Key Terms	Date Published	Title	Journal / Source	Type of Publication	Summary & Key Points	Specific Observations	Full Citation
*The expected date for the **next update is Friday, July 24, 2020 at 1 pm USA ET**. New publications since our last update have been **highlighted in blue.***							
Breastfeeding, nutrition, mother-infant separation, shared decision making	6-Jul-20	Setting Realistic Goals for Feeding Infants When Their Mothers Have Suspected or Confirmed COVID-19	Acta Paediatrica	Commentary	There is lack of sufficient data and consensus regarding mother-infant contact in the setting of mothers with suspected or confirmed COVID-19 infection, with different public health agencies and professional societies globally issuing varying recommendations, particularly around separating a mother and infant. Regardless of the approach taken to separation, full precautions should be adopted to avoid respiratory transmission of the virus from mother to infant. The authors describe options to be considered for feeding in a variety of scenarios and advocate for shared-decision making in all scenarios.	The authors argue that a shared decision-making approach for breastfeeding should be used when mothers have suspected or confirmed COVID-19 infection, ensuring that parents fully understand current evidence, availability of breastfeeding support, and other relevant resources. In lower-resource settings, nutrition should be optimized in the best interest of both mother and child.	Mosalli R, Paes B. Setting realistic goals for feeding infants when their mothers have suspected or confirmed COVID-19 [published online 2020 Jul 6]. Acta Paediatr. 2020. doi:10.1111/apa.15459
Mental health. pregnancy, breastfeeding, Belgium	3-Jul-20	Mental Health Status of Pregnant and Breastfeeding Women During the COVID-19 Pandemic: A Call for Action	International Journal of Gynecology & Obstetrics	Brief Communication	Pregnancy and early parenthood are characterized by intense emotions and a high vulnerability to emotional problems. Pregnant and breastfeeding women now also have to face the COVID-19 pandemic. The authors argue that research aimed assessing the impact of COVID-19 on maternal-fetal outcomes should not neglect perinatal mental health. They conducted an online survey in Belgium to investigate maternal mental health status after a few weeks of lockdown (n=5866 women, 2421 pregnant and 3445 breastfeeding). They found that almost half of the surveyed women experienced depressive or anxious symptoms during the lockdown period. The prevalence of self-reported major depressive symptoms in pregnancy (25.3%) and post-partum (23.6%) were explicitly higher when compared to before the pandemic. The authors conclude that routine depression and anxiety screening should be considered in obstetrical settings during the COVID-19 pandemic.	Pregnant and breastfeeding women in Belgium have higher levels of depression and anxiety during the COVID-19 pandemic compared to before the current crisis. Obstetricians should be aware that the pandemic and associated isolation measures may place an additional burden on the emotional wellbeing of their patients.	Ceulemans M, Hompes T, Foulon V. Mental health status of pregnant and breastfeeding women during the COVID-19 pandemic: A call for action [published online, 2020 Jul 3]. Int J Gynaecol Obstet. doi:10.1002/ijgo.13295
Breastfeeding, breast milk, transmission, neonatal infection, Turkey	1-Jul-20	Virolactia in an Asymptomatic Mother With COVID-19	Breastfeeding and Medicine	Case Report	A 20-year-old asymptomatic pregnant woman presented for delivery at 39-week gestation in Turkey and was tested for SARSCoV-2 by RT-PCR due to a recent exposure. She wore a surgical mask during normal vaginal delivery of a 2,980g male infant. Her test result was positive, so mother and newborn were separated immediately after delivery and both were transferred to another hospital. The mother and infant were cared for in separate clinical units to avoid contact; the SARS-CoV-2 PCR test of a nasopharyngeal swab from the infant on admission was negative. Expressed breast milk was given to the infant by health care professionals under strict precautions (hand	In this report, the authors present a case of subclinical SARS-CoV2 infection in a mother and her infant after SARS-CoV-2 was detected in colostrum and breast milk. It remains unclear	Bastug A, Hanifehnezhad A, Tayman C, et al. Virolactia in an Asymptomatic Mother with COVID-19 [published 2020 Jul 1]. Breastfeed Med. doi:10.1089/bfm.2020.0161

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					hygiene, face mask, etc.). After the first lactation, a breast milk sample tested positive for SARS-CoV-2. Feeding with expressed breast milk was discontinued and breast milk samples were tested for SARS-CoV2 for the next 2 consecutive days. Neonatal blood, stool, and nasopharyngeal samples were also obtained for testing and were all positive for SARS-CoV-2. Neither the mother nor infant exhibited any symptoms, required any intervention, and both were discharged five days after admission.	whether the infant's first SARS-CoV-2 RT-PCR test result was a false negative, consistent with congenital or peripartum infection, or whether the infant was subsequently infected through breast milk.	
Breast milk, donor milk, pasteurized, cold storage	20-Jun-20	SARS-CoV-2 in human milk is inactivated by Holder pasteurization but not cold storage	medRxiv	Preprint (not peer reviewed)	As the COVID-19 pandemic evolves, human milk banks worldwide continue to provide donor human milk to vulnerable infants who lack access to the mother's milk. Under these circumstances, ensuring the safety of donor human milk is paramount, as the risk of vertical transmission of SARS-CoV-2 is not well understood. The authors investigate the inactivation of SARS-CoV-2 in human milk by pasteurization and the stability of SARS-CoV-2 in human milk under cold storage (freezing or refrigeration). Following heating to 63°C or 56°C for 30 minutes, SARS-CoV-2 replication competent (i.e. live) virus was undetected in both human milk and the control medium. Cold storage of SARS-CoV-2 in human milk (either at 4°C or - 30°C) did not significantly impact infectious viral load over 48 hours.	The findings demonstrate that SARS-CoV-2 can be effectively inactivated by Holder pasteurization and confirm that existing milk bank processes will effectively mitigate the risk of transmission of SARS-COV-2 to vulnerable infants through pasteurized donor human milk.	Walker GJ, Clifford V, Bansal V, et al. SARS-CoV-2 in human milk is inactivated by Holder pasteurization but not cold storage. medRxiv. doi:10.1101/2020.06.18.20134395
Antibodies, Maternal, Breastmilk	18-Jun-20	Antibodies in the Breast Milk of a Maternal Woman With COVID-19	Emerging Microbes & Infections	Letter	A 33-year-old primiparous woman (38 weeks 2 days of gestation with irregular lower abdominal pain with vaginal fluid for 6 hours) with cough and chest tightness was admitted to hospital for childbirth on February 26, 2020. Throat swabs tested positive for SARS-CoV-2 at admission, but there was neither antiviral nor antibiotic treatment for the patient due to the pregnancy. After delivery, the woman was positive for SARS-CoV-2 tested in throat swabs but tested negative in other body fluids, and she had IgG and IgA detected in breast milk. The neonate had a negative result for SARS-CoV-2 RNA at the birth and her IgG antibody to SARS-CoV-2 was observed only within one and a half month after birth, indicating the placenta transmission of COVID antibody.	Breastmilk was found negative for SARS-CoV-2. The IgG and IgA antibodies were detected in breast milk, indicating that breastfeeding might have the potential benefit to the neonates.	Dong Y, Chi X, Huang H, et al. Antibodies in the breast milk of a maternal woman with COVID-19. Emerging Microbes & Infections [published online 2020 Jun 18]. doi: 10.1080/22221751.2020.1780952
Breastmilk, breast feeding, lactoferrin, infant, neonate, viral entry, immunomodulatory effects	17-Jun-20	Lactoferrin Is an Important Factor When Breastfeeding and COVID-19 Are Considered	Acta Paediatrica	Brief Report	Breast milk, particularly lactoferrin, demonstrates potential antiviral effects. Lactoferrin can prevent viral infections by interacting with heparin sulphate glycosaminoglycan (HSPG) cell receptors, which allow the first anchoring site on the cell surface in the first phase of coronavirus infections. Lactoferrin has previously been shown to interfere with how SARS-CoV enters human cultured cells by competitively localizing to the virus anchoring sites provided by HSPGs, preventing the preliminary contact between the SARS-CoV and entry receptors, namely ACE2. This receptor is also used by SARS-CoV-2. In addition, lactoferrin promotes the growth of gut microbiota and the proliferation of enterocytes with direct anti-inflammatory and immunomodulatory actions. Although not tested in SARS-CoV-2, these mechanisms have affected other coronaviruses. Further clinical evidence is	This report highlights mechanisms for antiviral properties of lactoferrin in breast milk that have been demonstrated in SARS-CoV and speculates that similar mechanisms may be important in SARS-CoV-2. It calls for further clinical evidence.	Peroni DG, Fanos V. Lactoferrin is an important factor when breastfeeding and COVID-19 are considered. 2020 Jun 17. Acta Paediatr. doi:10.1111/apa.15417

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					needed to demonstrate how early breastfeeding and the specific role of lactoferrin provides vital prevention during viral epidemics.		
Breast milk, breastfeeding, validated assay, culture, viral RNA vs. replication-competent virus	16-Jun-20	Evaluation of SARS-CoV-2 in Breastmilk from 18 Infected Women	medRxiv	Preprint (not peer reviewed)	Between March 27 and May 6, 2020, 64 serial breastmilk samples from 18 SARS-CoV-2-infected women residing in the U.S. were collected before and after women had a positive RT-PCR test; all but one woman had symptomatic disease. One sample had detectable SARS-CoV-2 RNA by RT-PCR assay, which was validated by spiking breastmilk from uninfected women with known amounts of viral RNA. The positive sample was collected on the day of symptom onset but one sample 2 days prior to symptom onset and two subsequent samples, collected 12 and 41 days later, tested negative for viral RNA. In addition, a subset of 26 breastmilk samples from nine women were tested for the presence of replication-competent virus using the authors' established culture methods; all were negative including the one sample that tested positive for viral RNA by RT-PCR. This suggests that SARS-CoV-2 RNA does not represent replication-competent virus and that breastmilk itself is likely not a source of infection for the infant. Furthermore, when control breastmilk samples spiked with replication-competent SARS-CoV-2 virus were treated by Holder pasteurization, a process commonly performed by donor milk banks, no replication-competent virus nor viral RNA was detectable. Further research to confirm these findings is needed, as well as an examination of convalescent milk for the presence of antibodies against SARS-CoV-2.	Findings from this analysis of breast milk samples using validated assays suggest that SARS-CoV-2 RNA does not represent replication-competent virus, and breast milk is an unlikely source of infection.	Chambers CD, Krogstad P, Bertrand K, et al. Evaluation of SARS-CoV-2 in Breastmilk from 18 Infected Women [published online 2020 Jun 16]. medRxiv. doi:10.1101/2020.06.12.20127944
Neonatal infection, breastfeeding, mother-newborn separation, vertical transmission, systematic review	12-Jun-20	Maternal Transmission of SARS-COV-2 to the Neonate, and Possible Routes for Such Transmission: A Systematic Review and Critical Analysis	BJOG: An International Journal of Obstetrics & Gynecology	Systematic Review	In this review, 49 studies included information on mode of delivery and neonatal infection status (n=666 neonates and 655 women). 28/666 (4%) neonates had confirmed COVID-19 infection postnatally. Of the 291 women who delivered vaginally, 8/292 (2.7%) neonates were positive. Of the 364 women who had a Caesarean birth, 20/374 (5.3%) neonates were positive. Of the 28 neonates with confirmed COVID-19 infection, 7 were breastfed, 3 formula fed, 1 was given expressed breast milk; in 17 neonates the method of infant feeding was not reported.	Neonatal COVID-19 infection is uncommon, rarely symptomatic, and the rate of infection is no greater when the baby is born vaginally, breastfed or allowed contact with the mother.	Walker KF, O'Donoghue K, Grace N, et al. Maternal transmission of SARS-COV-2 to the neonate, and possible routes for such transmission: A systematic review and critical analysis [published online 2020 Jun 12]. BJOG. doi:10.1111/1471-0528.16362
Pregnancy, neonatal infection, vertical transmission, diagnostic strategy, placental barrier	12-Jun-20	Mechanisms and Evidence of Vertical Transmission of Infections in Pregnancy Including SARS-CoV-2	Prenatal Diagnosis	Review Article	Despite reports of neonatal COVID-19, SARS-CoV-2 has not been consistently isolated in perinatal samples thus, definitive proof of transplacental infection is still lacking. Forty studies of COVID-19 pregnancies, reviewed here, suggest a lack of consensus on diagnostic strategy for congenital infection. While RT-PCR of neonatal swabs was universally performed, a wide range of clinical samples was screened including vaginal secretions (22.5%), amniotic fluid (35%), breast milk (22.5%) and umbilical cord blood. Neonatal COVID-19 was reported in eight studies, two of which were based on the detection of SARS-CoV-2 IgM in neonatal blood. Histological examination demonstrated sparse viral particles, vascular malperfusion and inflammation in the placenta from pregnant women with COVID-19. The paucity of placental co-expression of ACE-2 and TMPRSS2, two receptors involved in cytoplasmic entry of SARS-CoV-2, may explain its relative insensitivity to transplacental	The authors assessed investigative tools used to confirm maternal-fetal SARS-CoV-2 infection in various studies and discussed known protective mechanisms of the placental barrier that prevent transplacental pathogen migration.	Mahyuddin AP, Kanneganti A, Wong J, et al. Mechanisms and evidence of vertical transmission of infections in pregnancy including SARS-CoV-2 [published online 2020 Jun 12]. Prenat Diagn. doi:10.1002/pd.5765

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					infection. Viral interactions may utilize membrane receptors other than ACE-2 thus, tissue susceptibility may be broader than currently known.		
Neonates, vertical transmission, clinical management, breastfeeding, China	10-Jun-20	What Can We Learn From Neonates With COVID-19?	World Journal of Pediatrics	Viewpoint	Based on six reported cases of neonatal SARS-CoV-2 infection, this article summarizes potential routes of vertical transmission, clinical characteristics and management of neonates with COVID-19, as well as management of neonates born to mothers with COVID-19. In China, it is recommended that all neonates born to COVID-19 positive mothers are fed with formula milk initially until the mother has two consecutive negative tests for SARS-CoV-2 and is isolated for 14 days. Meanwhile, the isolated mother is encouraged to keep pumping to maintain breastmilk. Delayed cord clamping and mother-newborn contact in the delivery room as also not recommended in China.	The authors provide recommendations for the management of neonates with COVID-19 or born to mothers with COVID-19, based on experience from China.	Xiao TT, Yan K, Wang LS, Zhou WH. What can we learn from neonates with COVID-19? [published online 2020 Jun 10]. World J Pediatr. doi:10.1007/s12519-020-00376-y
Infants, breastfeeding, milk banks, lactation mana gement center, India	9-Jun-20	Ensuring Exclusive Human Milk Diet for All Babies in COVID-19 Times	Indian Pediatrics	Special Article	The World Health Organization recommends continuation of breastfeeding during the COVID-19 pandemic, and if direct breastfeeding is not possible, milk expression should be explored. Pasteurized donor human milk from milk banks may be used if the mother's own milk is not available. To universalize access to human milk, the Indian government has proposed the establishment of comprehensive lactation management centers/milk banks, lactation management units, and lactation support units at all levels of the public health system. Due to COVID-19, these centers are encountering additional challenges cutting across interventions of rooming in, breastfeeding, milk expression, and provision of donor milk and kangaroo mother care. These issues and alleviation measures taken by these centers are described in this article.	This article discusses challenges in ensuring an exlcusive human mil k diet for infants during the COVID-19 pandemic in India, as well as solutions developed by lactation management centers to meet this challenges.	Sachdeva RC, Jain S, Mukherjee S, Singh J. Ensuring Exclusive Human Milk Diet for All Babies in COVID-19 Times [published online 2020 Jun 9]. Indian Pediatr. 2020;S09747 5591600191.
Postnatal infection, neonates, humoral immunity, maternity hospital outbreak, horizontal transmission, Germany	9-Jun-20	Postnatal SARS-CoV-2 Infection and Immunological Reaction: A Prospective Family Cohort Study	Pediatric Allergy and Immunology	Letter to the Editor	In early March 2020, a COVID-19 outbreak at a large maternity center in Germany occurred affecting 36 midwives, nurses, and doctors. Data are presented on all deliveries with varying degrees of unprotected parental contact with SARS-CoV-2 infected personnel during the first, precontainment, week of the outbreak. Out of 66 families concerned, 61 consented to a prospective study. One or both parents from 16 families reported symptoms suggestive of SARS-CoV-2 infection within 2 weeks postpartum. Three of their infants (all spontaneous births) displayed non-specific signs of infection similar to late-onset sepsis. Five of the 16 families reporting COVID-19 compatible symptoms actually contracted COVID-19 based on RT-PCR and antibody evidence. Two of the three symptomatic neonates were RT-PCR positive and one asymptomatic neonate was identified; no neonates had detectable antibodies. Only one mother produced SARS-CoV-2 IgG-positive breast milk. Although the risk of vertical transmission via breastmilk cannot be excluded, postnatal infection of neonates through horizontal transmission is much more likely.	This cohort study describes transmission of SARS-CoV-2 infection from an outbreak of COVID-19 among obstetric staff at a maternity hospital among postpartum women, their family members, and neonates.	Preßler J, Fill Malfertheiner S, Kabesch M, et al. Postnatal SARS-CoV-2 Infection and Immunological Reaction: A Prospective Family Cohort Study [published online 2020 Jun 9]. Pediatr Allergy Immunol. doi:10.1111/pai.13302
Pregnancy, placental infection, adverse fetal/neonatal outcome, PIMS-	9-Jun-20	SARS-CoV-2 placental infection and inflammation leading to fetal distress and neonatal multi-	medRxiv	Preprint (not peer reviewed)	An asymptomatic pregnant woman with preterm fetal distress during the COVID-19 pandemic is described. Multiple maternal, placental and neonatal swabs were obtained and showed a median viral load in maternal blood, urine, oropharynx, fornix posterior over a period of 6 days was 5.0 log copies /mL. The maternal side of the placenta had a viral load of 4.42 log copies /mL, while the fetal side had 7.15 log copies /mL. Maternal breast milk, feces and all neonatal samples tested negative. Serology of immunoglobulins	In this case report, SARS-CoV-2 RNA was detected on both maternal and fetal sides of the placenta, and SARS-CoV-2 particles were detected on	Schoenmakers S, Snijder P, Verdijk R, et al. SARS-CoV-2 placental infection and inflammation leading to fetal distress and neonatal multi-organ failure in an asymptomatic woman

