



# Covid-19 in neonates, pregnancy and paediatrics: October 2021

*A selection of recent guidelines and evidence.*

*Includes vaccines in pregnancy.*

General

Vaccinations

Covid-19 in neonates

Covid-19 in pregnancy/birth

➤ Vertical Transmission

Covid-19 in paediatrics

Child and Adolescent Mental Health

Domestic Abuse

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## General

[COVID-19 - research evidence summaries](#)

RCPCH, 19 Oct 2021.

A summary of key evidence regarding COVID-19 in neonates, children and young people.

**Differential impact of COVID-19 in pregnant women from high-income countries and low- to middle-income countries: A systematic review and meta-analysis.**

International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics; Oct 2021; vol. 155 (no. 1); p. 48-56

Gajbhiye, Rahul K et al.

**Abstract:** BACKGROUND SARS-CoV-2 has infected a large number of pregnant women. OBJECTIVE To compare clinical, perinatal outcomes of women with COVID-19 from high-income countries (HICs) and low- to middle-income countries (LMICs). SEARCH STRATEGY Online databases were searched. SELECTION CRITERIA Original studies on pregnant women with COVID-19 were included. DATA COLLECTION AND

EL. 1.11.2021

ANALYSIS Information on clinical presentation, co-morbidities, pregnancy outcomes, neonatal outcomes, and SARS-CoV-2 infection in neonates was extracted. MAIN RESULTS The pooled estimate of SARS-CoV-2 positive neonates is 3.7%. Symptomatic presentations are less common in LMICs compared to HICs (odds ratio [OR] 0.38). Diabetes (OR 0.5), hypertension (OR 0.5), and asthma (OR 0.14) are commonly reported from HICs; hypothyroidism (OR 2.2), anemia (OR 3.2), and co-infections (OR 6.0) are commonly reported in LMICs. The overall risk of adverse pregnancy outcomes is higher in LMICs compared to HICs (OR 2.4). Abortion (OR 6.2), stillbirths (OR 2.0), and maternal death (OR 7.8) are more common in LMICs. Preterm births and premature rupture of membranes are comparable in both groups. Neonatal deaths (OR 3.7), pneumonia (OR 7.5), and neonatal SARS-CoV-2 infection (OR 1.8) are commonly reported in LMICs. CONCLUSIONS In LMICs, pregnant women and neonates are more vulnerable to adverse outcomes due to COVID-19. PROSPERO registration no: CRD42020198743.

### [Does the presence of symptoms affect pregnancy outcomes in third trimester in women with SARS-CoV-2?](#)

The Journal of Maternal-Fetal & Neonatal Medicine, 10 Oct 2021

Linda Harel, Elior Eliaji, Shirlee Jaffe Lifshitz et al.

**Objective** Parturients with symptoms to COVID-19 have an increased risk for neonatal adverse outcomes and for any adverse outcome compared to the asymptomatic COVID-19 positive parturients and to the COVID-19-negative parturients. The purpose of this study was to determine the effect of COVID-19 on obstetric outcomes based on symptom status of parturients at or near term.

**Methods** Retrospective cohort study of parturients diagnosed with COVID-19 between 26 March and 30 September 2020. Maternal and neonatal outcomes were assessed by comparing three groups of parturients: COVID-19 negative, asymptomatic COVID-19, and symptomatic COVID-19.

**Results** A total of 2299 COVID-19-negative parturients and 172 patients with confirmed diagnosis of COVID-19 delivered during the study period. The median gestational age at the time of delivery was 39 (interquartile range 39-40) weeks. The most common symptom was cough (28/56, 50%). Gestational diabetes mellitus was significantly less common in COVID-19-negative than in COVID-19-positive patients. There was no significant increase in cesarean delivery in women who were COVID-19 positive and the incidence of preterm deliveries was not significantly different among the three groups. Of the 172 cases of COVID-19, only one parturient needed mechanical ventilation, and there were no maternal deaths in this group. There were no cases of severe neonatal asphyxia or neonatal death. Composite maternal adverse outcomes were not significantly different between the three groups. The aOR for composite neonatal adverse outcome and overall composite adverse outcome comparing COVID-19 positive to negative parturients was 2.1 (95% confidence interval [CI], 1.1-3.8; p=??.02) and 1.6 (95% CI, 1.1-2.3; p=??.02), respectively.

