

# Coronavirus (COVID-19)

## Information for women who are concerned about coronavirus (covid-19) during pregnancy or breastfeeding

The information provided below is for readers based in the United States of America. Readers outside of the United States of America should seek the information from local sources.

Note: if you are pregnant, or have been pregnant recently, and were diagnosed with COVID-19 or had a clinical diagnosis of COVID-19 by a health care professional, consider enrolling in the **International Registry of Coronavirus Exposure in Pregnancy (IRCEP)**. Go to <https://ircep.pregistry.com>. Your experience can help thousands of other pregnant women around the world.

### What is CoViD-19 during pregnancy?

*CoViD-19* is an acronym that stands for coronavirus disease of 2019. This disease is a pandemic, a disease that is spreading throughout much of the world. Covid-19 is caused by a virus known as SARS-CoV-2 (pronounced *sarz-co-vee-2*). A virus is a tiny particle consisting of genetic material called nucleic acid, encased by an outer layer of protein, called a protein coat or a capsid. Some viruses, including SARS-CoV2, also are covered with a fat-like envelope called a lipid bilayer. Viruses are on the boundary between living and not-living. Viruses have the ability to reproduce, like living things, but living things can also change certain chemicals into other chemicals, and viruses cannot do this. Furthermore, in order to produce baby viruses, a virus must hijack the machinery inside a living cell. The term *coronavirus* refers to a family of viruses that includes SARS-CoV-2 and several other coronaviruses that can infect human beings, most of which cause only common colds, but two of them cause disease as serious as Covid-19. Coronaviruses get their name from a crown-like, or *coronal* structure that is visible in a virus particle when it is viewed with a very powerful type of microscope called an electron microscope. This coronal structure is the result of a multiple molecules of a particular protein, called the spike protein, protruding outward around the viral particle, similar to the spikes of the crown of the Statue of Liberty. The spike proteins are important, because the virus uses them to attach to a certain protein, called ACE 2, that is present on the surface of various types of body cells.

A living thing that is infected by a virus is called a host. Often, viruses can infect a host without harming the host, or without causing severe damage. This is true, even with many people who become infected with the SARS-CoV-2 virus. Many infected people do not suffer any symptoms, while many others suffer only symptoms of a cold. Others suffer flu-like symptoms, however, while a fraction of people with COVID-19 become critically ill, and many of them die.

### **How common is COVID-19 during pregnancy?**

Because the virus spreads easily between people, because it can take several days for symptoms to develop after a person is infected, and because many people who carry the virus never experience symptoms at all, COVID-19 have been spreading rapidly since January, 2020. Since that time, however, COVID-19 has gone through peaks and declines on different timelines in different countries and regions within countries. As of the updating of this report in late June, 2020, more than 9.3 million cases have been reported world, whereas the death toll worldwide is approaching 480,000. Also as of late June, the highest number of cases have been reported in the United States (2.5 million), followed by Brazil (1.15 million), Russia, India, and the United Kingdom. Whereas the US and Brazil also lead in the number of deaths at 123,472 and 52,771, respectively, the UK is third in number of reported COVID-19 deaths (42,927), followed by Italy (34,675), France (29,729), Spain (28,325), and Mexico (22,584).

Factors that increase the risk of developing severe disease in those who are infected with SARS-CoV2 include high blood pressure, diabetes, asthma, smoking (or vaping), obesity, and older age. Additionally, data are highly suggestive that vitamin D deficiency (low levels of vitamin D in the blood) increases the risk both of getting infected and suffering severe disease, while there is suspicion that exposure to a higher load of virus particles might produce severe disease more likely than a smaller exposure dose.

The numbers likely exclude many mild and asymptomatic (symptom-free) cases, which include an unknown number of pregnant women.<sup>3</sup> With the numbers changing rapidly in many countries as of June, 2020, it is challenging to hone in on the prevalence of COVID-19 during pregnancy. The situation is further complicated by the fact that health authorities recommend that people with mild respiratory symptoms who may possibly be infected including pregnant women do not get tested, because going out, in order to get tested, could further spread the virus if they are indeed infected.

### **How is COVID-19 during pregnancy diagnosed?**

To be tested for the presence of the SARS-CoV-2 virus, you would provide sputum samples, samples from a swab of your nose, and, in some people, a blood sample. The samples are tested with a

technique called real-time Reverse Transcription-Polymerase Chain Reaction (rRT-PCR). In samples that carry the virus, this test produces genes of the virus that can be identified in the laboratory.<sup>2</sup> It is possible for the test to come out negative in people who have been infected (false negative), especially for those who have been infected very recently. For this reason, you may need to be tested more than once. In addition to rRT-PCR testing for evidence of the presence of the virus itself, some institutions may also test you for the presence of antibodies that your immune system has made against SARS-CoV2. There are different families of antibodies. Based on whether you have more anti-SARS-CoV2 antibodies of the family called IgM or the family called IgG in your blood, doctors can figure out how long ago you were infected. Those who test positive with the rRT-PCR test and have high levels of IgM antibodies against the virus have a new infection, whereas producing IgG and not much IgM suggests that you were infected weeks to months ago and are likely completely recovered.