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TS, Netherlands		organ failure in an asymptomatic woman			against SARS-CoV-2 was positive in maternal blood, but negative in umbilical cord and neonatal blood. Pathological examination of the placenta included immunohistochemical investigation against SARS-CoV-2 antigen expression in combination with SARS-CoV-2 RNA in situ hybridization and transmission electron microscopy. It showed the presence of SARS-CoV-2 particles with generalized inflammation characterized by histiocytic intervillositis with diffuse perivillous fibrin depositions with damage to the syncytiotrophoblasts. In this case, placental infection by SARS-CoV-2 lead to fibrin depositions hampering fetal-maternal gas exchange most likely resulted in fetal distress necessitating a premature emergency caesarean section. Postpartum, the neonate showed a clinical presentation resembling a pediatric inflammatory multisystem syndrome including coronary artery ectasia, most likely associated with SARS-CoV-2 (PIMS-TS) for which admission and care on the Neonatal Intensive Care unit (NICU) was required, despite being negative for SARS-CoV-2.	pathological examination of the placenta.	[published online 2020 Jun 9]. medRxiv. doi:10.1101.2020.06.08.20110437
Breastfeeding, human milk expression, breast pump, milk banking	8-Jun-20	Breastfeeding, Human Milk Collection and Containers, and Human Milk Banking: Hot Topics During the COVID-19 Pandemic	Journal of Human Lactation	Research Article	With regard to the care of newborns delivered by women with suspected or confirmed COVID-19, the main issues of concern include: (1) breastfeeding during the pandemic; (2) human milk collection and the handling of containers when the dyad is separated, with mothers expressing their milk; and (3) making donations of human milk to human milk banks. This report responds to these issues with the following key messages: promoting breastfeeding whenever possible, without disregarding the option of mother's milk expression; utilizing protocols for correct handling of human milk containers; strictly controlling human milk donors for COVID-19 positivity at human milk banks; and allocating available donor milk to the most at-risk preterm infants given decreasing donations.	An overview of different strategies. with their practical implications, to address issues related to breastfeeding and COVID-19 is presented in this report.	Moro GE, Bertino E. Breastfeeding, Human Milk Collection and Containers, and Human Milk Banking: Hot Topics During the COVID-19 Pandemic [published online 2020 Jun 8]. J Hum Lact. doi:10.1177/0890334420934391
Pregnancy, postpartum, temporary separation, breastfeeding, CDC	5-Jun-20	Caring for Women Who Are Planning a Pregnancy, Pregnant, or Postpartum During the COVID-19 Pandemic	JAMA	Insights	Given limited data on COVID-19 in pregnancy and the effects on neonates, recommendations for caring for women who are planning a pregnancy, pregnant, or have given birth during the COVID-19 pandemic are based on expert opinion. There does not seem to be a compelling reason to recommend delaying pregnancy. For women who are pregnant, the primary recommendation is to avoid becoming infected through hygiene and social distancing measures. Guidelines for the care of pregnant women known or suspected to have COVID-19 and admitted for delivery have been developed by the Centers for Disease Control and Prevention and professional organizations and are summarized here. Issues related to hospital placement of the newborn born to a mother with COVID-19 are challenging; shared decision-making between the mother and the care is recommended. For those who select temporary separation, expression of breast milk with hygiene precautions should be encouraged. A mother who chooses to room with her newborn should use a face mask and careful hand and breast hygiene before breastfeeding.	Existing guidelines on the care of pregnant women with suspected or confirmed COVID-19, who are admitted for delivery, are summarized.	Rasmussen SA, Jamieson DJ. Caring for Women Who Are Planning a Pregnancy, Pregnant, or Postpartum During the COVID-19 Pandemic [published online 2020 Jun 5]. JAMA Insights. doi:10.1001/jama.2020.8883

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Pregnancy, breast milk sample, breastfeeding, China	4-Jun-20	Breastfeeding Risk From Detectable Severe Acute Respiratory Syndrome Coronavirus 2 in Breastmilk	Journal of Infection	Letter to the Editor	Five hospitalized pregnant women with COVID-19 in their third trimester presented with clinical symptoms and imaging consistent with SARS-CoV-2 infection. Four patients had cesarean delivery, while one patient delivered her newborn vaginally. All patients experienced favorable clinical outcomes. All available vaginal secretion samples were negative for SARS-CoV-2, whereas SARS-CoV-2 RNA was detected in breastmilk samples collected from one patient on days 2 and 3 post-delivery (RT-PCR Ct values of 38.2 and 38.5 respectively). The clinical characteristics of this patient were similar to those of other COVID-19 positive women with negative breastmilk results.	SARS-CoV-2 RNA was detected in consecutive breastmilk samples of one puerperal woman in this case series from Wuhan, China.	Zhu C, Liu W, Su H, et al. Breastfeeding Risk from Detectable Severe Acute Respiratory Syndrome Coronavirus 2 in Breastmilk [published online 2020 Jun 4]. J Infect. doi:10.1016/j.jinf.2020.06.001
Pregnancy, neonates, vertical transmission, breastfeeding, coronaviruses, SARS, MERS	4-Jun-20	Relationship Between Pregnancy and Coronavirus: What We Know	The Journal of Maternal-Fetal & Neonatal Medicine	Review Article	Pregnancy is characterized by changes involving both the immune system and the pulmonary physiology, exposing the pregnant woman to a greater susceptibility to viral infections and more serious complications. The objective of this review is to analyze the relationship between pregnancy and known coronaviruses, with particular reference to SARS-CoV-2. The molecular bases of immunology and pregnancy are discussed, as well as documented clinical findings in literature. On the basis of available data, COVID-19 appears neither more frequent nor more serious in pregnancy than in non-pregnant women. Perinatal adverse events have been observed but are milder than in SARS and MERS, with preterm delivery representing the main complication of COVID-19 in pregnancy. In addition, breastfeeding is recommended in COVID-19 since viral transmission via breast milk has not been demonstrated. Looking ahead, further research on maternal immune activation in COVID-19 is needed, to understand the effects of exposing the fetus to inflammatory response.	A current review of literature of COVID-19 in pregnancy and comparison to other coronaviruses are offered.	Forestieri S, Marcialis MA, Migliore L, Panisi C, Fanos V. Relationship between pregnancy and coronavirus: what we know [published online 2020 Jun 4]. J Matern Fetal Neonatal Med. doi:10.1080/14767058.2020.1771692
Neonatal infection, ruptured amniotic membranes, breastfeeding, horizontal transmission, Brazil	3-Jun-20	Neonatal SARS-CoV-2 Infection	Clinics (Sao Paolo)	Letter	A male neonate was born vaginally at full term; the mother's amniotic membranes had ruptured 11 hours before delivery. He presented with early respiratory distress, which improved after receiving inhaled oxygen in the first 12 hours of life. Blood examinations were normal, and chest radiography showed a left clavicle fracture. The patient was discharged home on the third day of life, on exclusive breastfeeding. At home, family members complied with isolation requirements, and the newborn had no contact with other patients with flu-like symptoms. On day 11 of life, the newborn had two episodes of hyperthermia and mild respiratory distress. Nasal and oropharyngeal samples for SARS-CoV-2 were positive by RT-PCR. The neonate had favorable clinical course while hospitalized and remained mostly breastfed (he was given formula only when breast milk was unavailable).	Favorable clinical course of COVID-19 is described in a male neonate, who remained breastfed from birth and throughout the recovery process.	Carvalho WB, Gibelli MAC, Krebs VLJ, Calil VMLT, Nicolau CM, Johnston C. Neonatal SARS-CoV-2 infection. Clinics (Sao Paulo). 2020;75:e1996. doi:10.6061/clinics/2020/e1996
Pregnancy, neonates, human milk samples, breastfeeding, Italy	2-Jun-20	Excretion of Sars-Cov-2 in Human Breastmilk Samples	Clinical Microbiology and Infection	Letter to the Editor	In this report, two pregnant women were admitted to a hospital in Rome, Italy and tested positive for SARS-CoV-2. Both patients were in their third trimester and underwent cesarean section following fetal distress. Both neonates did not receive breastmilk, as a precaution. In one mother, viral RNA was detected in multiple breastmilk samples, collected on subsequent days after delivery, as well as placental tissue and cord blood samples. Cycle threshold value of less than 40 (interpreted as positive for SARS-CoV-2 RNA) in three of six breastmilk samples indicate excretion of virus into breastmilk. Thus, the authors recommend against the practice of	Testing from various body sites or fluids of pregnant women with COVID-19 is needed to assess potential mother-to-child transmission of SARS-CoV-2 by extra-respiratory routes.	Costa S, Posteraro B, Marchetti S, et al. Excretion of Sars-Cov-2 in human breastmilk samples [published online 2020 Jun 2]. Clin Microbiol Infect. doi:10.1016/j.cmi.2020.05.027

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					breastfeeding until the mother has achieved viral clearance. Assessment for live virus isolation was not performed in clinical samples in this study.		
Pregnancy, neonates, breastfeeding, breast milk samples, IgM and IgG antibodies, China	1-Jun-20	Safety of Breastfeeding in Mothers with SARS-CoV-2 Infection	medRxiv	Preprint (not peer reviewed)	To evaluate the effect of breastfeeding on SARS-CoV-2 transmission, the presence of SARS-CoV-2, IgG and IgM in breast milk, maternal blood and infant blood were assessed in this study. Among 23 pregnant women with suspected (n=9) or confirmed (n=14) SARS-CoV-2 infection in the third trimester or puerperium, all breast milk samples were negative for the detection of SARS-CoV-2. Testing for IgM and IgG antibodies in breast milk and maternal blood was performed in seven patients; IgM antibodies were present in four confirmed patients and one suspected patient, correlating with IgM detection in maternal blood. IgG antibodies were not detected in any breast milk sample. SARS-CoV-2 testing by throat swab was performed in 15 neonates at birth and in six neonates in the NICU after birth; all results were negative. Following birth, all neonates were in healthy condition, and six were fed with whole or partial breast milk. Eight neonates received SARS-CoV-2 antibody testing one month after birth, and all results were negative.	Findings from this small number of cases suggest that there is currently no evidence for mother-to-child viral transmission via breastfeeding in women with COVID-19 in the third trimester and puerperium.	Luo Q, Chen L, Yao D, et al. Safety of Breastfeeding in Mothers with SARS-CoV-2 Infection [published online 2020 Jun 1]. medRxiv. doi:10.1101/2020.05.30.20033407
Human milk samples, breastfeeding, viral transmission	30-May-20	Detectable Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) in Human Breast Milk of a Mildly Symptomatic Patient With Coronavirus Disease 2019 (COVID-19)	Clinical Infectious Diseases	Brief Report	In this case, a 40-year-old female with mild clinical symptoms tested positive for SARS-CoV-2 on RT-PCR testing of a combined oro/nasopharyngeal swab. Her 8-month-old son, who had been breastfed until the day of maternal symptom onset, also tested positive for SARS-CoV-2; upon confirmed SARS-CoV-2 infection in the infant, breastfeeding was resumed with no adverse effects. The mother had detectable viral RNA in human milk in two separate samples taken 10 days apart (5 and 15 days after maternal symptom onset, respectively) but interspersed with a number of negative results. Contamination from the infant's oropharynx is unlikely because breastfeeding was stopped for five days prior to collection of the first sample and all samples thereafter were collected prior to feeding. The risk of environmental contamination is also unlikely given appropriate hand hygiene and resolution of maternal respiratory symptoms at time of sample collection. There appeared to be no relationship between RT-PCR cycle threshold values from the patient's or infant's oropharyngeal samples with viral RNA detection in human milk. Although SARS-CoV-2 RNA was identified in human milk samples, whether this translates to viable virus or degraded residual nucleic acid could not be ascertained. Due to the infant's travel history and close contact with the mother, viral transmission via breastfeeding is presumed to be unlikely by the authors. Thus, the benefits of human milk likely greatly outweigh risks associated with maternal SARS-CoV-2 infection, due to conferring protection to other respiratory illnesses.	This case report describes an actively breastfeeding patient with SARS-CoV-2 infection with detectable viral RNA in human milk; the patient's infant also tested positive for SARS-CoV-2, but no adverse effects from breastfeeding were noted and viral transmission via human milk is concluded unlikely by the authors.	Tam PCK, Ly KM, Kernich ML, et al. Detectable severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in human breast milk of a mildly symptomatic patient with coronavirus disease 2019 (COVID-19) [published online 2020 May 30]. Clin Infect Dis. doi:10.1093/cid/ciaa673
Human milk, breastfeeding, human coronaviruses, assay validation	30-May-20	SARS-CoV-2 and Human Milk: What Is the Evidence?	Maternal & Child Nutrition	Review Article	There is limited published literature related to vertical transmission of any human coronaviruses via human milk and/or breastfeeding. Results of the present literature search revealed a single study providing some evidence of vertical transmission of human coronavirus 229E; a single study evaluating presence of SARS-CoV in human milk (it was negative); and no published data on MERS-CoV and human milk. In total, 13 studies reporting human milk tested for SARS-CoV-2 were identified; one study detected the virus in one milk sample, and another study detected SARS-CoV-2 specific	Limited reports on the presence of human coronaviruses, including SARS-CoV-2, in human milk are described; these studies do not report methods of sample collection or	Lackey KA, Pace RM, Williams JE, et al. SARS-CoV-2 and human milk: What is the evidence? [published online 2020 May 30]. Matern Child Nutr. doi:10.1111/mcn.13032