**Conclusions** An increased risk for neonatal adverse outcomes and for any adverse outcome was found in the symptomatic COVID-19 group compared to the asymptomatic COVID-19-positive parturients and to the COVID-19-negative parturients.

## Vaccinations

### [COVID-19: Pregnancy issues and antenatal care: Vaccines](#)

UpToDate, 22 Oct 2021

The latest evidence summary.

### [COVID-19 vaccination: women of childbearing age, currently pregnant or breastfeeding](#)

UK Health Security Agency (UKHSA) (formerly Public Health England), 8 Oct 2021.

Guidance for all women of childbearing age, those currently pregnant or breastfeeding on coronavirus (COVID-19) vaccination. Includes posters and leaflets in accessible formats and other languages.

EL. 1.11.2021

[Pre COVID-19 vaccination booking checklist for parents of children aged 12 to 15 years](#)

UK Health Security Agency (UKHSA) (formerly Public Health England), 12 Oct 2021  
Guidance for parents in preparation for taking children for a coronavirus (COVID-19) vaccine.

[COVID-19 vaccination of children and young people aged 12 to 17 years.](#)

JCVI, 4 Aug 2021

[COVID-19 vaccination: resources for children and young people](#)

UK Health Security Agency (UKHSA) (formerly Public Health England), 13 Oct 2021.  
In various versions, including child-friendly and accessible.

## Covid-19 in neonates

[Breastfeeding with COVID-19 infection](#)

Specialist Pharmacy Service, 12 Oct 2021

It is recommended that breastfeeding should continue if the mother has COVID-19 infection.

[Using Tocilizumab or Sarilumab for hospitalised patients with COVID-19 who are breastfeeding](#)

Specialist Pharmacy Service, 12 Oct 2021

Tocilizumab and sarilumab can be used off-label to treat hospitalised patients with COVID-19. Breastfeeding of full-term and healthy infants can continue if treatment with tocilizumab and sarilumab are required. If the infant was born prematurely, is unwell, or the mother is taking multiple medicines, the UK Drugs in Lactation Advisory Service should be contacted.

[Newborn Evaluation and Care](#)

UpToDate, 18 Oct 2021.

The latest evidence summary.

In [COVID-19: Labor, delivery, and postpartum issues and care](#)

[COVID-19 pandemic: Frequently asked questions within neonatal services](#)

BAPM, hosted on RCPCH website. Updated 20 Sep 2021.

Includes flowcharts for management of babies at delivery and neonatal admissions.

## Covid-19 in pregnancy/birth

[Severe Acute Respiratory Syndrome Coronavirus 2 and Pregnancy Outcomes According to Gestational Age at Time of Infection.](#)

Emerging infectious diseases; Oct 2021; vol. 27 (no. 10); p. 2535-2543

Badr, Dominique A. et al.

**Abstract:** We conducted an international multicenter retrospective cohort study, PregOutCOV, to examine the effect of gestational age at time of infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on obstetric and neonatal outcomes. We included all singleton pregnancies with a live fetus at 10 weeks' gestation in which pregnancy outcomes were known. The exposed group consisted of patients infected with SARS-CoV-2, whereas the unexposed group consisted of all remaining patients during the same

EL. 1.11.2021

period. Primary outcomes were defined as composite adverse obstetric outcomes and composite adverse neonatal outcomes. Of 10,925 pregnant women, 393 (3.60%) were infected with SARS-CoV-2 (exposed group). After matching for possible confounders, we identified statistically significant increases in the exposed group of composite adverse obstetric outcomes at >20 weeks' gestation and of composite adverse neonatal outcomes at >26 weeks' gestation ( $p < 0.001$ ). Vaccination programs should target women early in pregnancy or before conception, if possible.

#### [Maternal exposure to hydroxychloroquine and birth defects.](#)

Birth defects research; Oct 2021; vol. 113 (no. 17); p. 1245-1256

Howley, Meredith M. et al.

