documents. Brazil, 2020.

## DISCUSSION

Based on the synthesis of the results, the authors point out that the recommendations on breastfeeding in times of COVID-19 are controversial, given that the countries adopt different protocols based on the experiences of previous outbreaks and on the economic, socio-political-cultural issues.

Chinese experts discourage breastfeeding<sup>12-14</sup> and do not rule out the possibility of vertical transmission of the virus and, therefore, contraindicate breastfeeding, even in only suspect cases<sup>12</sup>. They say that the virus should be researched in the milk of suspected or diagnosed mothers and, only with the negative result, babies can be breastfed or fed with human milk. Still, they describe that human milk from healthy donors should also be screened for viral presence, as they claim that the virus can be excreted in milk during the disease's incubation period<sup>12</sup>. In addition, they report 2 cases of neonatal infection by Coronavirus and it is suspected that both were infected in the postnatal period from contact with the infected mother<sup>15</sup>. Another Chinese study suggests practices different from the practices mentioned above and declare that breastfeeding can be practiced, provided that a period of isolation is fulfilled<sup>16</sup>.

Similarly, Portugal, through the College of Gynecology and Obstetrics of the "Ordem dos Médicos", advises against breastfeeding in mothers infected or suspected of COVID-19 and, when possible, stimulate the extraction of human milk with a pump<sup>17</sup>. Thus, it is noted that China and Portugal have adopted more preventive measures and advise against breastfeeding even in infected mothers without symptoms<sup>15-17</sup>.

On the other hand, the World Health Organization (WHO) issued guidelines encouraging breastfeeding<sup>18</sup>, even in women infected with Coronavirus, if some respiratory hygiene care is practiced, in order to prevent contamination of the newborn. Thus, it is necessary to wash hands before breastfeeding or before expressing human milk, use a face mask (completely covering your nose and mouth) during feedings, avoid talking or coughing during this process, in addition to strictly following the recommendations for cleaning the breast pump after use. If the mother does not feel comfortable to breastfeed the child directly, WHO advises that human milk should be milked, using hygiene measures and offered to the newborn by a healthy caregiver<sup>18</sup>.

The Center for Disease Control and Prevention (CDC), in the United States, is in line with the WHO recommendations and adds that the decision to initiate or continue breastfeeding must be made by the mother together with the family and the team of professionals who take care<sup>13</sup>. The Royal College of Obstetricians & Gynecologists (RCOG) in the United Kingdom also shares the information provided by WHO<sup>20</sup>.

In Italy, the Italian Society of Neonatology recommends breastfeeding in mothers with confirmed asymptomatic infection or with mild symptoms. It considers to be necessary to separate the binomial in cases of symptomatic mothers, with confirmed or suspected infection, until obtaining the sample results. In cases of separation, the Italian Society recommends that an

asymptomatic person offers human milk to the newborn<sup>21,22</sup>.

In clinical situations in which the mother is unable to breastfeed, it is recommended to express her milk and offer it to the newborn by means of a cup or spoon. If the mother uses accessories for the extraction of milk, the surfaces of the equipment must be disinfected with 70% alcohol, and the accessories must be washed and boiled for 15 min from the moment the water boils<sup>18,23</sup>.

On the other hand, the Spanish Society of Neonatology recognizes that there is still insufficient data to make safe recommendations and, initially, did not support the indication to allow breastfeeding. However, in its most recent protocols, and considering the benefits for the binomial, it advises to maintain breastfeeding from birth, if the clinical conditions of the newborn and mother allow<sup>24</sup>.

In the same direction, France, through the La Leche League International, encourages families to recognize the importance of human milk in providing immunological protection for the child and adds that it is important not to interrupt breastfeeding, even if the breastfeeding woman becomes ill. The League explains that the baby has already been exposed to the virus by the mother and/or family and will benefit more from direct and continuous breastfeeding<sup>25</sup>.

In Brazil, the Ministry of Health is in favor of maintaining breastfeeding in women with or suspected COVID-19, as long as the woman and the child are in satisfactory clinical conditions and follow the WHO hygiene recommendations in order to avoid viral spread for the newborn<sup>18,23</sup>.

It should be noted that two published international reviews addressed this issue and emphasize that the benefits of breastfeeding outweigh any potential risks of transmission of the virus through human milk<sup>26,27</sup>. Furthermore, other studies argue that breastfeeding in postpartum women with SARS-CoV-2 is highly recommended for the newborn, if the health of the mother and newborn allows<sup>28,29,30</sup>.

Given this scenario, it is noted that the scientific knowledge currently available does not allow to accurately inform the best conduct in the breastfeeding process<sup>31,32,33</sup>. These uncertainties make each country decide, by analogy, through limited experiences of previous outbreaks and the interpretation of the benefits of breastfeeding already consolidated in the literature and the possible complications that the infection can cause, the strategy that best adapts to its reality.

With the course of the disease, care guidelines are being standardized, but for this, complete data on Coronavirus infections during the pregnancy, puerperal and breastfeeding cycle must be collected and made available to the public. The approaches will evolve as more data becomes available, thus serving as a basis for describing the experience of the current epidemic instead of being based on previous circumstances of different types of corona viruses, as their epidemiology, clinical course and response to treatment may differ.

The limitations of this review are related to observational studies, with small and limited samples, the short observation period and research that is still incipient

in relation to the theme. We opted to include gray literature to ensure greater possibility of discussion and knowledge, contemplating guidelines from the Ministry of Health and other health institutions in Brazil and the world.

In view of the epidemiological scenario, this review is essential for mapping, together with the literature, recommendations on breastfeeding during the COVID-19 pandemic, which can guide the care provided by health professionals and support future research. The strategies and recommendations found in this review are aimed at assisting women and children from the delivery room, until the return to their home, either during hospitalization or during the follow-up by Primary Health Care. Among the main guidelines found, the use of masks, hand hygiene before and after each feeding and the cleaning of the tools used for breast milking are pointed out. All these precautions are essential and must be carried out in partnership with the families.

Considering the different recommendations on the breastfeeding process during the COVID-19 pandemic around the world, it is important that the health team, regardless of the guidelines in each country, closely monitor the mother-child and their family in this process. It is up to the professional who assists these women, to provide appropriate guidance in face of the ideological, cultural, social and economic factors of the environment in which they live, in addition to listening to them in order to detect and correct possible difficulties and/or complications early, such as mastitis and breast engorgement that may favor early weaning.

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## Resumo

**Introdução:** A infecção humana causada pelo novo Coronavírus é uma emergência de saúde pública de importância internacional, cujo espectro clínico varia de sintomas leves à síndrome respiratória aguda grave. Destaca-se que há informações fragilizadas sobre as apresentações clínicas do Coronavírus em recém-nascidos e crianças.

**Objetivo:** Descrever as recomendações acerca da amamentação durante a infecção por SARS-CoV-2.

**Método:** Estudo de revisão de escopo.

**Resultados:** A discussão sobre a transmissão viral via amamentação é controversa e as recomendações variam de acordo com especialistas em diferentes países do mundo.

**Conclusão:** O conhecimento científico atualmente disponível não permite informar com precisão a melhor conduta no processo de amamentação, fazendo com que cada país decida a estratégia que melhor se adapta a sua realidade. Implicações para a prática: É importante que a equipe de saúde tenha um olhar atento para identificação de sinais e sintomas atípicos durante esse processo para agir preventivamente frente às possíveis intercorrências.

**Palavras-chave:** Aleitamento Materno, Infecções por Coronavirus, Coronavirus, Vírus da SARS, Enfermagem Materno-Infantil.

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