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					IgG in milk. Importantly, none of the studies on coronaviruses and human milk report validation of their collection and analytical methods for use in human milk. In addition, little remains known about the timing of antibody response in human milk to SARS-CoV-2 infection. Future research should utilize validated methods and focus on both potential risks and protective effects of breastfeeding.	validation of assays for human milk.	
Neonates, cord clamping, breastfeeding, isolation, skin-to-skin contact	28-May-20	Delayed Umbilical Cord Clamping and Breastfeeding After Childbirth in Mothers Affected by COVID 19: Recommended or Not?	European Journal of Obstetrics & Gynecology and Reproductive Biology	Correspondence	Newborns are more vulnerable to the potential consequence of COVID-19 due to their immature immune systems. Currently, there is insufficient evidence for vertical transmission from mother to fetus via amniotic fluid, umbilical blood or breast milk. Since respiratory droplets are a major route of transmission to the infant during the delivery process, early cord clamping, immediate isolation of the newborn, and lack of skin-to-skin contact can reduce the newborn's risk of infection. If a mother is generally well, breastfeeding should be allowed while observing hygiene precautions.	This brief correspondence argues against delayed umbilical cord clamping but in favor of breastfeeding in newborns born to mothers with COVID-19.	Kohan S, Rahnemaei FA. Delayed umbilical cord clamping and breastfeeding after childbirth in mothers affected by COVID 19: Recommended or not? [published online 2020 May 28]. Eur J Obstet Gynecol Reprod Biol. doi:10.1016/j.ejogrb.2020.05.041
Human milk, viral load, thermal pasteurization, coronaviruses	27-May-20	The impact of thermal pasteurization on viral load in human milk and other matrices: A rapid review	medRxiv	Preprint (not peer reviewed)	Thermal pasteurization (62.5°C, 30 min) of human milk (HM) is thought to reduce the risk of transmitting viruses to an infant. Some viruses may be secreted into milk; others may be contaminants. Primary research articles until April 20, 2020 were identified to assess the impact of pasteurization on viral load or detection of live virus. Reviews were excluded, as were studies lacking quantitative measurements or those assessing pasteurization as a component of a larger process. Overall, 65,131 reports were identified, and 108 included. Pasteurization of HM at a minimum temperature of 56°C-60°C is effective at reducing detectable live virus. In cell culture media or plasma, coronaviruses (e.g., SARS-CoV, SARS-CoV-2, MERS) are highly susceptible to heating at ≥56°C. Future research should standardize pasteurization protocols and test viral inactivation using a human milk matrix.	This review describes the effect of thermal pasteurization on reducing detectable live viruses, like coronaviruses, in human milk.	Pitino MA, O'Connor DL, McGeer AJ, Unger S. The impact of thermal pasteurization on viral load in human milk and other matrices: A rapid review [published online 2020 May 27]. medRxiv. doi:10.1101/2020.05.23.20111369
Pregnancy, neonates, separation policies, breastfeeding, WHO	26-May-20	When Separation Is Not the Answer: Breastfeeding Mothers and Infants Affected by COVID-19	Maternal & Child Nutrition	Original Article	The WHO has provided detailed guidance on the care of infants of women who are a person under investigation (PUI) or confirmed to have COVID-19, which supports immediate postpartum mother-infant contact and breastfeeding with appropriate respiratory precautions. Although many countries have followed WHO guidance, others have implemented infection prevention and control policies that impose varying levels of postpartum separation and discourage or prohibit breastfeeding or provision of expressed breastmilk. These policies aim to protect infants from the potential harm of infection from their mothers, yet they may fail to fully account for the impact of separation. Global COVID-19 data are suggestive of potentially lower susceptibility and a typically milder course of disease among children, although the potential for severe disease in infancy remains. Separation causes cumulative harms, including disrupting breastfeeding and limiting its protection against infectious disease, which has disproportionate impacts on vulnerable infants. Separation also presumes the replaceability of breastfeeding—a risk that is magnified in emergencies. Moreover, separation does not ensure lower viral exposure during hospitalizations and post-discharge and contributes to the burden on	This article discusses the potential detrimental effects of separation policies in settings that have not followed WHO-directed guidance promoting proximity and breastfeeding for COVID-19 affected mothers and infants.	Tomori C, Gribble K, Palmquist AEL, Ververs MT, Gross MS. When Separation is not the Answer: Breastfeeding Mothers and Infants affected by COVID-19 [published online 2020 May 26]. Matern Child Nutr. doi:10.1111/mcn.13033

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					overwhelmed health systems. Finally, separation magnifies maternal health consequences of insufficient breastfeeding and compounds trauma in communities who have experienced long-standing inequities and violence, including family separation. Taken together, separating PUI/confirmed SARS-CoV-2 positive mothers and their infants may lead to excess preventable illnesses and deaths among infants and women around the world.		
Pregnancy, neonates, maternal outcomes, cesarean delivery, breast milk, systematic review	26-May-20	Complications and Outcomes of SARS-CoV-2 in Pregnancy: Where and What Is the Evidence?	Hypertension in Pregnancy	Review	A systematic search of relevant databases was performed on March 25 and a repeat search, on April 10, 2020. Reports of pregnant patients with SARS-CoV-2 infection at any time during their pregnancy were reviewed, and the outcomes of 155 pregnant women and 118 neonates were summarized. The evidence suggests a similar rate of severe COVID-19 cases in pregnant women and the general population. The frequency of cesarean deliveries is high, against guidelines recommendations, and requires clarification. Placenta, amniotic fluid, umbilical cord blood, breastmilk, gastric juice, urine, and feces were all screened for SARS-CoV-2 in different studies and were reported as negative suggesting a possible lack of vertical transmission. There are limited data on COVID-19 during pregnancy, associated with wide variations in methodology that make accurate data interpretation difficult.	This review adds to the growing evidence on SARS-CoV-2 infection during pregnancy and calls for improvement of the level of quality of the studies to allow evidence-based decisions regarding pregnant patients.	Teles Abrao Trad A, Ibirogba ER, Elrefaei A, et al. Complications and outcomes of SARS-CoV-2 in pregnancy: where and what is the evidence? [published online 2020 May 26]. Hypertens Pregnancy. doi:10.1080/10641955.2020.1769645
Pregnancy, neonates, adverse maternal outcomes, SARS-CoV, MERS-CoV, prenatal guidance	26-May-20	Sars-CoV-2 in the Context of Past Coronaviruses Epidemics: Consideration for Prenatal Care	Prenatal Diagnosis	Review	This narrative review describes current knowledge about coronaviruses (SARS, MERS and SARS-CoV-2) and their risks and consequences on pregnancies. A summary of available candidate therapeutic options for pregnant women is also offered with consideration of the compatibility of described drugs with breastfeeding and their excretion into breastmilk. The authors also compare guidance proposed by the Royal College of Obstetricians (RCOG), American College of Obstetricians and Gynecologists (ACOG), and the WHO to give an overview of prenatal management which should be utilized until future data appear.	A review of corona-viruses in pregnancy, current therapeutic options for pregnant women with COVID-19 (with considerations for breastfeeding), and comparison of current guidance on perinatal management are provided.	Lambelet V, Vouga M, Pomar L, et al. Sars-CoV-2 in the context of past coronaviruses epidemics: Consideration for prenatal care [published online 2020 May 26]. Prenat Diagn. doi:10.1002/pd.5759
Pregnancy, breastfeeding, breast milk samples, Germany	21-May-20	Detection of SARS-CoV-2 in human breastmilk	The Lancet	Correspondence	Recent investigations show no evidence for SARS-CoV-2 in human breast milk, however sample sizes are small. In this report, authors analyzed milk samples from two nursing mothers who were diagnosed with COVID-19 days after delivery of and room sharing, with each other and with their newborns. Following admission and delivery, four samples from Mother 1 tested negative. By contrast, SARS-CoV-2 RNA was detected in milk from Mother 2 at days 10, 12, and 13; samples taken subsequently were negative. Detection of viral RNA in Mother 2 coincided with mild COVID-19 symptoms and a SARS-CoV-2 positive diagnostic test of Newborn 2. Mother 2 had been wearing a surgical mask since the onset of symptoms and followed safety precautions when handling or feeding the neonate. Whether Newborn 2 was infected by breastfeeding or other modes of transmission remains unclear.	In this report (previously posted as a preprint) of two nursing mothers with COVID-19, both newborns tested positive for SARS-CoV-2 infection within 1-2 weeks of birth. SARS-CoV-2 RNA was only detected in one mother's consecutive breast milk samples.	Groß R, Conzelmann C, Müller JA, et al. Detection of SARS-CoV-2 in human breastmilk. Lancet. doi:10.1016/S0140-6736(20)31181-8

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Preterm newborn, breastfeeding, breast milk sample, expressed maternal milk, Italy	21-May-20	Lack of Viral Transmission to Preterm Newborn From a COVID-19 Positive Breastfeeding Mother at 11 Days Postpartum	Journal of Medical Virology	Letter to the Editor	This paper reports the case of a mother who presented with clinical symptoms of respiratory tract infection 11 days after the spontaneous delivery of a preterm female newborn (32 weeks + 2 days gestation). Since birth, the newborn was both directly breastfed and fed expressed maternal milk; she also received Kangaroo Mother Care sessions. 11 days after delivery, the mother tested positive for SARS-CoV-2 on RT-PCR of her nasopharyngeal swab. RT-PCR assay of her breast milk samples (pumped at the peak of maternal febrile symptoms) was negative for SARS-CoV-2 allowing the continued provision of nutrition with expressed maternal milk. During hospital stay, the mother and healthcare providers followed hygiene precautions, including wearing surgical masks, hand washing, and using alcohol-based solutions to clean the surfaces. The neonate continued to show normal vital parameters and was discharged. Breast milk contains many components, including immunoglobulins, probiotic organisms, and growth factors that support maturation of the infant's own immune system.	In this case, a nursing mother was diagnosed with COVID-19 11 days postpartum. At the peak of symptoms, her breast milk sample tested negative for SARS-CoV-2 on RT-PCR, thus her newborn continued to be fed with expressed maternal milk.	Perrone S, Giordano M, Meoli A, et al. Lack of viral transmission to preterm newborn from a COVID-19 positive breastfeeding mother at 11 days postpartum [published 2020 May 21]. J Med Virol. doi:10.1002/jmv.26037
Pregnancy, neonates, perinatal outcomes, vertical transmission, breast milk samples, systematic review	19-May-20	Effects of Coronavirus Disease 2019 (COVID-19) on Maternal, Perinatal and Neonatal Outcomes: A Systematic Review	Ultrasound Obstetrics and Gynecology	Systematic Review	A systematic review, conducted until April 20, 2020, identified a high number of case reports and case series on COVID-19 in pregnancy, but only 24 studies including a total of 324 pregnant women with COVID-19 were included. These comprised 8 consecutive case series, 1 non-consecutive case series, and 15 case reports. In the combined data from the 8 consecutive case series, which included 211/295 (71.5%) cases of laboratory-confirmed and 84/295 (28.5%) cases of clinically diagnosed COVID-19, the maternal age ranged from 20 to 44 years and the gestational age on admission ranged from 5 to 41 weeks. The most common symptoms at presentation were fever, cough, dyspnea/shortness of breath, fatigue and myalgia. The rate of severe pneumonia reported amongst the case series ranged from 0 to 14%, with the majority of cases requiring ICU admission. Almost all cases from the case series had positive chest CT findings. The 6 and 22 cases that had nucleic-acid testing in vaginal mucus and breast milk samples, respectively, were negative for SARS-CoV-2. Only 4 cases of spontaneous miscarriage or abortion were reported. 219/295 women had delivered at the time of reporting (range 28-41 gestational weeks), and the majority of these had Cesarean section. Apgar scores at 1 and 5 min ranged from 7 to 10 and 7 to 10, respectively. Only 8 neonates had birth weight <2500g, and nearly one-third of cases were transferred to the NICU. There was 1 case each of neonatal asphyxia and neonatal death. In 155 neonates that had nucleic-acid testing in throat swabs, all but 3 cases were negative for SARS-CoV-2. In the non-consecutive case series, describing 9 cases of severe COVID-19, there were 7 maternal deaths, 4 intrauterine fetal deaths (1 with twin pregnancy) and 2 neonatal deaths (twin pregnancy). In the case reports, describing a total of 20 pregnant patients with COVID-19, 2 maternal deaths, 1 neonatal death and 2 cases of neonatal SARS-CoV-2 infection were reported.	Despite the increasing number of published studies on COVID-19 in pregnancy, there are insufficient good-quality data to draw unbiased conclusions with regard to the severity of the disease or specific complications of COVID-19 in pregnant women, as well as vertical transmission, perinatal and neonatal complications.	Juan J, Gil MM, Rong Z, Zhang Y, Yang H, Poon LC. Effects of coronavirus disease 2019 (COVID-19) on maternal, perinatal and neonatal outcomes: a systematic review [published online 2020 May 19]. Ultrasound Obstet Gynecol. doi:10.1002/uog.22088

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Preterm infant, ARDS, host inflammatory response, remdesivir, horizontal transmission, UK	19-May-20	Horizontal transmission of severe acute respiratory syndrome coronavirus 2 to a premature infant: multiple organ injury and association with markers of inflammation	The Lancet Child & Adolescent Health	Case Report	A male infant, born at 27 weeks' gestation, presented to the emergency department (ED) at 8 weeks of age with a 2-day history of poor feeding, sneezing, and dyspnea. 10 days before presentation, the infant had been discharged from the neonatal unit after recovering from neonatal respiratory distress syndrome; he had been fed with maternal expressed breast milk from day 3 of life. There were no cases of COVID-19 on the neonatal unit before or following discharge, members of the infant's household (parents and a 4-year-old sibling) were asymptomatic, and there were no other reported contacts. On initial assessment in the ED, the infant was in respiratory failure and presumed septic shock; resuscitation and respiratory support were commenced. Quantitative RT-PCR showed that the patient's nasopharyngeal swab sample was positive for SARS-CoV-2. A blood culture was also positive for *Staphylococcus epidermidis*, at which point IV vancomycin was initiated as targeted treatment. The infant became increasingly difficult to ventilate, and repeat chest X-rays showed worsening bilateral airspace opacification consistent with acute respiratory distress syndrome. Along with antimicrobial treatment, remdesivir was prescribed on compassionate grounds and administered intravenously. Over the following days, there was a gradual improvement in respiratory function, and the infant was weaned from all respiratory support on day 24. Respiratory improvement in this infant appeared to be associated with a decrease in IL-6 concentration, ferritin, and lactate dehydrogenase, rather than a decrease in viral load, suggesting that the host pulmonary inflammatory response might have been important with regard to respiratory failure.	This report presents the first detailed description, to the authors' knowledge, of a premature infant with severe SARS-CoV-2 infection in whom longitudinal assessment of multiple organ injury, blood inflammatory markers, and viral load are described.	Cook J, Harman K, Zoica B, et al. Horizontal transmission of severe acute respiratory syndrome coronavirus 2 to a premature infant: multiple organ injury and association with markers of inflammation [published online 2020 May 19]. Lancet Child & Adol Health. doi:10.1016/S2352-4642(20)30166-8
Pregnancy, neonates, labor, obstetric management, breastfeeding, Nigeria, sub-Saharan Africa	18-May-20	Management of covid-19: A Practical Guideline for Maternal and Newborn Health Care Providers in Sub-Saharan Africa	Journal of Maternal Fetal and Neonatal Medicine	Other Articles	At the time of writing, there have been no confirmed obstetric cases of COVID-19 in Nigeria; the only confirmed case of COVID-19 in a child in Nigeria is a 6-week-old infant who returned from the UK with the mother. As the rate of obstetric cases will likely rise in Nigeria and other African countries, pregnant women will have to be attended to in facilities that are distinct from the COVID-19 isolation centers in the country. This guideline prepares and equips clinicians working in the maternal and newborn health care sectors in the sub-region to manage COVID-19 during pregnancy and childbirth. With regard to breastfeeding, the authors note that the practice to support, promote and protect breastfeeding should continue until there is sufficient evidence to advise otherwise. They recommend that the frequency of direct breastfeeding should be reduced to one to two times daily, and other feeds should be expressed breast milk, fed orally in order to limit mother-newborn contact and improve lactation.	These guidelines on obstetric and newborn management during the COVID-19 pandemic are intended for use by maternal and newborn care providers in sub-Saharan Africa.	Ezenwa BN, Fajolu IB, Akinajo OR, et al. Management of covid-19: a practical guideline for maternal and newborn health care providers in Sub-Saharan Africa [published online 2020 May 18]. J Matern Fetal Neonatal Med. doi:10.1080/14767058.2020.1763948
Pregnancy, neonatal infection, vertical transmission	15-May-20	Is SARS-CoV-2 Vertically Transmitted?	Frontiers in Pediatrics	Review Article	Few studies on the vertical transmission of SARS-CoV-2 are found in the literature. In all case reports and case series, the mothers' infection occurred in the third trimester of pregnancy, there were no maternal deaths, and most neonates had a favorable clinical course. Viral RNA was not detected in neonatal nasopharyngeal swab samples at birth, in the placenta, in the umbilical cord, in the amniotic fluid, in the breast milk or in the maternal vaginal swab samples in any of these articles. Only three papers reported neonatal SARS-CoV-2 infection, but there is a bias that positive pharyngeal	This mini-review does not find convincing evidence of SARS-CoV-2 vertical transmission in existing literature.	Simões e Silva AC, Leal CRV. Is SARS-CoV-2 Vertically Transmitted? [published online 2020 May 15]. Front Pediatr. doi:10.3389/fped.2020.00276