**Abstract:** BACKGROUND Hydroxychloroquine is a treatment for rheumatic disease and considered safe during pregnancy. Interest in hydroxychloroquine has increased as it is being examined as a potential treatment and prophylaxis for coronavirus disease 2019. Data on the risks of specific birth defects associated with hydroxychloroquine use are sparse. METHODS Using data from two case-control studies (National Birth Defects Prevention Study and Slone Epidemiology Center Birth Defects Study), we described women who reported hydroxychloroquine use in pregnancy and the presence of specific major birth defects in their offspring. Cases had at least one major birth defect and controls were live-born healthy infants. Women self-reported medication use information in the few months before pregnancy through delivery. RESULTS In total, 0.06% (19/31,468) of case and 0.04% (5/11,614) of control mothers in National Birth Defects Prevention Study, and 0.04% (11/29,838) of case and 0.05% (7/12,868) of control mothers in Birth Defects Study reported hydroxychloroquine use. Hydroxychloroquine users had complicated medical histories and frequent medication use for a variety of conditions. The observed birth defects among women taking hydroxychloroquine were varied and included nine oral cleft cases; the elevated observed:expected ratios for specific oral cleft phenotypes and for oral clefts overall had 95% confidence intervals that included 1.0. CONCLUSION While teratogens typically produce a specific pattern of birth defects, the observed birth defects among the hydroxychloroquine-exposed women did not present a clear pattern, suggesting no meaningful evidence for the risk of specific birth defects. The number of exposed cases is small; results should be interpreted cautiously.

#### [Using Tocilizumab or Sarilumab for hospitalised patients with COVID-19 who are pregnant](#)

Specialist Pharmacy Service, 12 Oct 2021

This page signposts to current guidance on this off-label use of the two medicines from the UK Royal College of Obstetricians and Gynaecologists and UKTIS. Healthcare professionals are encouraged to contact UKTIS should they be considered for use.

#### [COVID-19: Pregnancy issues and antenatal care](#)

UpToDate, last updated 22 Oct 2021.

The latest evidence summary.

#### [Management of labor and birth](#)

UpToDate, 18 Oct 2021.

The latest evidence summary.

In [COVID-19: Labor, delivery, and postpartum issues and care](#)

#### [Coronavirus disease 2019 \(COVID-19\): pregnancy-related complications](#) [scroll down]

BMJ Best Practice, updated 14 Oct 2021.

## Vertical Transmission

### [Vertical transmission of SARS-CoV-2: A prospective cross-sectional study from a tertiary center.](#)

Journal of medical virology; Oct 2021; vol. 93 (no. 10); p. 5864-5872

Sinaci, Selcan et al.

**Abstract:** The aim was to investigate the association of the delivery mode and vertical transmission of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) through the samples of vaginal secretions, placenta, cord blood, or amniotic fluid as well as the neonatal outcomes. This cross-sectional study presents an analysis of prospectively gathered data collected at a single tertiary hospital. Sixty-three pregnant women with confirmed coronavirus disease 2019 (COVID-19) participated in the study. Vertical transmission of SARS-CoV-2 was analyzed with reverse transcriptase-polymerase chain reaction (RT-PCR) tests and blood tests for immunoglobulin G (IgG)-immunoglobulin M (IgM) antibodies. All patients were in the mild or moderate category for COVID-19. Only one placental sample and two of the vaginal secretion samples were positive for SARS-CoV-2. Except for one, all positive samples were obtained from patients who gave birth by cesarean. All cord blood and amniotic fluid samples were negative for SARS-CoV-2. Two newborns were screened positive for COVID-19 IgG-IgM within 24 h after delivery, but the RT-PCR tests were negative. A positive RT-PCR result was detected in a neonate whose placenta, cord blood, amniotic fluid, and vaginal secretions samples were negative. He died due to pulmonary hemorrhage on the 11th day of life. In conclusion, we demonstrated that SARS-CoV-2 can be detectable in the placenta or vaginal secretions of pregnant women. Detection of the virus in the placenta or vaginal secretions may not be associated with neonatal infection. Vaginal delivery may not increase the incidence of neonatal infection, and cesarean may not prevent vertical transmission. The decision regarding the mode of delivery should be based on obstetric indications and COVID-19 severity.

### [Vertical Transmission of COVID-19.](#)

Indian journal of Pediatrics; Oct 2021; vol. 88 (no. 10); p. 1058

Tripathi, Shalini et al.

**Publication Type(s):** Letter

A review of hospital records of neonates delivered to 176 COVID-positive mothers admitted to the King George's Medical University (KGMU), Lucknow, mid-May to mid-December 2020. All these neonates were tested by RT-PCR of nasopharyngeal swab within 48 h of birth.

### **Mother-to-child transmission of severe acute respiratory syndrome coronavirus 2: review of classification systems and systematic reviews.**

Current opinion in obstetrics & gynecology; Oct 2021; vol. 33 (no. 5); p. 391-399

Ansari, Kehkashan et al.