### **Does COVID-19 cause problems during pregnancy?**

Very few data are available to draw any conclusions as to whether pregnant women are especially vulnerable. As with non-pregnant people, most pregnant women who are infected are likely to suffer only mild symptoms. A variety of symptoms have been reported that may occur in some people, including a fairly unusual symptom in which the person loses her sense of smell and taste more than she would lose it in the case of a common cold. Whether you are pregnant or not, if you have COVID-19, there is a chance that you will develop flu like symptoms such as fever, chills, muscle aches, lack of appetite, and nausea and vomiting. There is still a smaller chance that you will develop more serious effects, which can include respiratory distress syndrome (ARDS), disruptions of the blood clotting system, inflammation throughout the body, cardiac arrhythmias (abnormal heartbeats), kidney problems, and failure of multiple organs, all of which potentially can have fatal consequences.

### **Does COVID-19 cause problems for the baby?**

Studies of other human coronaviruses as well as a new, and a smaller amount of research on SARS-CoV2, suggest that the virus does not transfer from the mother through the womb to the fetus.<sup>1</sup> Research as of April 2020 suggests that the fetus of women with COVID-19 are not at particular risk, so long as the women do not develop severe complications. Generally, the risk to the baby depends greatly on the severity of the mothers illness.<sup>4</sup>

### **What to consider about taking medications when you are pregnant or breastfeeding:**

- The risks to yourself and your baby if you do not treat the COVID-19
- The risks and benefits of each medication you use when you are pregnant

- The risks and benefits of each medication you use when you are breastfeeding

### **What should I know about using medication to treat COVID-19 during pregnancy?**

Based on results released early from a clinical study that, as of June 2020, remain to be reviewed appropriately by other researchers and published in full (peer review), a corticosteroid medication called dexamethasone appears to benefit certain patients. According to the research, COVID-19 patients who benefit from dexamethasone are those whose illness is such that they require supplemental oxygen. Of these patients, those who require admission to the intensive care unit (ICU) with mechanical ventilation benefit even more compared to those who are in a regular hospital ward with low flow oxygen. If your oxygen saturation (the percentage of hemoglobin in your blood saturated with oxygen) is not low enough for you to be hospitalized and put on oxygen, then you will not benefit from dexamethasone. Although it entails some risk, dexamethasone can be given to pregnant women when needed. In fact, it is given in order to mature the fetal lungs in cases when premature delivery is expected.

Other drugs that are given to patients with COVID-19 and that are still being studied to determine whether they are effective include tocilizumab, given to stop what doctors call cytokine release syndrome, and remdesivir, which is designed to interfere with the ability of the virus to reproduce its genetic material, RNA, and which may possibly blunt the disease severity in certain patients. As of June, 2020, the US food and drug administration has stopped clinical trials for the drugs hydroxychloroquine and chloroquine. This is because these drugs apparently offer little benefit in comparison to risks that they entail in terms of dangerous cardiac arrhythmias while also interfering with the ability to study the effectiveness of the more promising drug, remdesivir.

In cases that develop into pneumonia, with or without ARDS, a secondary bacterial infection could develop (sometimes called a superinfection), in which case antibiotics would be needed. Antibiotic regimens are available that are appropriate for pregnancy.

### **Who should NOT stop taking medication for COVID-19 during pregnancy?**

Any pregnant woman who is diagnosed with COVID-19 would be managed very carefully, with a unique treatment plan. Do not stop taking a medication without discussing the plan with your physicians.

### **What should I know about choosing a medication for my COVID-19 during pregnancy?**

It is important to stay in communication with your health care provider as the release of new studies over time can change the outlook on the role of specific medications during pregnancy.

You may find Pregistrys expert reports about the medications to treat this condition in [www.pregistry.com/](http://www.pregistry.com/). Additional information can also be found in the sources listed below.

### **What should I know about taking a medication for my COVID-19 when I am breastfeeding?**

Research has revealed that other types human coronaviruses are not transmitted to nursing infants within breast milk. Scientists do not know for sure if the same is true of the SARS-CoV2 virus, but breast milk contains antibodies that may possibly be helpful. In women who breastfeed who have COVID-19 and/or have tested positive for the SARS-CoV2 virus, the US Centers for Disease Control and Prevention (CDC) recommends covering the mothers mouth and nose with a facemask, or a cloth, and taking all sanitary precautions before touching the baby. This means washing your hands well with soap and not touching your face before touching the baby.<sup>5</sup>

Dexamethasone is secreted in breast milk, but in very small amounts, so it is no likely to affect a nursing baby. A significant fraction of women being treated with dexamethasone for COVID-19 are on mechanical ventilation, in which case they cannot breastfeed.