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					swab samples were collected at 36 hours and on the 2nd, 4th, and 17th days of life (the possibility of nosocomial infection cannot be ruled out). The possibility of intrauterine infection has been based mainly on the detection of IgM and IL-6 in the neonates' serum. In conclusion, to date, no convincing evidence has been found for vertical transmission of SARS-CoV-2.		
Breastfeeding, WHO guidelines, human milk ba nk, milk donors, infection control, Brazil	15-May-20	Speech Therapy, Breastfeeding and COVID-19: Information to Speech Therapist	Codas	Letter to Editor	This report describes current evidence on potential SARS-CoV-2 transmission in breast milk, breastfeeding guidelines by major international organizations, including the WHO, and infection control measures for human milk banks and donors. The Brazilian Society of Pediatrics has supported the maintenance of breastfeeding in mothers with COVID-19, given the current evidence. In addition, speech therapists have an active, positive role in the guidance for breastfeeding, thus should follow new recommendations.	Breastfeeding guidelines by major international organizations and recommendations for infection control measures for human milk donation are summarized in this report.	Miranda VSG, Rech RS, Maahs MAP, Berbert MCB, Almeida ST. Speech therapy, breastfeeding and COVID-19: information to speech therapist. Codas. 2020;32(3):e20200124. doi:10.1590/2317-1782/20192020124
Pregnancy, neonates, NICU, expert guidelines, Brazil	15-May-20	Expert Recommen-dations for the Care of Newborns of Mothers With COVID-19	Clinics (Sao Paolo)	Review Article	This article presents expert recommendations for managing care of newborns of mothers with suspected or diagnosed COVID-19. The consensus was developed by five experts in neonatal intensive care working at a reference university hospital in Brazil for the care of pregnant women and newborns with COVID-19. Despite the lack of scientific evidence regarding the potential for vertical transmission, it is important to elaborate the lines of care by specialists from hospitals caring for COVID-19 cases to guide multidisciplinary teams and families diagnosed with the disease or involved in the care of pregnant women and newborns in this context. Recommendations for neonatal care consider personal protective equipment and insulation precautions, assistance in the delivery room, newborn transport and ICU admission, clinical evaluation of newborns, breastfeeding (in support of breast milk expression), viral testing of newborns, visitation to hospitalized newborns, hospital discharge, and home isolation of mothers with COVID-19.	A consensus of experts in Brazil developed recommendations for the care of newborns born to mothers with suspected or confirmed COVID-19.	Carvalho WB, Gibelli MABC, Krebs VLJ, Calil VMLT, Johnston C. Expert recommendations for the care of newborns of mothers with COVID-19. Clinics (Sao Paulo). 2020;75:e1932. doi:10.6061/clinics/2020/e1932
Pregnancy, lactating women, breastfeeding, r emdesivir, research inclusion	15-May-20	Protect Pregnant and Lactating Women With COVID-19 Through Research, Not From Research	Breastfeeding Medicine	President's Corner	Prior to the FDA's emergency use authorization of remdesivir, this promising therapy for severe COVID-19 was available for compassionate use in pregnant women and children <18 years, but women were forbidden to breastfeed. Breastfeeding mothers were also excluded from clinical trials of remdesivir, posing a dilemma for mothers between accessing potentially life-saving therapy or providing human milk and its immune benefits to their infants. Due to these exclusion criteria, there are no data on the presence of the drug in human milk or outcomes among infants breastfed while mothers were on therapy. Breastfeeding pharmacologists suggest that remdesivir, administered intravenously, is unlikely to reach the infant's circulation in its active form. Too often, clinicians advise women to wean when they start treatments, without considering the risks of iatrogenic weaning for the health and wellbeing of mother and child. Pregnant and lactating women deserve evidence-based treatment for medical conditions.	This article advocates for the inclusion of pregnant and lactating women in clinical research, namely COVID-19 therapeutic trials, to facilitate access to potentially life-saving treatments and prevent the risks of iatrogenic weaning on maternal and infant health.	Stuebe A. Protect Pregnant and Lactating Women with COVID-19 Through Research, Not from Research [published online 2020 May 15]. Breastfeed Med. doi:10.1089/bfm.2020.29155.ams

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Pregnancy, neonatal infection, vertical transmission, placental pathology, Canada	14-May-20	Probable Congenital SARS-CoV-2 Infection in a Neonate Born to a Woman With Active SARS-CoV-2 Infection	Canadian Medical Association Journal	Original Article	A 40-year-old woman (gravida 2, para 1) was admitted to a tertiary hospital in Toronto, Ontario with history of gestational diabetes and frequent bacterial infections. The patient presented with myalgia, decreased appetite, fatigue, dry cough, and fever. A nasopharyngeal swab was positive for SARS-CoV-2 via RT-PCR testing. The woman did not need any respiratory support at the time of birth. A semi-urgent cesarean delivery was performed owing to worsening coagulopathy and reducing platelet count. Delayed cord clamping was not performed, and the neonate was immediately separated. All 3 nasopharyngeal swabs, obtained from the neonate on the day of birth, day 2, and day 7 were positive for SARS-CoV-2; neonatal plasma tested positive on day 4, and stool was positive on day 7. At 36 hours of age, repeated episodes of hypoglycemia and feeding difficulties necessitated the newborn's admission to the NICU. He was transferred back to his mother's room, and both were discharged home on day 4 after birth. On histopathologic examination, the placenta showed multiple areas of infiltration by inflammatory cells, consistent with chronic histiocytic intervillositis, and extensive early infarction. Placental swabs (both maternal and fetal sides) and breast milk also tested positive for SARS-CoV-2. The authors stated that the potential for respiratory secretion contamination of breast milk cannot be ruled out but was minimized by breast hygiene and cleaning before specimen collection.	This case presents evidence of possible congenital transmission of SARS-CoV-2, with positive placental and breast milk findings described. The mother and newborn did not suffer any complications from COVID-19.	Kirtsman M, Diambomba Y, Poutanen SM, et al. Probable congenital SARS-CoV-2 infection in a neonate born to a woman with active SARS-CoV-2 infection [published online 2020 May 14]. CMAJ. doi:10.1503/cmaj.200821
Pregnancy, neonates, maternal outcomes, delivery, vertical transmission, breastfeeding	10-May-20	COVID-19 and Pregnancy - Where Are We Now? A Review	Journal of Perinatal Medicine	Review	Currently, there is no evidence that pregnant women are more susceptible to SARS-CoV-2 infection than the general population. Premature rupture of membranes, premature labor and fetal distress have been observed in women with COVID-19 in their third trimester. There are no data on complications of SARS-CoV-2 infection before the third trimester. COVID-19 infection should not be the only indication for delivery but can indicate surgical delivery if necessary to improve maternal oxygenation; decision on delivery mode should be individualized. Vertical transmission of SARS-CoV-2 from the pregnant woman to the fetus has not been proven. As the virus is absent in breast milk, the experts encourage breastfeeding for neonatal acquisition of protective antibodies.	Current evidence on COVID-19 in pregnancy, neonatal outcomes, and breastfeeding are reviewed.	Rajewska A, Mikołajek-Bedner W, Lebdowicz-Knul J, Sokołowska M, Kwiatkowski S, Torbé A. COVID-19 and pregnancy - where are we now? A review [published online 2020 May 10]. J Perinat Med. doi:10.1515/jpm-2020-0132
Breastfeeding, breast milk, immune system development, WHO	10-May-20	The Importance of Continuing Breastfeeding During COVID-19: In Support to the WHO Statement on Breastfeeding During the Pandemic	The Journal of Pediatrics	Editorial	This commentary draws upon a statement and recommendations recently issued by the Regional Office for Europe of the WHO with the contribution of main European pediatric organizations. According to the WHO, mothers with suspected or confirmed COVID-19 can breastfeed their newborns as long as they take appropriate precautions. Breast milk encloses various antimicrobial substances, anti-inflammatory components and factors that promote the development of the immune system and reduce the occurrence of respiratory tract infections. There is no evidence to date to suggest the novel coronavirus can pass to infants through breast milk, although the possibility cannot be ruled out.	This editorial draws upon WHO recommendations to provide guidance in support of breastfeeding and related safety measures during the COVID-19 pandemic	Williams J, Namazova-Baranova L, Weber M, et al. The importance of continuing breastfeeding during COVID-19: in support to the WHO statement on breastfeeding during the pandemic [published online 2020 May 10]. J Pediatr. doi:10.1016/j.jpeds.2020.05.009

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Pregnancy, breastfeeding, breast milk samples, viral clearance, China	8-May-20	Can SARS-CoV-2-infected women breastfeed after viral clearance?	Journal of Zhejiang University-SCIENCE B	Correspondence	It is unclear whether breastfeeding transmits SARS-CoV-2 virus from previously infected and recovered mothers to their newborns. This report presents the clinical course of a pregnant woman (35 weeks and 2 days of gestation at admission) with COVID-19 and viral RNA measurements in the patient's breastmilk samples at different time points after delivery. At delivery, RT-PCR tests of maternal serum, urine, stool, cord blood, amniotic fluid, and placenta were negative for SARS-CoV-2. An oropharyngeal swab from the newborn was obtained immediately after birth and was negative. The newborn was isolated and subsequent oropharyngeal swabs, blood, stool, and urine remained negative. Beginning on day 4 of hospitalization, repeated RT-PCR analyses of the mother's sputum and breastmilk were consistently negative for SARS-CoV-2 viral RNA. The authors conclude that breastfeeding can be practiced after an isolation period is completed and repeat testing is normal. In the meantime, breast pumping is recommended to preserve benefits of human milk for newborns and mothers.	Repeated RT-PCR analyses of breast milk samples in a postpartum mother with COVID-19 were consistently negative, contributing to growing evidence that SARS-CoV-2 is not transmitted through breast milk.	Lang GJ, Zhao H. Can SARS-CoV-2-infected women breastfeed after viral clearance?. J Zhejiang Univ Sci B. 2020;21(5):405-407. doi:10.1631/jzus.B2000095
Children, neonatal infection, clinical characteristics, vertical transmission, systematic review	8-May-20	Characterisation of COVID-19 Pandemic in Paediatric Age Group: A Systematic Review and Meta-Analysis	Journal of Clinical Virology	Review Article	This systematic review and meta-analysis analyze articles on pediatric cases of COVID-19, published up to April 2, 2020 in PubMed and Google Scholar. Of 251 children (median age: 6.5 years, range: 0-12 years) reported in 11 studies, the most frequently reported symptoms were cough (49%, 95% CI: 42 - 55%) and fever (47%, 95% CI: 41- 53%). Lymphopenia and elevated Procalcitonin levels were recorded in 17 cases (21%, 95% CI: 12 - 30%) and 22 cases (28%, 95% CI: 18 - 37%) respectively. The case fatality rate was 0%. In addition, from 6 studies reviewed to determine vertical transmission risk, 4/58 neonates (6.8%) born to COVID-19 confirmed mothers tested positive on various samples for the disease. The affected neonates were all males and delivered by cesarean section. One neonate, who tested negative for SARS-CoV-2, died from multiorgan failure and disseminated intravascular coagulation. All samples of breast milk, amniotic fluid, cord blood, placenta, and vaginal swab in this review tested negative for SARS-CoV-2.	This systematic review evaluates literature on COVID-19 in children and reports of neonatal outcomes to analyze disease characterization in the pediatric age group including the possibility of vertical transmission.	Mustafa NM, A Selim L. Characterisation of COVID-19 Pandemic in Paediatric Age Group: A Systematic Review and Meta-Analysis [published online 2020 May 8]. J Clin Virol. doi:10.1016/j.jcv.2020.104395
Pregnancy, neonates, temporary separation, skin-to-skin contact, breastfeeding	8-May-20	Should Infants Be Separated from Mothers with COVID-19? First, Do No Harm	Breastfeeding Medicine	President's Corner	The World Health Organization (WHO) recommends that infants and mothers with suspected or confirmed COVID-19 “should be enabled to remain together and practice skin-to-skin contact...” Breastfeeding is strongly recommended. In contrast, the U.S. Centers for Disease Control and Prevention (CDC) advises that facilities “consider temporarily separating the mother from her infant” until the mother is no longer considered contagious. During separation, women may express breast milk to be fed to the newborn by a healthy caregiver. This article considers the following risks of temporary separation. 1) Separation may not prevent infection. 2) Interruption of skin-to-skin care disrupts newborn physiology. 3) Separation stresses mothers.4) Separation interferes with provision of maternal milk to the infant, disrupting immune protection. 5) Disruptions in breastfeeding increase the risk of infant hospitalization for pneumonia. 6) Separate isolation doubles the burden on the health system.	This article presents potential risks of temporary separation of infants and mothers with COVID-19, as advised by the U.S. CDC.	Stuebe A. Should Infants Be Separated from Mothers with COVID-19? First, Do No Harm. Breastfeed Med. 2020;15(5):351-352. doi:10.1089/bfm.2020.29153.ams