**Abstract:** PURPOSE OF REVIEW To review the various classification systems for mother-to-child transmission (MTCT) of SARS-CoV-2 and collate existing evidence on systematic reviews of MTCT of SARS-CoV-2. RECENT FINDINGS To-date, there are three classification systems for MTCT of SARS-CoV-2, including the WHO classification developed by expert consensus, based on in-utero, intrapartum and postnatal exposure of the babies to the virus. The systems variously classify babies tested for suspected SARS-CoV-2 infection as confirmed, probable, possible, indeterminate and unlikely for MTCT. To-date, 68 systematic reviews have been published between December 2019 and March 2021 on SARS-CoV-2 MTCT. Most of the reviews included cases series and case reports in their pooling of data, and often used SARS-CoV-2 infection and test positivity interchangeably. SUMMARY Several classification systems are available to assist in determining the timing of SARS-CoV-2 infection in new-borns. Existing reviews of MTCT are of poor quality and report variable

EL. 1.11.2021

rates of SARS-CoV-2 positivity. A high-quality systematic review is needed on the extent of confirmed vertical transmission of SARS-CoV-2, risk factors for MTCT of SARS-CoV-2, the prevalence and persistence of viral particles or immunological response in reported biological samples. Primary studies should categorize MTCT using classifications, such as WHO classification system that considers the strength of the timing of classification and persistence of positivity, taking into account the sterility of the collected samples.

### [Frequency of congenital infection](#)

UpToDate, updated 22 Oct 2021.

The latest evidence summary within [COVID-19: Pregnancy issues and antenatal care](#)

Or Search for “vertical” or “transmission” in the text using the Find tool top right.

## Covid-19 in paediatrics

### [\(UK\) Study casts new light on long COVID in young people](#)

Medscape, Sept 2021

Fewer children and young people may have long COVID than previously feared, according to preliminary findings.

The world's largest study into the condition found that almost 1 in 7 young people infected with Sars-Cov-2 could have symptoms linked to the virus 15 weeks after infection, scientists said.

- Pre-print study: [Long COVID - the physical and mental health of children and non-hospitalised young people 3 months after SARS-CoV-2 infection; a national matched cohort study \(The CLoCk\) Study](#)

### **Imaging pediatric acute appendicitis during the coronavirus disease 2019 (COVID-19) pandemic: collateral damage is variable.**

Pediatric radiology; Oct 2021; vol. 51 (no. 11); p. 1991-1999

Horst, Kelly K et al.

**OBJECTIVE** We studied indirect effects of COVID-19 on the imaging workup and outcomes for pediatric patients at our center who had acute appendicitis during the pandemic.

**CONCLUSION** There was a large drop in the number of pediatric patients imaged for acute appendicitis during the acute phase of the COVID-19 pandemic despite similar numbers of patients treated. The utilization trends of US vs. CT remained stable between time periods. The differences in imaging findings and perforation rates were less pronounced compared to other published studies.

### [COVID-19: clinical manifestations and diagnosis in children](#)

UpToDate, last updated 25 Oct 2021.

The latest evidence summary.

### [Coronavirus disease 2019 \(COVID-19\)/complications: paediatric inflammatory multisystem syndrome \[scroll down\]](#)

BMJ Best Practice, updated 14 Oct 2021.

A rare, but severe condition, reported in children and adolescents approximately 2 to 4 weeks after the onset of COVID-19, likely due to a post-infectious inflammatory process.

## Child and Adolescent Mental Health

[Mental Health of Children and Young People in England 2021 - wave 2 follow up to the 2017 survey](#)

NHS Digital, 30 Sep 2021.

This is the second (wave 2) in a series of follow up reports to the Mental Health and Young People Survey (MHCYP) 2017, exploring the mental health of children and young people in February/March 2021, during the Coronavirus (COVID-19) pandemic and changes since 2017. Experiences of family life, education, and services during the COVID-19 pandemic are also examined.

[Coronavirus \(COVID-19\) advice and support for parents and carers](#)

NSPCC, 2021

Tips and advice for a range of issues, including talking to children worried about coronavirus.

## Domestic Abuse

[Domestic abuse: how to get help](#)

Home Office, last updated 28 Oct 2021 with translations for non-English speakers.

[Sources of help for children](#). [Scroll down for information and links to related organisations].