

## **Caring for Pregnant Patients With Asthma During the COVID-19 pandemic**

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There is limited information about COVID-19 and pregnancy. We hope the following information will be useful to practicing allergists and their patients.

### **Does pregnancy increase the need for critical care in the setting of COVID-19 infection?**

Historically, pregnant individuals have been thought to be at increased risk of severe morbidity and mortality from specific respiratory infections, such as flu and SARS. As of June 7, 2020, a total of 8,207 cases of COVID-19 in pregnant women were reported to the Centers for Disease Control and Prevention (CDC). Pregnant women were 5.4 times more likely to be hospitalized, 1.5 times more likely to be admitted to the ICU, and 1.7 times more likely to receive mechanical ventilation when compared with nonpregnant women. ICU admission was more frequently reported in women aged 35-44. However, the data did not distinguish hospitalizations for COVID-19 from hospital admissions for pregnancy-related conditions. A recent meta-analysis of 77 studies from China, Europe and the United States reported that high body mass index, chronic hypertension, and pre-existing diabetes were associated with severe COVID-19 in pregnancy. Pre-existing comorbidity was a risk factor for admission to the ICU (odds ratio 4.21, 95% confidence interval 1.06-16.720) and invasive ventilation (odds ratio 4.48, 95% confidence interval 1.40-14.37). Pregnant women should be counseled about the potential risk for severe illness from COVID-19 and conscientiously take the same precautions as the general public to prevent infection, particularly if they have comorbid conditions mentioned above. If they do become sick, prompt management of symptoms is important.

### **Is timing of delivery affected by COVID-19?**

Having severe symptoms or complications from any illness might affect timing of delivery. Reports of women hospitalized with symptoms of COVID-19 during the second and third trimesters of pregnancy have included preterm deliveries, but it is not clear if these were due to the mother's infection or other reasons. For women with suspected or confirmed COVID-19 in the third trimester who recover, it is reasonable to attempt to postpone elective delivery until a negative test result is obtained in an attempt to avoid transmission to the neonate.

### **Does COVID-19 present an increased risk of adverse perinatal and fetal outcomes?**

It's too early for researchers to know how COVID-19 might affect a fetus. Some pregnant women with COVID-19 have had preterm births and early reports showed a higher rate of delivery by caesarean sections. **Multiple small studies from China have shown that severe maternal and neonatal complications have not been observed for pregnant women with COVID-19.** In limited reports of infants born to women with COVID-19 illness around the time of delivery, most newborns have not had evidence of infection. However, a small number of newborns have tested positive for the virus soon after delivery. This suggests the possibility that the virus could pass from a mother to a baby during pregnancy, but more research is needed.

A study from the UK compared rates of stillbirth and preterm delivery in pre-pandemic and pandemic cohorts. The incidence of stillbirth was significantly higher during the pandemic period (9.31 per 1,000 births) versus the pre-pandemic period (2.38 per 1,000 births). There was no increase in the incidence of preterm births. Interestingly, none of the women who experienced stillbirths had symptoms suggestive of SARS-CoV-2 infection, so the reasons for this increase remain unclear. A recent meta-analysis reported that pregnant women with COVID-19 are at increased risk of delivering a preterm birth (odds ratio 3.01, 95% confidence interval 1.16-7.85). However, this is based on a small number of studies with significant heterogeneity.

### **Are there special considerations for pregnant women with asthma?**

Few data exist to indicate that having asthma is associated with an increased risk of becoming infected with COVID-19 or a more severe course in the non-pregnant infected patient. Recent reassuring data show that having asthma was not associated with an increased risk of hospitalization or even mortality in COVID-19 hospitalized patients. There are even fewer data for pregnant asthmatic women with COVID-19. However, the CDC does indicate that those with moderate to severe asthma might be at a higher risk for severe illness from COVID-19. In one study of 46 pregnant women with COVID-19 infection, four had asthma. Of the six women with severe disease in that study, two had asthma, but one was overweight and the other was obese with hypertension. Current recommendations emphasize the need to maintain asthma control during pregnancy. Reducing controller therapy could put pregnant women with asthma at increased risk of an asthma exacerbation necessitating medical care, which could then put them at an increased risk of being exposed to COVID-19.

### **Is breastfeeding safe during COVID-19 infection?**

Breast milk provides protection against serious childhood infections. Women are often encouraged to continue breastfeeding or providing breast milk even when they are sick with a virus, such as the flu. Information about COVID-19 in breastfeeding women is limited at this time. Most case reports have not detected the virus in the breastmilk of infected mothers. In a study of 18 women with confirmed SARS-CoV-2 infection, one breast milk sample had detectable SARS-CoV-2 RNA, but the viral culture for that sample was negative. No other breast milk samples from the 18 women had evidence of infectious virus. This suggests that breast milk may not be a potential source of infection for the infant.

### **Are there ongoing studies to which pregnant women could be referred?**

Researchers are still learning how COVID-19 affects pregnant women. As part of their pregnancy studies, the organization MotherToBaby is interested in examining the short and long-term effects of COVID-19 in pregnancy and breastfeeding. This study will consist of phone calls over the course of the pregnancy and post-delivery, release of medical records related to the pregnancy and infant's development, and collection of breast milk samples. If you have a pregnant or breastfeeding patient

with COVID-19, please consider referring them at [mothertobaby.org](https://mothertobaby.org) or by calling (866) 626-6847.

Women diagnosed with COVID-19 from all countries may enroll in the International Registry of Coronavirus Exposure in Pregnancy (IRCEP). Women can enroll and provide information to IRCEP via website and mobile app. The study will collect data on reproductive history, COVID-19 infection test, and symptoms. Women will complete monthly modules until post-partum, and medical records from the mother and neonate will be requested. If you have a pregnant patient with COVID-19, consider enrolling them at [ircep.preregistry.com](https://ircep.preregistry.com).

The Vaccines and Medications in Pregnancy Surveillance System (VAMPSS) also is continuing to study asthma medications during pregnancy. VAMPSS is a nationwide post-marketing surveillance system established to comprehensively monitor the use and safety of vaccines and medications during pregnancy, coordinated by the AAAAI. You can learn more about VAMPSS at the [AAAAI website](https://www.aaaai.org). If you have a pregnant patient with asthma, please consider referring them to participate in the VAMPSS studies at [mothertobaby.org](https://mothertobaby.org) or by calling (866) 626-6847.

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