Key Terms	Date Published	Title	Journal / Source	Type of Publication	Summary & Key Points	Specific Observations	Full Citation
Human milk, immune response, secretory IgA antibodies	8-May-20	Evidence of a significant secretory-IgA-dominant SARS-CoV-2 immune response in human milk following recovery from COVID-19	medRxiv	Preprint (not peer reviewed)	The extent of the human milk immune response to SARS-CoV-2 is unknown. This response is critical for infants and young children, who experience mild COVID-19 disease but are likely responsible for significant virus transmission. Perhaps even more significant is the fact that milk anti-bodies (Abs) could be purified and used as a COVID-19 therapeutic, given they would likely be of the secretory (s) class and highly resistant to proteolytic degradation in respiratory tissue. In this preliminary report, 15 milk samples obtained from donors previously-infected with SARS-CoV-2, as well as 10 negative control samples obtained pre-pandemic, were tested for reactivity to the Receptor Binding Domain of the SARS-CoV-2 Spike protein by ELISA assays measuring IgA, IgG, IgM, and secretory Ab. 80% of samples obtained post-pandemic exhibited IgA reactivity, and all these samples were also positive for secretory Ab reactivity, suggesting the IgA is predominantly sIgA. COVID-19 group mean optical density (OD) values of undiluted milk were significantly greater for IgA (p<0.0001), secretory-type Abs (p<0.0001), and IgG (p=0.017), but not for IgM, compared to pre-pandemic group mean values.	These data indicate that there is strong sIgA-dominant SARS-CoV-2 immune response in human milk after infection.	Fox A, Marino J, Amanat F, et al. Evidence of a significant secretory-IgA-dominant SARS-CoV-2 immune response in human milk following recovery from COVID-19 [published online 2020 May 8]. medRxiv. doi:10.1101/2020.05.04.20089995
Pregnancy, preterm neonate, breast milk sample, Belgium	7-May-20	COVID-19 in a 26-week preterm neonate	Lancet Child & Adolescent Health	Case Report	An extremely preterm female neonate (26 gestational weeks + 4 days) was born at a tertiary level hospital in Brussels, Belgium, on March 1, 2020. The mother had been referred from a peripheral hospital for pre-eclampsia and suspected cholecystitis. During hospitalization, the mother developed HELLP (hemolysis, elevated liver enzymes, and low platelet count) syndrome and intramuscular corticosteroids were administered for fetal pulmonary maturation. The neonate was delivered by cesarean section 48 hours later and transferred to the NICU, where she received non-invasive intermittent positive pressure ventilation and surfactant therapy. Despite a pneumothorax requiring drainage, the neonate remained stable in a closed incubator throughout her admission. On day 6 after delivery, the mother's nasopharyngeal swab tested positive for SARS-CoV-2, and the neonate tested positive the following day. Prior to the mother's diagnosis, the neonate had received maternal expressed breast milk, which had tested negative for SARS-CoV-2. RT-PCR testing of the neonate's nasopharyngeal swab was positive 7 days after the initial positive test and tested negative after 14 days; the mother tested negative only after 21 days.	This case study describes an extremely preterm neonate, born to a mother with COVID-19. Both were diagnosed with SARS-CoV-2 following delivery and remained clinically stable. A maternal breast milk sample tested negative for SARS-CoV-2 RNA.	Piersigilli F, Carkeek K, Hocq C, van Grambezen B, Hubinont C, Chatzis O et al. COVID-19 in a 26-week preterm neonate [published online 2020 May 7]. Lancet Child & Adol Health. doi:10.1016/S2352-4642(20)30140-1
Neonatal nutrition, breastfeeding, human milk banking	6-May-20	Maintaining safety and service provision in human milk banking: a call to action in response to the COVID-19 pandemic	The Lancet Child & Adolescent Health	Comment	A Virtual Communication Network of milk bank leaders formed on March 17, 2020, and now has more than 80 members from 34 countries. Data collated from regional and country leads show that more than 800,000 infants are estimated to receive donor milk worldwide annually. The group actively discusses COVID-19-specific challenges and has developed mitigation strategies to ensure donor milk safety and service continuation, which will shortly be made available as a publication. Unlike HIV, where transmission via breastfeeding was a source of infection, there is no evidence to support SARS-CoV-2 transmission from human milk, and the virus is inactivated by heat treatment. In line with WHO recommendations, the promotion of breastfeeding and a human milk diet, using donor milk bank resources, must be prioritized as an essential component of early newborn care.	A Virtual Communication Network of international milk bank leaders considers issues related to the provision of donor milk services during the COVID-19 pandemic and provides guidance around breastfeeding.	Shenker N, on behalf of the Virtual Collaborative Network of Human Milk Banks and Associations. Maintaining safety and service provision in human milk banking: a call to action in response to the COVID-19 pandemic [published online 2020 May 6]. Lancet Child & Adol Health. doi:10.1016/S2352-4642(20)30134-6

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Pregnancy, breast milk samples, vaginal secretions, China	5-May-20	Coronavirus Disease 2019 Among Pregnant Chinese Women: Case Series Data on the Safety of Vaginal Birth and Breastfeeding	BJOG	Case Series	In this single center cohort study, 13 pregnant women with SARS-CoV-2 infection, diagnosed between January 31 and March 9, 2020 at Renmin Hospital, Wuhan, China, were included. Of the 13 women, 5 were in their first trimester, 3 in their second trimester, and 5 in their third trimester. Of the 5 women during their third trimester who gave birth, all delivered live newborns. Among these 5 deliveries, the primary adverse perinatal outcomes included premature delivery (n = 2) and neonatal pneumonia (n = 2). One of 9 maternal stool samples was positive for SARS-CoV-2 on RT-PCR; all 13 vaginal secretion samples in addition to 5 neonatal throat swabs and 4 neonatal anal swabs were negative. However, 1 of 3 samples of breast milk was positive by viral nucleic acid testing.	Negative SARS-CoV-2 test results for vaginal secretion specimens, from pregnant women with COVID-19, suggest that vaginal delivery may be a safe option. However, a positive breast milk sample in this study warrants further study of the risk for viral contamination.	Wu Y, Liu C, Dong L, et al. Coronavirus disease 2019 among pregnant Chinese women: Case series data on the safety of vaginal birth and breastfeeding [published online, 2020 May 5]. BJOG. 2020. doi:10.1111/1471-0528.16276
Neonatal infection, hypoxemia, perioral cyanosis, poor sucking, maternal expressed milk, Italy	4-May-20	Early Neonatal SARS-CoV-2 Infection Manifesting With Hypoxemia Requiring Respiratory Support	Pediatrics	Case Report	On the second day after uncomplicated vaginal delivery of a male neonate, the mother developed fever without respiratory symptoms, and her nasopharyngeal swab was positive for SARS-CoV-2. A nasopharyngeal swab obtained on the same day was also positive for the neonate, who was isolated from his mother. After 48 hours of isolation, on day 5 of life, the neonate developed perioral cyanosis and poor sucking without signs of respiratory distress. Arterial blood gas analysis demonstrated moderate hypoxia. The neonate was admitted to the NICU and placed on 30% inspired oxygen via high-flow nasal cannula, and his condition improved. He was fed maternal expressed milk by nasogastric tube for 48 hours, after which he was able to be fully fed orally. On days 15 and 21 of life, his qualitative PCR for COVID-19 remained positive.	A case of COVID-19 in a 3-day-old neonate manifested with silent hypoxemia. The neonate was fed expressed maternal milk via nasogastric tube until he was able to be fed orally. The nasopharyngeal swab remained positive for more than two weeks, unlike previous reports showing rapid virologic clearance.	Sinelli MT, Paterlini G, Citterio M, Di Marco A, Fedeli T, Ventura ML. Early Neonatal SARS-CoV-2 Infection Manifesting With Hypoxemia Requiring Respiratory Support [published online, 2020 May 4]. Pediatrics. 2020. doi:10.1542/peds.2020-1121
Vertical transmission, congenital vs. perinatal transmission, placenta, breast milk samples, maternal antibodies	3-May-20	Evidence for and Against Vertical Transmission for SARS-CoV-2 (COVID-19)	American Journal of Obstetrics and Gynecology	Review (journal pre-proof)	Twelve articles, published between February 10 and April 4, 2020, reporting on 68 cases of maternal infection in the third trimester of pregnancy and deliveries of 71 neonates were identified. In these studies, SARS-CoV-2 viral nucleic acid was recovered by RT-PCR from nasal/throat swabs, sputum and feces of symptomatic patients, including neonates, but not from maternal vaginal swabs, amniotic fluid, placenta, cord blood, neonatal blood or breast milk samples. Understanding perinatal exposure, influenced by mode of delivery (e.g. exposure to maternal feces during vaginal delivery) and time interval from delivery to the diagnosis of neonatal infection (e.g. exposure to maternal respiratory secretions after birth), is crucial in differentiating congenital from perinatal infection. The low presence of viremia (observed in only 1% of symptomatic adults) decreases the likelihood of placental infection. In addition, the interpretation of IgM and IgG antibodies levels in cord and neonatal blood, in the context of serological evidence for vertical transmission, is also discussed in this review.	This review discusses published literature to date that support or refute the possibility of vertical transmission, both congenital and perinatal, of SARS-CoV-2 infection.	Lamouroux A, Attie-Bitach T, Martinovic J, Leruez-Ville M, Ville Y. Evidence for and against vertical transmission for SARS-CoV-2 (COVID-19) [published online, 2020 May 3]. Am J Obstet Gynecol. 2020. doi:10.1016/j.ajog.2020.04.039

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Vertical transmission, congenital vs. perinatal transmission, placenta, breast milk sam ples, maternal antibodies	3-May-20	Evidence for and Against Vertical Transmission for SARS-CoV-2 (COVID-19)	American Journal of Obstetrics and Gynecology	Review (journal pre-proof)	Twelve articles, published between February 10 and April 4, 2020, reporting on 68 cases of maternal infection in the third trimester of pregnancy and deliveries of 71 neonates were identified. In these studies, SARS-CoV-2 viral nucleic acid was recovered by RT-PCR from nasal/throat swabs, sputum and feces of symptomatic patients, including neonates, but not from maternal vaginal swabs, amniotic fluid, placenta, cord blood, neonatal blood or breast milk samples. Understanding perinatal exposure, influenced by mode of delivery (e.g. exposure to maternal feces during vaginal delivery) and time interval from delivery to the diagnosis of neonatal infection (e.g. exposure to maternal respiratory secretions after birth), is crucial in differentiating congenital from perinatal infection. The low presence of viremia (observed in only 1% of symptomatic adults) decreases the likelihood of placental infection. In addition, the interpretation of IgM and IgG antibodies levels in cord and neonatal blood, in the context of serological evidence for vertical transmission, is also discussed in this review.	This review discusses published literature to date that support or refute the possibility of vertical transmission, both congenital and perinatal, of SARS-CoV-2 infection.	Lamouroux A, Attie-Bitach T, Martinovic J, Leruez-Ville M, Ville Y. Evidence for and against vertical transmission for SARS-CoV-2 (COVID-19) [published online, 2020 May 3]. Am J Obstet Gynecol. 2020. doi:10.1016/j.ajog.2020.04.039
Neonatal, late onset infection, pregnancy, breastfeeding, maternal antibodies, Italy	2-May-20	Neonatal Late Onset Infection With Severe Acute Respiratory Syndrome Coronavirus 2	American Journal of Perinatology	Short Communication	This observational study aimed to evaluate post-discharge SARS-CoV-2 status of newborns (born to pregnant women with COVID-19) who were negative for SARS-CoV-2 infection at birth. Of seven pregnant women with documented SARS-CoV-2 infection, one woman had a spontaneous abortion at 8 weeks of gestational age, four women recovered and are still in follow-up, and two women delivered, at term and pre-term respectively. At birth and 3 days of life, both neonates were negative for SARS-CoV-2 infection. At the 15-day follow-up, one newborn tested positive on nasopharyngeal swab, although he was asymptomatic. This newborn had been breastfed by his mother, who wore a mask while recovering from COVID-19. Since breast milk samples tested negative, respiratory secretions were the likely source of late-onset neonatal infection. Authors speculate that SARS-CoV-2 IgG antibodies (documented at birth in neonatal blood) protected the newborn from symptomatic infection, preserving the benefits of breastfeeding. At follow-up, the second newborn tested negative for SARS-CoV-2 on nasopharyngeal and rectal swabs and had been fed expressed milk by his father. These findings highlight the importance of long-term follow-up of newborns to mothers with COVID-19 in pregnancy.	This case report describes one case of late-onset, asymptomatic neonatal infection, following delivery by a COVID-19 positive mother. It is possible that maternal SARS-CoV-2 IgG antibodies, documented in neonatal blood at birth, protected the newborn from a symptomatic course of infection.	Buonsenso D, Costa S, Sanguinetti M, et al. Neonatal Late Onset Infection with Severe Acute Respiratory Syndrome Coronavirus 2 [published online, 2020 May 2]. Am J Perinatol. 2020. doi:10.1055/s-0040-1710541
Pregnancy complications, adverse neonatal outcomes, fetal death, SARS-CoV, MERS-CoV	1-May-20	Potential Implications of SARS-CoV-2 on Pregnancy	Taiwanese Journal of Obstetrics and Gynecology	Correspondence	To date, there are limited data on the consequences of COVID-19 on pregnancy; however, SARS in 2003 and MERS in 2012 were responsible for severe complications during pregnancy. In a review of previous coronavirus infections in pregnancy, there were 13 cases of SARS-CoV and 11 cases of MERS-CoV reported in the literature. Maternal outcomes of the 13 SARS cases include: 4 had miscarriage, 2 opted for termination of pregnancy, 2 required mechanical ventilation, 3 were treated conservatively, and 2 died. No neonatal adverse effect was noted except for 2 premature births. Maternal outcomes of the 11 MERS-CoV cases include: 2 were asymptomatic, 2 required mechanical ventilation, 3 were treated conservatively, 1 refused treatment, and 3 died. 2 cases of intrauterine fetal demise and 1 fetal death due to prematurity were reported. Neonatal infection due to possible vertical transmission was not detected in any of	In light of SARS-CoV-2 having similar pathogenic characteristics as SARS-CoV and MERS-CoV, pregnant women who become infected are at risk for adverse maternal and fetal complications.	Tseng JY. Potential implications of SARS-CoV-2 on pregnancy. Taiwan J Obstet Gynecol. 2020;59(3):464-465. doi:10.1016/j.tjog.2020.03.025

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					the SARS or MERS cases, except for 1 SARS case in the United States where cord blood and breast milk were positive for the SARS-CoV antibody.		
Human milk bank, breastfeeding, sanitization, Rome, Italy	23-Apr-20	Use of Disinfectant Wipes to Sanitize Milk's Containers of Human Milk Bank During COVID-19 Pandemic	Journal of Human Lactation	Original Article	This paper reports experience from the Human Milk Bank (HMB) of a children's hospital in Rome, Italy. Donors express milk via mechanical pumps and store milk in sterile single-use plastic containers supplied by the HMB. While milk donation was practically suspended in other Italian cities, drivers at this HMB continue to collect expressed human milk (EHM) directly from donors, once a week. Milk is frozen, then defrosted and pasteurized before use. Breastfeeding information is provided to the mothers via telephone consultation available 8 hours a day. It is recommended that donor mothers suspend donation and be promptly tested if any SARS-CoV-2 symptoms occur; however, SARS-CoV-2 could contaminate the outside of the container, since this virus can be detected for up to 72 hours on plastic and various surfaces. Therefore, the HMB has begun to sanitize EHM containers using disinfectant wipes and gloved hands, which is both feasible and sustainable.	A human milk bank from Rome, Italy reports experiences adapting to the COVID-19 era, through less frequent donated milk collection and sanitization of containers.	Rose DU, Reposi MP, Amadio P, et al. Use of Disinfectant Wipes to Sanitize Milk's Containers of Human Milk Bank During COVID-19 Pandemic [published online, 2020 Apr 23]. J Hum Lact. 2020. doi:10.1177/0890334420924639
Maternal-infant dyad, breastfeeding, breast milk samples, Italy	20-Apr-20	Managing COVID-19-Positive Maternal-Infant Dyads: An Italian Experience	Breast-feeding Medicine	Correspondence	This report describes two cases of maternal-infant dyads, in which all four individuals tested positive by nasopharyngeal swab for SARS-CoV-2, at a referral care center in Rome, Italy. Mother 1 and newborn 1 were 36 years old and 18 days old at admission, respectively. Mother 2 and newborn 2 were 26 years old and 10 days old at admission, respectively. Neither the mothers nor the infants required intensive care unit admission. Viral nucleic acid was not detected by RT-PCR in expressed breast milk samples of both mothers. To the authors' knowledge, these are the first data on postnatal horizontal COVID-19 infection in newborns and breast milk analysis in Italy.	This report of two confirmed COVID-19 maternal-infant dyads in Rome, Italy did not find evidence of viral nucleic acid in breast milk samples.	Salvatori G, De Rose DU, Concato C, et al. Managing COVID-19-Positive Maternal-Infant Dyads: An Italian Experience [published online, 2020 Apr 20]. Breastfeed Med. 2020, doi:10.1089/bfm.2020.0095
Neonate, preterm delivery, amniotic fluid sample, maternal death	17-Apr-20	Preterm delivery in pregnant woman with critical COVID-19 pneumonia and vertical transmission	Prenatal Diagnosis	Research Letter	On March 7, 2020, a 22-year-old female (32 weeks' gestation), presented at Imam Khomeini Hospital in Sari, Iran with a 4-day history of dyspnea, myalgia, anorexia, nausea, non-productive cough and fever. The mother's nasopharyngeal swabs tested positive for SARS-CoV-2. On March 11, a preterm female neonate was delivered via cesarean section, weighing 2.35kg; she was kept in an isolated NICU and fed with powdered milk. Umbilical cord blood and neonatal nasal and throat swab samples, collected after delivery, tested negative for SARS-CoV-2 on RT-PCR; whereas, amniotic fluid samples tested positive. 24 hours later, the neonate's nasal and throat swab samples turned positive for SARS-CoV-2. After cesarean delivery, the mother's condition progressively worsened, despite treatment with antivirals and corticosteroids, and she died on March 26.	In this case report from Iran, amniotic fluid and neonatal nasal/throat swab samples tested positive for SARS-CoV-2 following cesarean delivery by a mother with COVID-19. The mother died due to respiratory complications.	Zamaniyan M, Ebadi A, Aghajanpoor Mir S, Rahmani Z, Haghshenas M, Azizi S. Preterm delivery in pregnant woman with critical COVID-19 pneumonia and vertical transmission [published online, 2020 Apr 17]. Prenat Diagn. 2020. doi:10.1002/pd.5713
Pregnancy, neonates, clinical characteristics, abortions, breast milk samples, China	17-Apr-20	Clinical Characteristics of Pregnant Women With Covid-19 in Wuhan, China	New England Journal of Medicine	Correspondence	From December 8, 2019, to March 20, 2020, 118 pregnant women with COVID-19 in Wuhan were identified in the epidemic reporting system of the National Health Commission of China. 84 women (71%) had positive PCR testing for SARS-CoV-2 infection, and the remaining 34 (29%) had suggestive findings on chest CT. 75 of 118 (64%) had been infected with SARS-CoV-2 in the third trimester. The most common symptoms in 112 women with available data were fever (in 75%) and cough (in 73%). Lymphopenia was present in 51 of 116 patients (44%). A total of 88 of the 111 women (79%) who underwent chest CT had infiltrates in both lungs. A total of 109 of 118 women (92%) had mild disease, and 9 (8%) had severe disease (hypoxemia), 1 of whom received noninvasive mechanical ventilation (critical disease).	In this study of 118 pregnant women with COVID-19, there were no maternal deaths. Of 68 women who delivered during the study period, 63 (93%) underwent cesarean section. All neonates tested negative for COVID-19 infection.	Chen L, Li Q, Zheng D, et al. Clinical Characteristics of Pregnant Women with Covid-19 in Wuhan, China [published online, 2020 Apr 17]. N Engl J Med. 2020. doi:10.1056/NEJMc2009226