### **What alternative therapies besides medications can I use to treat my COVID-19 during pregnancy?**

Anybody who develops problems in the lungs or airways is likely to need supplemental oxygen, of which there is a range of levels. Low flow oxygen through a nasal cannula (nose tube) is the most mild type of oxygen therapy and breathing support. Women who develop ARDS will require mechanical ventilation, which requires a breathing tube down the throat and admission to the ICU. In between there are different types of oxygen masks, high flow oxygen, CPAP, and BIPAP, all of which require special equipment but not necessarily ICU admission.

Other supportive treatment includes medication is given for symptoms, such as fever, fluids management. As of June 2020, researchers are investigating the effectiveness of administering convalescent plasma, consisting of antibodies from people who have recovered from COVID-19 to people who have developed the disease.

### **What can I do for myself and my baby when I have COVID-19 during pregnancy?**

Follow the instructions of your physicians. Knowledge about the disease is growing and treatment is evolving. Take action to lower the risk for yourself and your family for COVID-19 and all infectious diseases. These include hand washing with soap or hand sanitizer with alcohol, avoiding touching your

face before your hands are clean, covering your nose with mouth with the elbow region during a cough or sneeze, and cleaning surfaces that you often touch. It also means social distancing, meaning minimizing contact with other people. While social distancing policies are in place, go out only for essential needs, such as grocery shopping and maintain a distance of at least two meters between yourself and people in public, wear a mask, and wear it correctly (covering both your mouth and nose). If you are pregnant and work in a healthcare setting, speak with your employer about measures that you might take to limit your risk.

If you have tested positive for COVID-19 and are asymptomatic, you should self quarantine for 14 days at home or in another location and let your spouse or partner care for your baby. If you have been exposed to someone with COVID-19 or who has tested positive, you should self-quarantine until you are tested yourself. If you have been diagnosed with COVID-19 or suspected COVID-19 but your symptoms are not severe enough for you to be hospitalized, you quarantine away from your baby and other family members, letting your spouse or partner care for the baby, and you should obtain a home pulse oximeter and use it to check your oxygen saturation (SpO<sub>2</sub>) at least twice per day. Normally, SpO<sub>2</sub> is above 95% and you should tell your doctor if it falls to 92%, in which case your doctor will start thinking about hospital admission, depending on your other vital signs, health conditions, and other aspects of your situation.

It is also vital that you keep all of your vaccinations up to date, in order to minimize the chances that you'll need hospitalization. While social distancing policies are in place, go out only for essential needs, such as grocery shopping and maintain a distance of at least two meters between yourself and people in public.

### **Resources for COVID-19 in pregnancy:**

For more information about 2019-nCoV during and after pregnancy, contact <http://www.womenshealth.gov/> (800-994-9662 [TDD: 888-220-5446]) or contact the following organizations:

- **International Registry of Coronavirus Exposure in Pregnancy.** <https://corona.pregistry.com>
- CDC. 2019 Novel Coronavirus. Situation Summary <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
- Johns Hopkins COVID-19 map and resource center <https://coronavirus.jhu.edu/map.html>

- Mayo Clinic. Coronavirus: What it is, what you need to know

<https://www.mayoclinichealthsystem.org/hometown-health/featured-topic/coronavirus-what-it-is-what-you-need-to-know>

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## **General information**

It is very common for women to worry about having a miscarriage or giving birth to a child with a birth defect while they are pregnant. Many decisions that women make about their health during pregnancy are made with these concerns in mind.

For many women these concerns are very real. As many as 1 in 5 pregnancies end in a miscarriage, and 1 in 33 babies are born with a birth defect. These rates are considered the background population risk, which means they do not take into consideration anything about the health of the mom, the medications she is taking, or the family history of the mom or the baby's dad. A number of different things can increase these risks, including taking certain medications during pregnancy.

It is known that most medications, including over-the-counter medications, taken during pregnancy do get passed on to the baby. Fortunately, most medicines are not harmful to the baby and can be safely taken during pregnancy. But there are some that are known to be harmful to a baby's normal development and growth, especially when they are taken during certain times of the pregnancy. Because of this, it is important to talk with your doctor or midwife about any medications you are taking, ideally before you even try to get pregnant.

If a doctor other than the one caring for your pregnancy recommends that you start a new medicine while you are pregnant, it is important that you let them know you are pregnant.

If you do need to take a new medication while pregnant, it is important to discuss the possible risks the medicine may pose on your pregnancy with your doctor or midwife. They can help you understand the benefits and the risks of taking the medicine.

Ultimately, the decision to start, stop, or change medications during pregnancy is up to you to make, along with input from your doctor or midwife. If you do take medications during pregnancy, be sure to keep track of all the medications you are taking.

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