

COVID & PREGNANCY RESEARCH

Updated as new studies are published

Maternal SARS-CoV-2 infection during the first trimester was correlated with statistically significant reductions in neonatal birth weight and length, suggesting compromised early fetal growth. Infections acquired later in gestation appear less detrimental to overall body size but may affect neurodevelopmental parameters, as hinted by the observed variations in head circumference.

<https://scienmag.com/trimester-of-covid-infection-affects-newborn-size/>

A study involving nearly 27,000 pregnancies suggests that women infected with COVID-19 before or during pregnancy are at two to three times the risk for miscarriage before 20 weeks' gestation.

<https://www.cidrap.umn.edu/covid-19/covid-or-during-pregnancy-may-confer-2-3-times-risk-miscarriage>

Around 11.6% of toddlers born to mothers with lab-confirmed SARS-CoV-2 infection during pregnancy showed cognitive, motor, or language problems indicative of neurodevelopmental delays. By comparison, only two of 128 unexposed controls — 1.6% — showed such issues.

<https://www.bloomberg.com/news/articles/2024-12-26/covid-may-have-led-to-autism-and-developmental-delays-in-babies-study-shows/>

Severe COVID-19 infections during pregnancy may lead to neurodevelopmental delays in infants.

<https://www.monash.edu/medicine/news/latest/2024-articles/monash-study-links-severe-maternal-covid-19-to-infant-developmental-delays>

Per the most recent CDC data on maternal mortality, in 2021 infection was the most frequent underlying cause of death (48.8%) and COVID-19 accounted for 40.5% of all pregnancy-related death.

<https://www.cdc.gov/maternal-mortality/php/pregnancy-mortality-surveillance/index.html>

Maternal COVID infections may affect newborn heart development. 10.08% of the newborns in the COVID-19 group had abnormalities, compared with 4.13% in the control group.

<https://www.cidrap.umn.edu/covid-19/maternal-covid-infections-may-affect-newborn-heart-development>

Patients infected with SARS-CoV-2 in the early months of pregnancy are at an approximate 50% greater risk of developing preeclampsia.

<https://www.contemporaryobgyn.net/view/second-trimester-covid-19-linked-increased-preeclampsia-risk>

SARS-CoV-2 infection is tied to increased preterm birth (PTB), high blood pressure during pregnancy, and severe maternal morbidity.

<https://www.cidrap.umn.edu/covid-19/covid-19-linked-increased-preterm-birth-other-problems-pregnancy>

COVID-19 infection at any time during pregnancy boosts the mother's risk of death and is associated with serious illness in both mothers and their newborns, finds a pooled data analysis of international evidence, published in the open access journal **BMJ Global Health**.

<https://www.bmj.com/company/newsroom/covid-19-infection-at-any-time-during-pregnancy-boosts-mothers-risk-of-death/>

DNA changes consistent with life-threatening pregnancy complications have been found in the placentas of pregnant women infected by COVID-19, according to University of Queensland researchers.

<https://medicalxpress.com/news/2024-02-dangerous-pregnancy-complications-linked-covid.html>

New UCLA-led research finds that infants born full term to mothers who were infected with COVID-19 during pregnancy had three times the risk of having respiratory distress compared with unexposed infants, even though they themselves were not infected with the virus. The risk was significantly lower when the mothers infected during pregnancy were previously vaccinated.

<https://medicalxpress.com/news/2024-01-infants-born-covid-infected-mothers.html>

SARS-CoV-2 infections during pregnancy are associated with placental lesions from vascular malperfusion, which can result in increased rates of fetal growth restriction, pre-labor membrane rupture, and miscarriage. Vascular damage was also observed in the organs of the fetuses via fetal MRIs.

<https://www.forbes.com/sites/williamhaseltine/2023/01/25/covid-19-infection-during-pregnancy-can-damage-the-placenta-and-the-fetus/>

According to a recent study published in the American Journal of Obstetrics & Gynecology, COVID-19 infection is associated with fetal demise. (Miscarriage and stillbirth)

<https://www.contemporaryobgyn.net/view/covid-19-infection-associated-with-fetal-demise>

COVID can attack and destroy the placenta, a vascular organ that serves as a fetus's lifeline, leading to asphyxiation and stillbirth, according to the study in the journal Archives of Pathology & Laboratory Medicine. "We have never seen this level of destruction from an infectious illness before. It rendered the placenta unfit to carry out its duties," said Dr. David Schwartz, a perinatal pathologist in private practice in Atlanta, who led the study.