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					Severe disease developed in 6 of the 9 women after delivery. There were no deaths. Among the study population, there were 3 spontaneous abortions, 2 ectopic pregnancies, and 4 induced abortions (all owing to patients' concerns about COVID-19). A total of 68 of 118 patients (58%) delivered during the study period and had 70 births (2 sets of twins). Of these 68 patients, 63 (93%) underwent a cesarean section; in 38 of 62 cases (61%), the procedure was performed because of concern about the effects of COVID-19 on the pregnancy. A total of 14 deliveries (21%) were premature; 8 were induced (7 owing to concern about COVID-19). No babies had neonatal asphyxia. SARS-CoV-2 testing of throat swabs from 8 newborns and breastmilk samples from 3 mothers was negative.	Breastmilk samples also tested negative.	
Neonatal infection, viral RNA, South Korea	16-Apr-20	Sequential analysis of viral load in a neonate and her mother infected with SARS-CoV-2.	Clinical Infectious Diseases	Brief Report	This brief report describes changes in viral load over time in a 27-day old neonate with COVID-19 who presented with fever, cough, and vomiting. The virus seemed to be transmitted from one of her family members, and the neonate had been directly breastfed from birth. The neonate was hospitalized on March 8, 2020 and placed in an isolation room with her mother. SARS-CoV-2 RNA was detected in the neonate's nasopharynx, oropharynx, stool, saliva, plasma, and urine. Levels of viral RNA were highest in the nasopharynx, decreased over time, and were undetectable after 17 days from onset of symptoms. SARS-CoV-2 RNA in stool samples remained high until the 18th day since onset, even though the neonate's gastrointestinal symptoms had improved. The virus was not detected in the mother's breast milk.	Nasopharyngeal and stool samples from a neonate remained positive for SARS-CoV-2 until 17 and 18 days after symptom onset, respectively. Viral RNA was not detected in breast milk samples.	Han MS, Seong MW, Heo EY, et al. Sequential analysis of viral load in a neonate and her mother infected with SARS-CoV-2 [published online, 2020 Apr 16]. Clin Infect Dis. 2020. doi:10.1093/cid/ciaa447
Pregnancy, neonates, TORCH infection, SARS, MERS, vertical transmission	14-Apr-20	SARS-CoV-2: Is it the Newest Spark in the TORCH?	Journal of Clinical Virology	Review	Data are limited on outcomes of COVID-19 disease during pregnancy and consequences for fetuses and newborns. Therefore, information on illnesses associated with other highly pathogenic coronaviruses (i.e. SARS, MERS), as well as comparisons to common congenital infections, such as cytomegalovirus (CMV), are warranted. Research regarding the potential routes of acquisition of SARS-CoV-2 infection in the prenatal and perinatal setting is of a high public health priority. Breast milk acquisition of infection has not been recognized to date, and strategies to ensure that this remains the preferred source of infant nutrition are needed. Vaccines targeting women of reproductive age, and in particular pregnant patients, should be evaluated in clinical trials and should include the endpoints of neonatal infection and disease.	Authors consider limited data on COVID-19 in pregnancy in the context of SARS, MERS, and common congenitally or perinatally acquired TORCH infections, like CMV.	Muldoon KM, Fowler KB, Pesch MH, Schleiss MR. SARS-CoV-2: Is it the newest spark in the TORCH? [published online, 2020 Apr 14]. J Clin Virol. 2020. doi:10.1016/j.jcv.2020.104372
Children, comorbidities, vertical transmission, community transmission, treatment, breastfeeding	14-Apr-20	The Intriguing Features of COVID-19 in Children and Its Impact on the Pandemic	Jornal de Pediatria	Editorial	One of the most striking and consistent findings from COVID-19 reports globally is that, in contrast with infected adults, children rarely experience severe forms of the disease. Available data on COVID-19 severity in children with comorbidities are scarce, limiting the possibility to identify conditions at increased risk of complications and mortality. Although at this time we do not know whether mothers with COVID-19 can transmit the SARS-CoV-2 via breast milk, the WHO, as well as the Brazilian Society of Pediatrics, made clear recommendations supporting mothers to breastfeed their infants. A crucial point for investigation – yet to be determined – is the role of children in transmission. Despite being asymptomatic or oligosymptomatic, infected infants and children may have high viral loads in their nasopharynx, as well as fecal shedding of SARS-CoV-2 for longer periods, thus may play a	This editorial provides an overview of current literature on notable findings related to COVID-19 in children, highlighting current gaps in data.	Safadi MAP. The intriguing features of COVID-19 in children and its impact on the pandemic [published online, 2020 Apr 14]. J Pediatr (Rio J). 2020. doi:10.1016/j.jped.2020.04.001

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					substantial role in viral community transmission. At the time of writing, treatment in children includes fluid and nutritional intake, together with oxygen supplementation and ventilatory support. Due to the rare number of severe cases in children, there is no data on the safety and efficacy of the different therapeutic interventions that are being tested in adults.		
Neonates, clinical characteristics, vertical transmission, breast milk samples, China	13-Apr-20	Clinical Characteristics of 19 Neonates Born to Mothers With COVID-19	Frontiers in Medicine	Research Article	Nineteen neonates were admitted to Tongji Hospital from January 31 to February 29, 2020. Among them, 9 mothers were clinically diagnosed with COVID-19, and 10 mothers had confirmed infection based on RT-PCR testing of throat swab samples. All deliveries occurred in an isolation room, and neonates were immediately separated from their mothers, for at least 14 days. No fetal distress was found. Mean gestational age of the neonates was 38.6 ± 1.5 weeks, and mean birth weight was 3293 ± 425 g. SARS-CoV-2 RT-PCR test results for throat swab, urine, and feces samples of all neonates were negative following birth. RT-PCR test results for breast milk and amniotic fluid samples were also negative. None of the neonates developed clinical, radiologic, hematologic, or biochemical evidence of COVID-19. No vertical transmission of SARS-CoV-2 and no perinatal complications in the third trimester were found.	No evidence of vertical transmission was found in this cohort of 19 neonates born to mothers with clinically diagnosed or laboratory-confirmed COVID-19. Amniotic fluid, cord blood, and breast milk samples all tested negative for SARS-CoV-2.	Liu W, Wang J, Li W, Zhou Z, Liu S, Rong Z. Clinical characteristics of 19 neonates born to mothers with COVID-19 [published online, 2020 Apr 13]. Front Med. 2020. doi:10.1007/s11684-020-0772-y
Pregnancy, neonate, vertical transmission, breast milk samples	11-Apr-20	Unlikely SARS-CoV-2 Vertical Transmission From Mother to Child: A Case Report	Journal of Infection and Public Health	Case Report	Though some studies indicated the risk of vertical transmission of SARS-CoV-2 infection is low, few cases have been reported with comprehensive serial tests from multiple specimens. In this case, a female preterm infant was born to a mother with confirmed COVID-19. The infant presented with mild respiratory distress and received general management and a short period of nasal continuous positive airway pressure support. During her stay at the hospital, a series of SARS-CoV-2 nucleic acid tests from her serum, throat and anal swabs, bronchoalveolar lavage fluid, and urine were negative. Nucleic acid tests of the mother's amniotic fluid, vaginal secretions, cord blood, placenta, serum, anal swab, and breast milk were also negative. The most comprehensively tested case reported to date confirmed that the vertical transmission of COVID is unlikely, but still, more evidence is needed.	Authors state that vertical transmission of COVID-19 is unlikely but advise caution, until further evidence from epidemiological surveillance and experiment studies on transmission potential through birth canal contact and breast milk is available.	Peng Z, Wang J, Mo Y, et al. Unlikely SARS-CoV-2 vertical transmission from mother to child: A case report [published online, 2020 Apr 11]. J Infect Public Health. 2020. doi:10.1016/j.jiph.2020.04.004
Neonate, pregnancy, vaginal delivery, serological testing, breast milk samples, vertical transmission, China	10-Apr-20	Vaginal Delivery Report of a Healthy Neonate Born to a Convalescent Mother With COVID-19	Journal of Medical Virology	Short Communication	This case report describes a pregnant woman, who was admitted to Beijing YouAn Hospital on January 29, 2020 (33 weeks 1 day gestation) and diagnosed with COVID-19. She received antiviral, anti-infection, and corticosteroid therapies and recovered following treatment. Follow-up RT-PCR tests were negative, and virus-specific IgG and IgM antibodies in maternal venous blood were positive. Thirty-seven days after diagnosis, a male neonate was delivered successfully by vaginal delivery. RT-PCR testing of breast milk, amniotic fluid, and neonatal throat and rectal samples tested negative. Neonatal sera samples were also negative for IgG and IgM antibodies, and SARS-CoV-2 N protein was not detected in the placenta by immunohistochemical analysis. Findings indicate that there is no intrauterine transmission in a woman who develops COVID-19 pneumonia in late pregnancy.	A neonate, born to a convalescing mother, tested negative for COVID-19 infection. Although virus-specific IgG and IgM were detected in maternal sera following recovery, antibodies were absent in neonatal sera. Breast milk samples also tested negative.	Xiong X, Wei H, Zhang Z, et al. Vaginal Delivery Report of a Healthy Neonate Born to a Convalescent Mother with COVID-19 [published online, 2020 Apr 10]. J Med Virol. 2020. doi:10.1002/jmv.25857

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Twin pregnancy, gestational diabetes, high-risk pregnancy, breast milk sample, maternal vaginal secretion sample	6-Apr-20	COVID-19 in pregnancy with comorbidities: More liberal testing strategy is needed	Acta Obstetricia et Gynecolo-gica Scandinavica	Letter to the Editor	This case report describes a 34-year-old primipara with a dichorionic twin pregnancy, who was hospitalized at 36+2/7 weeks' gestation, due to hypertension and proteinuria. On admission, a nasopharyngeal SARS-CoV-2 RNA test was taken. Several hours later, an emergency cesarean section was performed, and two female newborns were delivered in good condition. Following delivery, the mother's RT-PCR test was determined to be positive for SARS-CoV-2 infection. Due to the mother's gestational diabetes (diagnosed at 29 weeks), the twin neonates were fed with formula, and breastfeeding was initiated simultaneously. Both twins had negative nasopharyngeal SARS-CoV-2 RNA tests, taken at 34 hours and 4.5 days of age. Breastmilk and maternal vaginal secretion samples also tested negative on the fifth day.	It is challenging to discriminate between common complications of high-risk pregnancies with comorbidities (e.g. gestational diabetes, preeclampsia) from COVID-19. Neonatal nasopharyngeal swabs, maternal breast milk and vaginal secretions all tested negative for SARS-CoV-2.	Gidlöf S, Savchenko J, Brune T, Josefsson H. COVID-19 in pregnancy with comorbidities: More liberal testing strategy is needed [published online, 2020 Apr 6]. Acta Obstet Gynecol Scand. 2020. doi:10.1111/aogs.13862
Breastfeeding, expressed mother's milk, neonatology, neonatal management, mother-infant relationship	6-Apr-20	Breast Feeding at the Time of COVID-19: Do Not Forget Expressed Mother's Milk, Please	Archives of Disease in Children: Fetal & Neonatal Edition	Letter	This letter responds to a recent commentary by Li et al. promoting the isolation of all infants with suspected COVID-19 regardless of whether or not they present with symptoms, without details on the management of newborn feeding. Other Chinese colleagues have discouraged the use of expressed breast milk for infants with suspected COVID-19. In Switzerland, Favre et al. suggested the avoidance of direct breastfeeding by COVID-19 positive mothers due to close contact and potential aerosol transmission. However, it is important to consider that the primary concern for risk of transmission is by respiratory droplets, which can be mitigated through basic preventive measures, not by breastmilk. Second, the practice of routine maternal-neonatal separation penalizes their relationship. The use of expressed mother's milk should be considered as a second choice, to rescue the nutritional benefits of breast milk when direct breastfeeding is not recommended. Lastly, in light of limited evidence, breastmilk may contain specific antibodies that modulate eventual SARS-CoV-2 infection.	Protocols applied in maternity hospitals to prevent COVID-19 should consider the promotion of breastfeeding without disregarding the feasible option of expressing mother's milk.	Davanzo R. Breast feeding at the time of COVID-19: do not forget expressed mother's milk, please [published online, 2020 Apr 6]. Arch Dis Child Fetal Neonatal Ed. 2020. doi:10.1136/archdischild-2020-319149
Breastfeeding indications, Italy, Europe	3-Apr-20	Breastfeeding and Coronavirus Disease-2019. Ad interim indications of the Italian Society of Neonatology endorsed by the Union of European Neonatal & Perinatal Societies.	Maternal & Child Nutrition	Review Article	Recommendations from the Italian Society of Neonatology indicate that for a mother with suspected or confirmed COVID-19 who is asymptomatic or pauci-symptomatic at delivery, rooming-in is feasible and direct breastfeeding is advisable under strict measures of infection control. However, when a mother with COVID-19 is too sick to care for the newborn, the neonate should be managed separately and fed fresh expressed breast milk, with no need to pasteurize it since human milk is not believed to be a vehicle of COVID-19. This guidance is subject to change.	Recommendations from Italy align with WHO guidelines surrounding breastfeeding with COVID-19.	Davanzo R, Moro G, Sandri F, Agosti M, Moretti C, Mosca F. Breastfeeding and Coronavirus Disease-2019. Ad interim indications of the Italian Society of Neonatology endorsed by the Union of European Neonatal & Perinatal Societies [published online, 2020 Apr 3]. Matern Child Nutr. 2020; e13010. doi:10.1111/mcn.13010

Key Terms	Date Published	Title	Journal / Source	Type of Publication	Summary & Key Points	Specific Observations	Full Citation
Breastfeeding, donor milk, donor milk ban king, breast pump, surface contamination, disinfection	3-Apr-20	Safe Handling of Containers of Expressed Human Milk in all Settings During the SARS-CoV-2 (COVID-19) Pandemic	Journal of Human Lactation	Insights into Practice and Policy	COVID-19 virus contaminates surfaces from respiratory droplet spread. For known coronaviruses, viral lifespan ranges up to 9 days, depending on volume of inoculation, material inoculated, temperature, and humidity. van Doremalen et al. (2020) found that SARS-CoV-2 was more stable on plastic and stainless steel than on copper and cardboard; viable virus was detected up to 72 hours after application to these surfaces although the virus titer was greatly reduced. Since mothers express their milk into a variety of plastic or glass containers, inadvertent viral spread must be avoided during container transfer to milk banks or other locations, through handwashing guidelines before and after expressing milk. Containers must be disinfected after milk expression with viricidal agents or appropriate bleach solutions (such as "high level disinfection" of 0.5% sodium hypochlorite solution, according to WHO) before storage in milk banks, hospital wards, day care centers, or similar locations.	This report provides detailed information on recommended disinfection procedures for breast milk containers, among other hygiene precautions for mothers expressing milk.	Marinelli KA, Lawrence RM. Safe Handling of Containers of Expressed Human Milk in all Settings During the SARS-CoV-2 (COVID-19) Pandemic [published online, 2020 Apr 3]. J Hum Lact. 2020. doi:10.1177/0890334420919083
Pregnancy, uncomplicated delivery, neonate, United States	1-Apr-20	An Uncomplicated Delivery in a Patient with Covid-19 in the United States	New England Journal of Medicine	Correspondence	A 34-year-old woman presented to the labor and delivery unit with a 3-day history of fever, chills, dry cough, and myalgia. She reported decreased fetal movements during the past day. Chest radiographs showed reticular interstitial opacities, and laboratory tests were unremarkable except for lymphopenia. Tests for COVID-19 were determined to be positive 21 hours after samples were obtained. On hospital day 3, she had an uncomplicated spontaneous vaginal delivery. Delayed cord clamping was not performed, and skin-to-skin contact between the mother and infant was not permitted. There was no evidence of neonatal or intra-amniotic infection. The neonate was moved to a separate room and remained there until discharge. The neonate was fed with formula and expressed breast milk.	This case describes an uncomplicated, vaginal delivery of a healthy neonate in a woman with COVID-19. Skin-to-skin contact was not allowed. The neonate was isolated following delivery and fed with formula and expressed breast milk.	Iqbal SN, Overcash R, Mokhtari N, et al. An Uncomplicated Delivery in a Patient with Covid-19 in the United States [published online, 2020 Apr 1]. N Engl J Med. 2020. doi:10.1056/NEJMc2007605
Children, asymptomatic, clinical characteristics, breastfeeding	1-Apr-20	COVID-19 Virus and Children: What Do We Know?	Archives de Pédiatrie	Editorial	As of March 3, 2020, there are more than 900 confirmed pediatric cases, but currently no child under 10 years of age has died; only one individual between 10 and 19 years of age died, and only one child under 1 year old was reported to have a severe form of the disease. The number of confirmed pediatric cases is very low, and the severity and mortality rates are even lower, compared to adults. There is no systematic sampling series in asymptomatic persons, and the age distribution of asymptomatic patients is not detailed in the literature. Do children represent less severe cases, are they less infected, or are they being underdiagnosed as less symptomatic? Symptoms in children include fever, pneumonia, and upper respiratory signs. Symptomatic care is often sufficient, but antibiotic treatment of bacterial superinfection may be necessary. A higher risk of preterm birth is reported in pregnant women, and maternal infection could be involved in neonatal distress; one neonate died, but his specimens tested negative for COVID-19 by RT-PCR. Breastfeeding, with proper hygiene precautions, should be encouraged. If a mother is too tired to breastfeed, milk should be expressed using breast pumps so that a healthy caregiver may feed the infant.	Based on existing knowledge around COVID-19 in children, this article raises the question of whether children represent less severe cases, are less infected, or are being underdiagnosed as asymptomatic? Breastfeeding is encouraged with appropriate hygiene precautions.	Morand A, Fabre A, Minodier P, et al. COVID-19 virus and children: What do we know?. Arch Pediatr. 2020;27(3):117–118. doi:10.1016/j.arcped.2020.03.001

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NICU, donor milk bank, breastfeeding, skin-to-skin contact, United States, CDC, WHO	1-Apr-20	U.S. NICUs and Donor Milk Banks Brace for COVID-19	The Lancet Child & Adolescent Health	Reflections	On March 28, 2020, the first infant death of the U.S. outbreak was announced in Illinois. The U.S. CDC recommends separating newborns from mothers with suspected or confirmed COVID-19. Disruptions in breastfeeding could increase babies' risk of developing necrotizing enterocolitis (NEC), a life-threatening gastrointestinal emergency that can lead to gut perforation and sepsis. Hospital visitor restrictions have further reduced newborns' opportunities for skin-to-skin touch and holding. In contrast with the CDC, WHO guidance on breastfeeding suggests that women with COVID-19 should breastfeed their newborns if they want to do so, while emphasizing respiratory hygiene (mask wearing, handwashing). Pasteurized donor milk is a vital resource for babies in NICUs whose mothers cannot provide breast milk, but donor supplies have become a concern as states and cities issue stay-at-home orders. Hospitals have begun precautionary rationing, allocating donor milk to the smallest and most at-risk preterm infants to prevent NEC.	This article discusses concerns related to breastfeeding, donor milk supply, and skin-to-skin touch during the COVID-19 pandemic. The author notes that human milk lowers risk for newborn necrotizing enterocolitis thus disruptions in breastfeeding may lead to GI emergencies.	Furlow, B. US NICUs and donor milk banks brace for COVID-19. Lancet Child & Adol Health. 2020. https://doi.org/10.1016/S2352-4642(20)30103-6
Breastfeeding, donor milk, donor milk banking, China, Italy, United States	30-Mar-20	International Perspectives Concerning Donor Milk Banking During the SARS-CoV-2 (COVID-19) Pandemic	Journal of Human Lactation	Insights into Practice and Policy	Based on personal communications with colleagues in China, Italy, and the author's own donor milk bank in the United States, the author has attempted to document the pandemic's current effect on donor milk banking as well as donor milk supply and demand. There is heightened anxiety in donors who must interact with the healthcare system to have their blood drawn for screening, or when they drop off their milk at the milk bank. The author's organization is engaged in educating mothers that there is no evidence of coronavirus transmission through human milk and that previous coronaviruses have been destroyed by pasteurization. Other milk banking organizations have issued statements upholding the importance of donor milk and recommending the addition of questions about risk of COVID-19 exposure to donor screening protocols, as well as deferral of donors who report symptoms or test positive for SARS-CoV-2.	This article discusses the effects of the COVID-19 crisis on donor milk banking and details programmatic changes and emergency preparedness strategies implemented at a non-profit U.S. milk bank to ensure sustained supply of donor milk, transport of "safe" milk from donors to milk banks under quarantine, and support for breastfeeding mothers.	Marinelli KA. International Perspectives Concerning Donor Milk Banking During the SARS-CoV-2 (COVID-19) Pandemic [publis+H7hed online ahead of print, 2020 Mar 30]. J Hum Lact. 2020. doi:10.1177/0890334420917661
Serological testing, vertical transmission, IgM / IgG concentrations, cytokine levels, China	26-Mar-20	Antibodies in Infants Born to Mothers With COVID-19 Pneumonia	JAMA	Research Letter	New serological diagnostic criteria (released by the Chinese National Health Commission on Mar 4) were applied to a cohort of 6 pregnant women with confirmed COVID-19, admitted to Zhongnan Hospital, Wuhan from February 16 to March 6, 2020. All six mothers had mild clinical manifestations and cesarean deliveries in their third trimester in negative pressure isolation rooms. Infants were isolated from their mothers immediately after delivery. While neonatal throat swabs and blood samples tested negative for viral nucleic acid by RT-PCR, virus-specific antibodies were detected in the blood serum of all six infants. IgG concentrations (passively transferred across the placenta beginning in the second trimester) were elevated in six infants (not usually passively transferred), and IgM concentrations were detected in two infants. Abnormal weight and pathology of placentas in mothers with SARS have been noted (Ng et al, 2006), but placental damage among women in this study is unknown. IgM could have been produced by the fetus if the	This research builds upon an earlier cohort study of nine pregnant women from the same hospital (Chen et al, Feb 2020), and contributes new data on serological characteristics of mothers and newborns. The presence of anti-SARS-CoV-2 IgM in 2 infants suggests possible transplacental transmission. Study is limited by lack of	Zeng H, Xu C, Fan J, et al. Antibodies in Infants Born to Mothers With COVID-19 Pneumonia [published online ahead of print, 2020 Mar 26]. JAMA. 2020;e204861. doi:10.1001/jama.2020.4861

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					virus crossed the placenta. Inflammatory cytokine IL-6 was also significantly increased in all neonatal sera samples.	cord blood, amniotic fluid, and breast milk data.	
Serological testing, breastmilk sample, vertical transmission, IgM / IgG concentrations, cytokine levels, China	26-Mar-20	Possible Vertical Transmission of SARS-CoV-2 From an Infected Mother to Her Newborn	JAMA	Research Letter	This case report describes the birth of an infant with elevated anti-SARS-CoV-2 IgM antibodies and cytokine levels, despite no physical contact with a mother with laboratory-confirmed COVID-19. The mother developed COVID-19 symptoms and was admitted to Renmin Hospital, Wuhan on January 28, 2020, where she received antiviral, antibiotic, corticosteroid, and oxygen therapies. RT-PCR tests of the patient's vaginal secretions were negative. An infant girl was delivered on February 22, 2020 by cesarean section in a negative pressure isolation room; she was immediately quarantined in the NICU. At two hours of age, the neonate had elevated IgG and IgM levels (usually appear 3 to 7 days after infection) and abnormal cytokine test results. Mother's breastmilk tested negative by RT-PCR on February 28, but her antibody levels were still elevated one day later. Elevated IgM antibody levels in the neonate suggest that she was infected in utero, during the 23 days from the time of the mother's diagnosis to delivery. The elevated IgG level may reflect maternal or infant infection.	Elevated IgM levels in a neonate born to a mother with confirmed COVID-19 raise suspicion of transmission in utero. However, the infant's repeatedly negative RT-PCR test results are difficult to explain. Study limitations include lack of amniotic fluid or placenta testing. Infection at delivery cannot be ruled out.	Dong L, Tian J, He S, et al. Possible Vertical Transmission of SARS-CoV-2 From an Infected Mother to Her Newborn [published online ahead of print, 2020 Mar 26]. JAMA. 2020;e204621. doi:10.1001/jama.2020.4621
Pregnancy, newborn management, nursing, breastfeeding, neonatal isolation, China	26-Mar-20	Experience of Clinical Management for Pregnant Women and Newborns with Novel Coronavirus Pneumonia in Tongji Hospital, China.	Current Medical Science	Article	During breastfeeding, close attention must be paid to hygiene of hands and breasts. Suspected and confirmed cases of COVID-19 are not recommended to breastfeed, according to clinicians at Tongji Hospital. Breastfeeding is not suggested while taking lopinavir/ritonavir, which can be secreted in the milk of rates. During the suspension of breastfeeding, it is recommended that the mother empties her breasts regularly. Newborns who have been confirmed or are suspected of having SARS-CoV-2 infection should be transferred to an isolation ward for observation or treatment. Only when the mother is found negative on two consecutive nucleic acid tests, and under informed consent, should the mother and child be in the same room.	These guidelines from Tongji Hospital (based on the New Diagnosis and Treatment Scheme for Novel Coronavirus Infected Pneumonia, Trial Edition 5) are consistent with earlier recommendations against breastfeeding for mothers with COVID-19, from other Chinese institutions.	Wang SS, Zhou X, Lin XG, et al. Experience of Clinical Management for Pregnant Women and Newborns with Novel Coronavirus Pneumonia in Tongji Hospital, China [published online ahead of print, 2020 Mar 26]. Curr Med Sci. 2020. doi:10.1007/s11596-020-2174-4
Pregnancy, pathophysiology, vertical transmission, breastfeeding, skin-to-skin contact	23-Mar-20	Coronavirus Disease 2019 (COVID-19) Pandemic and Pregnancy	American Journal of Obstetrics & Gynecology	Special Report	To date, the outcomes of 55 pregnant women and 46 neonates infected with COVID-19 have been reported in the literature, with no concrete evidence of vertical transmission. Physiological and mechanical changes in pregnancy increase susceptibility to infections in general, particularly when the cardiorespiratory system is affected. Pregnancy bias towards Th2 system dominance, which protects the fetus, leaves the mother vulnerable to viral infections, which are more effectively contained by the Th1 system. Although data doesn't suggest risk of vertical transmission, delayed clamping of the umbilical cord and skin-to-skin contact should be avoided following delivery. Breastfeeding is not contraindicated based on retrospective analysis of COVID-19 in pregnancy that showed absence of detectable viral loads of SARS-CoV-2 in breastmilk. Regardless, a face mask should be worn due to the close proximity between mother and child to reduce the risk of droplet transmission. The presence of coronavirus antibodies in breastmilk depends on the gestation at which maternal infection occurred	There is no definitive evidence of vertical transmission, but skin-to-skin contact should be avoided following delivery. Breastfeeding is not contraindicated, but a face mask should be worn.	Dashraath P, Jing Lin Jeslyn W, Mei Xian Karen L, et al. Coronavirus Disease 2019 (COVID-19) Pandemic and Pregnancy [published online ahead of print, 2020 Mar 23]. Am J Obstet Gynecol. 2020. doi:10.1016/j.ajog.2020.03.021

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					and if there was any preceding use of high-dose corticosteroids which could suppress maternal antibody responses.		
Perinatal transmission, breastmilk samples, breastfeeding, neutralizing antibodies	17-Mar-20	Perinatal Transmission of COVID-19 Associated SARS-CoV-2: Should We Worry?	Clinical Infectious Diseases	Brief Report	This paper presents two cases of COVID-19 associated SARS-CoV-2 infection during the third trimester of pregnancy. Newborns showed no abnormalities at birth, and mothers had excellent outcomes. It is possible that mothers developed sufficient neutralizing antibodies, without developing serious conditions. These antibodies may have a passively protective effect on children through breastfeeding. Despite the fact that SARS-CoV-2 was not detected in consecutive breastmilk or neonatal specimens, breastfeeding was still discouraged.	Authors bring up the potential protective effect of neutralizing antibodies transmitted to newborns through breastmilk, however breastfeeding was still discouraged for the mothers with COVID-19 in this report.	Cuifang Fan, Di Lei, Congcong Fang et al., Perinatal Transmission of COVID-19 Associated SARS-CoV-2: Should We Worry?, Clinical Infectious Diseases, 17 March 2020, ciaa226, https://doi.org/10.1093/cid/ciaa226
Neonatal infection, pneumonia, liver injury, heart damage, breastmilk sample	17-Mar-20	A 55-Day-Old Female Infant infected with COVID 19: presenting with pneumonia, liver injury, and heart damage	The Journal of Infectious Diseases	Brief Report	A 55-day-old, otherwise healthy, female infant that received mixed feeding became ill January 28, 2020. The infant and her parents had contact with relatives who had symptoms like cough and fever 10 days before. The child's parents were diagnosed with COVID-19 on January 31, and three consecutive tests of SARS-CoV-2 RNA in the breast milk of the mother were negative between February 2 to February 4.	In line with previous studies, breastmilk samples from a mother with SARS-CoV-2 infection tested negative.	Cui, Y, Tian M, Huang D et al. A 55-Day-Old Female Infant infected with COVID 19: presenting with pneumonia, liver injury, and heart damage, The Journal of Infectious Diseases, 17 March 2020, jiaa113, https://doi.org/10.1093/infdis/jiaa113
Neonatal infection	12-Mar-20	A case report of neonatal COVID-19 infection in China.	Clinical Infectious Diseases	Brief Report	A neonate tested positive for COVID-19 infection by RT-PCR assay, using pharyngeal samples, 36 hours after delivery via emergency cesarean section. The mother was wearing an N95 mask throughout the operation, and the infant had no contact with the mother after birth. Breastfeeding was discouraged, while emptying her breasts of milk was encouraged to avoid mastitis. The mother's breast milk sample, which was collected 36 hours after birth, tested negative for the virus.	In line with previous studies, there was no concrete evidence of vertical transmission, and the breast milk samples from a mother with confirmed COVID-19 tested negative.	Wang, S., Guo, L., Chen, L., Liu, W., Cao, Y., Zhang, J., & Feng, L. (2020). A case report of neonatal COVID-19 infection in China. Clinical Infectious Diseases, 12 March 2020, ciaa225, https://doi.org/10.1093/cid/ciaa225
Breastfeeding, remdesivir, antiviral therapy, influenza, Ebola	9-Mar-20	Breastfeeding and Respiratory Antivirals: Coronavirus and Influenza.	Lactation Medicine	Commentary	Remdesivir shows promising activity against COVID-19. Nothing is known about the passage of remdesivir into breast milk, but one infant with Ebola was treated with IV remdesivir following treatment with the monoclonal antibody ZMapp and a buffy coat transfusion from an Ebola survivor. The infant experienced no adverse effects and was virus free on day 20 of life.	Little is known about the passage of antivirals (including those suggested to treat COVID-19) into breastmilk.	Anderson, P. O. (2020). Breastfeeding and Respiratory Antivirals: Coronavirus and Influenza. Breastfeeding Medicine. doi:10.1089/bfm.2020.29149.poa
Vertical transmission, pregnancy, breastmilk sample, placenta sample, China	5-Mar-20	Lack of vertical transmission of severe acute respiratory syndrome coronavirus 2, China.	Emerging Infectious Diseases	Research Letter	A 30-year-old pregnant woman, confirmed positive for SARS-CoV-2 infection, delivered an infant by cesarean section at 35 weeks gestation, in a negative-pressure operating room. An oropharyngeal swab specimen, obtained immediately after the infant was taken from the uterus, indicated that the infant was negative for SARS-CoV-2, and was sent to the negative-pressure ward. On the delivery day, although the woman's sputum was positive, serum, urine, feces, amniotic fluid, umbilical cord blood and placenta, and breast milk samples were negative.	Sputum samples from a woman with confirmed COVID-19 tested positive following delivery, while amniotic fluid, umbilical cord blood, placenta, and breast milk samples tested negative.	Li Y, Zhao R, Zheng S, Chen X, Wang J, Sheng X, et al. Lack of vertical transmission of severe acute respiratory syndrome coronavirus 2, China. Emerging infectious diseases, 26(6). 5 March 2020.