<https://www.nbcnews.com/health/health-news/covid-stillbirths-coronavirus-can-severely-damage-placenta-pregnant-wo-rcna15534>

SARS-CoV-2 messes with the brain development of unborn babies. It wrecks microglia in the fetal brain. This leads to various brain development problems, from learning issues to serious disorders.

<https://www.medrxiv.org/content/10.1101/2023.12.29.23300544v1>

COVID damages the placenta. This study confirms that placenta damage rather than an infection of the fetus is the likely cause of many COVID-19-related stillbirths

<https://apnews.com/article/coronavirus-pandemic-science-health-2ac91326c0cd16f67eba01885516ef2d>

This study reports: COVID+ during pregnancy associated with 2x rates of their babies DX'd w/developmental delays than controls (6.3% vs 3.0% respectively). The most common developmental delays the study saw in babies from pregnancies with a COVID+ were motor, language, and speech disorders.

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2793178>

Babies whose mothers were infected with the coronavirus during pregnancy may face a higher risk of brain development disorders such as autism and bipolar disorder, a new study that examined more than 7,500 births suggests.

<https://t.co/y5mM9vSIDQ>

New study shows getting COVID-19 when pregnant increases risks of hospitalization, premature birth, ICU admissions. "It basically bumps pregnant women into a much older risk category, and mostly pregnant women look pretty darn healthy so we don't necessarily associate that with risk for complications."

<https://www.halifaxexaminer.ca/government/province-house/new-study-shows-getting-covid-19-when-pregnant-increases-risks-of-hospitalization-premature-birth-icu-admissions/>

Women who gave birth within 28 days of a positive COVID test died at a significantly higher rate than their healthy counterparts... They were also more prone to poor birth outcomes, even if they weren't severely ill.

<https://www.cidrap.umn.edu/covid-19-worsens-maternal-fetal-outcomes-studies-find>

Study shows infants exposed to COVID in utero at risk for developmental delay. 10% of children whose mothers had COVID during pregnancy had an abnormality on ultrasound of the head.

<https://www.cidrap.umn.edu/covid-19/study-shows-infants-exposed-covid-utero-risk-developmental-delay>

Various vascular pathological changes in placenta have been associated with the COVID-19 infection during pregnancy. These changes mainly include thrombosis, malperfusion and vasculopathy in both maternal and foetal circulations.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10191727/>

COVID-19 during pregnancy damages the placenta's immune response to further infections.

<https://t.co/B0tDtG2gyZ>

Fetal lung volume significantly reduced in pregnant women who had COVID19. Reduced to 69% if first trimester infection, to 91% if third trimester infection.

[https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(22\)00060-1/fulltext](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(22)00060-1/fulltext)

Testing positive for covid-19 after 34 weeks of pregnancy has been linked with a seven-fold higher risk of giving birth prematurely.

<https://t.co/477FeJx9X3>

50% of the study participants' placentae exhibited abnormal morphologic features. Furthermore, pregnant women with COVID-19 and abnormal placental morphologies were associated with poor pregnancy outcomes.

<https://www.news-medical.net/news/20220807/Study-finds-COVID-associated-with-abnormal-placental-pathologies-in-nearly-5025-of-cohort.aspx>

The study found pregnant women who got COVID-19 had an almost two-fold higher risk of preeclampsia, as well as other severe outcomes, including maternal mortality, severe infection, and preterm birth.

<https://www.ksat.com/news/local/2022/08/24/preeclampsia-almost-doubled-for-women-who-had-covid-19-while-pregnant-new-study-shows/>

“COVID-19 Infection May Induce Fetal Brain Hemorrhages, Scientists Warn”

<https://www.sciencealert.com/covid-19-infection-may-induce-fetal-brain-hemorrhages-scientists-warn>

A recent analysis published by Epic Research noted that COVID-19 infection in utero was linked to congenital cardiovascular abnormalities despite infants having a typical growth pattern.

<https://lifesciencesintelligence.com/features/developmental-outcomes-linked-to-covid-19-exposure-during-pregnancy>

This study found statistical evidence of association between the Covid-19 pandemic and increased incidence of congenital anomalies. The types of abnormalities that have significantly increased in this pandemic include CNS & genitourinary anomalies

<https://ijponline.biomedcentral.com/articles/10.1186/s13052-022-01368-6>