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							https://doi.org/10.3201/eid2606.200287
Pregnancy, neonatal infection	5-Mar-20	Novel coronavirus infection and pregnancy.	Ultrasound in Obstetrics & Gynecology	Opinion	This paper discusses the current guidelines in China that recommend newborn separation from their infected mothers for at least 14 days following birth. These restrictions make direct breastfeeding unfeasible; however, the mothers are advised to express their breastmilk in order to maintain milk production. Once they test negative for COVID-19, they should be encouraged to breastfeed their infant.	As noted in other protocols from China, breastfeeding is discouraged while breastmilk expression is encouraged in order to maintain milk production.	Yang, H., Wang, C., & Poon, L. C. (2020). Novel coronavirus infection and pregnancy. Ultrasound in Obstetrics & Gynecology. 5 March 2020. https://doi.org/10.1002/uog.22006
Pregnancy, WHO, CDC, expert guidance, China	5-Mar-20	Novel corona virus disease (COVID-19) in pregnancy: What clinical recommendations to follow?	Acta Obstetricia et Gynecologica Scandinavica	Special Editorial	This editorial presents a set of recommendations based on WHO, CDC, and expert Chinese guidance, with regard to prevention, diagnosis, management, timing and mode of delivery, and care of infants born to mothers with COVID-19. Limited data suggests that transplacental transmission is unlikely in late pregnancy, but infection can occur in neonates via close contact. Early cord clamping and temporary separation of the newborn for at least 2 weeks is recommended. During this period, direct breast feeding is not recommended, but a mother can pump her breast milk, which can be used to feed the neonate by a healthy caregiver.	The guidelines in this editorial fall in line with previously stated Chinese guidance on breastfeeding but contradict the WHO's recommendations to allow mothers with COVID-19 to choose to continue to breastfeed.	Liang H, Acharya G. Novel corona virus disease (COVID-19) in pregnancy: What clinical recommendations to follow? Acta Obstet Gynecol Scand. 2020;99(4):439–442. doi:10.1111/aogs.13836
Infant, viral load, nasopharynx, breastmilk sample	28-Feb-20	A Well Infant with Coronavirus Disease 2019 (COVID-19) with High Viral Load	Clinical Infectious Diseases	Brief Report	A well 6-month-old boy was referred to KK Women's and Children's Hospital (KKH) on February 4, 2020, and a nasopharyngeal specimen taken on admission and tested by RT-PCR confirmed the diagnosis of COVID-19 infection. His mother's symptoms started on January 29, 2020 and the first nasopharyngeal swab on February 3, 2020 was positive for SARS-CoV-2. Breastmilk samples on February 8, 2020 were negative. The infant likely acquired the virus from a household member, but it was difficult to ascertain the day of infection as there were no reported symptoms.	Breastmilk samples, collected from a breastfeeding mother with confirmed COVID-19 infection, tested negative several days after her diagnosis.	Kai-qian Kam, Chee Fu Yung, Lin Cui, Raymond Lin Tzer Pin, Tze Minn Mak, Matthias Maiwald, Jiahui Li, Chia Yin Chong, Karen Nadua, Natalie Woon Hui Tan, Koh Cheng Thoon, A Well Infant with Coronavirus Disease 2019 (COVID-19) with High Viral Load. Clinical Infectious Diseases, 28 February 2020, ciaa201, https://doi.org/10.1093/cid/ciaa201
Pregnancy, infant, premature birth	28-Feb-20	A case of 2019 Novel Coronavirus in a pregnant woman with preterm delivery	Clinical Infectious Diseases	Brief Report	On February 2, 2020, a 28-year-old female, who was 30 weeks pregnant, presented to a fever clinic of Suzhou Municipal Hospital with intermittent fever for one week. Two throat swab samples were collected and tested negative. On February 6, the second SARS-CoV-2 RT-PCR results of her sputum came back positive. A preterm male infant was delivered at 30 weeks of pregnancy. On day 3 after cesarean section, RT-PCR analyses of the neonatal throat swab and stool samples were COVID-19 negative. He was kept in the isolation ICU of the neonatal nursery for observation, without any contact with his mother after birth. The newborn was given formula	A report from a hospital in China describes management of a newborn with confirmed COVID-19, who was isolated from his mother and fed formula, rather than breastmilk.	Wang, X., Zhou, Z., Zhang, J., Zhu, F., Tang, Y., Shen, X., & Shen, X. (2020). A case of 2019 Novel Coronavirus in a pregnant woman with preterm delivery. Clinical Infectious Diseases, 28 February 2020, ciaa200,

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					instead of breast milk ever since. Samples of breastmilk were not taken for testing.	Breastmilk samples for testing were notably missing.	https://doi.org/10.1093/cid/ciaa200
Pregnancy, perinatal infection, breast milk sample, vertical transmission	25-Feb-20	Coronavirus Disease 2019 (COVID-19) During Pregnancy: A Case Series.	Preprints	Case Series	This case series was conducted in the obstetric ward of Tongji Hospital. Systematic testing for SARS-CoV-2 infection included oropharyngeal swab, placenta tissue, vaginal mucus, and breast milk of mothers, as well as oropharyngeal swab, umbilical cord blood, and serum of newborns. All patients showed an uneventful perinatal course, successful outcomes, and no evidence of vertical transmission.	This case series presents the most comprehensive virological assessment of pregnant women and newborns to date. There was no evidence of vertical transmission.	Liu, W.; Wang, Q.; Zhang, Q.; Chen, L.; Chen, J.; Zhang, B.; Lu, Y.; Wang, S.; Xia, L.; Huang, L.; Wang, K.; Liang, L.; Zhang, Y.; Turtle, L.; Lissauer, D.; Lan, K.; Feng, L.; Yu, H.; Liu, Y.; Sun, Z. Coronavirus Disease 2019 (COVID-19) During Pregnancy: A Case Series. Preprints 2020, 2020020373
Pregnancy, obstetrics, coronaviruses, SARS-CoV antibodies in breastmilk	24-Feb-20	Coronavirus Disease 2019 (COVID-19) and Pregnancy: What Obstetricians Need to Know	American Journal of Obstetrics & Gynecology	Expert Review	This expert review draws upon information on other pathogenic coronaviruses (SARS, MERS) to provide insight into effects of COVID-19 on pregnancy. A single report of SARS-CoV testing of breastmilk (approximately 130 days after illness onset) exists: no viral RNA was detected, but SARS-CoV antibodies were seen (Robertson et al, 2004). In another patient with SARS-CoV, at 7 weeks gestation, antibodies were not seen when breastmilk was tested at postpartum days 12 and 30 (Stockman et al, 2004). Until additional data are available, mothers who are well enough to express breastmilk should be encouraged to do so; breastfeeding can be instituted after she is no longer infectious.	In a 2004 report on SARS-CoV testing of breastmilk, antibodies were detected, but viral RNA was not. Expert authors recommend that breastfeeding should be initiated after a mother is no longer infectious.	Rasmussen SA, Smulian JC, Lednicky JA, Wen TS, Jamieson DJ. Coronavirus Disease 2019 (COVID-19) and Pregnancy: What obstetricians need to know [published online ahead of print, 2020 Feb 24]. Am J Obstet Gynecol. 2020. doi:10.1016/j.ajog.2020.02.017
Neonatal infection, gastrointestinal symptoms, clinical manifestation, China	16-Feb-20	SARS-CoV-2 infection with gastrointestinal symptoms as first manifestation in a neonate	Chinese Journal of Contemporary Pediatrics	Case Study in Mandarin; Abstract in English	A neonate with SARS-CoV-2 infection presented with initial symptoms of vomiting and milk refusal. After two weeks of treatment at Wuhan Children's Hospital, the patient gradually recovered and was discharged.	Neonates may present with primarily gastrointestinal symptoms (such as milk refusal and vomiting), rather than respiratory symptoms.	Wang J, Wang D, Chen GC, Tao XW, Zeng LK. Zhongguo Dang Dai Er Ke Za Zhi. 2020;22(3):211–214.
Pregnancy, vertical transmission, breastmilk sample, China	12-Feb-20	Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records.	The Lancet	Original Article	This article presents a retrospective review of laboratory results and CT scans from nine pregnant women with COVID-19 pneumonia admitted to Zhongnan Hospital of Wuhan University from Jan 20 to Jan 31, 2020. All women tested positive for SARS-CoV-2 by use of quantitative RT-PCR (qRT-PCR) on samples from the respiratory tract. The nine pregnant women were in their third trimester, and all underwent caesarean section. Six samples of amniotic fluid, cord blood, neonatal throat swab, and breastmilk collected after their first lactation tested negative for the presence of SARS-CoV-2, using both the CDC-recommended test kit and the in-house tested RT-PCR assays.	No evidence for intrauterine infection caused by vertical transmission in women who develop COVID-19 pneumonia in late pregnancy. Six breastmilk samples tested negative for viral nucleic acid.	Chen, H., Guo, J., Wang, C., Luo, F., Yu, X., Zhang, W., ... & Liao, J. (2020). Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. The Lancet 2020 Feb 12, 395(10226), 809-815. [e-pub]. https://doi.org/10.1016/S0140-6736(20)30360-3

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Neonatal infection, breastmilk sample, China	11-Feb-20	2019-novel coronavirus infection in a three-month-old baby	Chinese Journal of Pediatrics	Case Study in Mandarin; Abstract in English	An infant was breastfed after birth, with normal growth and good health status. The infant was admitted to a hospital in Xiaogan, Hubei Province, on January 26, 2020 and continued to be breastfed. She tested positive for COVID-19 one day later. Nasopharyngeal swab specimens collected from the parents on January 26 initially tested negative, but the parents were diagnosed with infection one week later. In this case, viral nucleic acid was detected in the stool of the mother, but no viral nucleic acid was detected in breastmilk or urine.	This case study raises the question of shorter incubation periods in neonates compared to adults. Notably, breastmilk samples tested negative for viral nucleic acid.	Zhang, Y. H., Lin, D. J., Xiao, M. F., Wang, J. C., Wei, Y., Lei, Z. X., ... & Xiang, W. (2020). 2019-novel coronavirus infection in a three-month-old baby. Chinese journal of pediatrics, 2020 Feb 11;58(0):E006. DOI: 10.3760/cma.j.issn.0578-1310.2020.0006.
Perinatal and neonatal management, prevention, China	6-Feb-20	Chinese expert consensus on the perinatal and neonatal management for the prevention and control of the 2019 novel coronavirus infection (First edition).	Annals of Translational Medicine	Expert Consensus	The possibility of the vertical transmission of 2019-nCoV cannot be ruled out. Infants should not be fed with breast milk from mothers with confirmed or suspected of 2019-nCoV. If the suspected or diagnosed mother and her breast milk test negative for 2019-nCoV, infants should be fed with breast milk. Donor milk can be considered for use after being screened for 2019-nCoV, because the virus may be excreted into the milk during the incubation period.	Chinese expert consensus recommends that infants should not be fed with breast milk from mothers with confirmed or suspected 2019-nCoV. Donor milk can be considered after screening for 2019-nCoV.	Wang L, Shi Y, Xiao T et al.; on behalf of the Working Committee on Perinatal and Neonatal Management for the Prevention and Control of the 2019 Novel Coronavirus Infection. Chinese expert consensus on the perinatal and neonatal management for the prevention and control of the 2019 novel coronavirus infection (First edition). Ann Transl Med 2020;8(3):47. doi: 10.21037/atm.2020.02.20
Children, viral pneumonia, pediatric management, prevention, China	4-Feb-20	Management plan for prevention and control of novel coronavirus pneumonia among children in Xiangya Hospital of Central South University.	Chinese Journal of Contemporary Pediatrics	Article in Mandarin; Abstract in English	Under the organization of the Xiangya Hospital of Central South University, the Department of Pediatrics has formulated an action plan with Xiangya unique model to prevent and control novel coronavirus pneumonia (NCP) among children according to the current epidemic situation and diagnostic and therapeutic program in China. For perinatal newborns, breastfeeding is not recommended for infants born to women who are suspected or confirmed with NCP, but the women should express milk regularly to ensure lactation. Breastfeeding is not feasible until infected mothers are cured.	Clinicians at Xiangya Hospital in China do not recommend breastfeeding for infants born to women with suspected or confirmed COVID-19 pneumonia. Women should express milk regularly to ensure lactation.	Peng, J., Wang, X., Yang, M. H., Wang, M. J., & Zheng, X. R. (2020). Management plan for prevention and control of novel coronavirus pneumonia among children in Xiangya Hospital of Central South University. Zhongguo dang d ai er ke za zhi, 22(2), 100-105. 2020 Feb. DOI: 10.7499/j.issn.1008-8830.2020.02.004
Perinatal and neonatal management, prevention, China	1-Feb-20	Perinatal and neonatal management plan for prevention and control of 2019 novel	Chinese Journal of Contemporary Pediatrics	Article in Mandarin; Abstract in English	Pregnant women with COVID-19 in critical condition should be isolated from infants for 14 days after delivery. After the mother is cured, breastfeeding can be initiated. High-risk infants, including those who have been in close contact with confirmed family members and caregivers, or have been exposed to sources of infection in public places, are not recommended to breastfeed. If they are fed with donor milk, the milk should be pasteurized.	This editorial from a working group for the prevention and control of neonatal 2019-nCoV in China states that breastfeeding should be avoided for infants born	Working Group for the Prevention and Control of Neonatal 2019-nCoV Infection in the Perinatal Period of the Editorial. Perinatal and neonatal management plan for

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		coronavirus infection (1st Edition).				to mothers with confirmed COVID-19 infection, until after the mother is cured.	prevention and control of 2019 novel coronavirus infection (1st Edition). Chinese Journal of Contemporary Pediatrics, 2020, 22(2): 87-90. DOI: 10.7499/j.issn.1008-8830.2020.02.001