LEARNING MODULES

COVID-19 VACCINES IN PREGNANCY AND SAFE BREASTFEEDING

PAHO Pan American Health Organization World Health Organization Americas

Learning Modules. COVID-19 Vaccines in Pregnancy and Safe Breastfeeding

PAHO/NMH/RF/COVID-19/22-0041

1

Pregnancy & breastfeeding in the context of COVID-19

Introduction

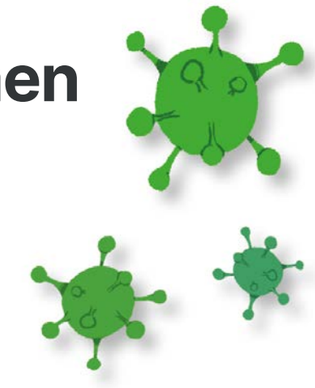
Pregnant and lactating women are special groups to consider because of the high risk of complications if infected with the virus that causes COVID-19. They may need special observation and care if infected to the virus or exposed to others with COVID-19.

After completing this lesson you will be able to:

- ✓ Describe the recommendations related to COVID-19 during pregnancy and breastfeeding.

1.1

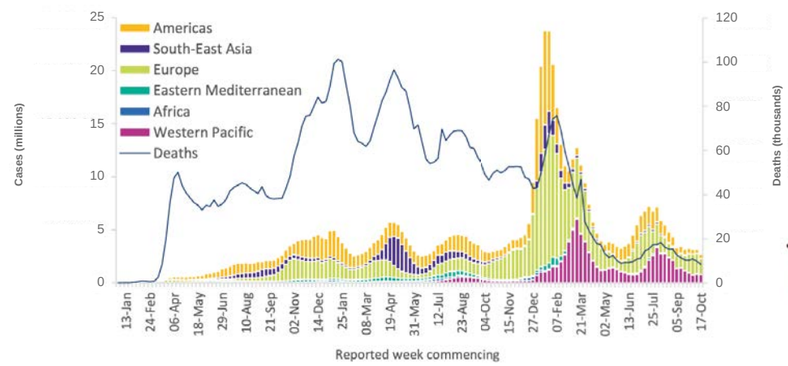
COVID-19 situation and context for pregnant women

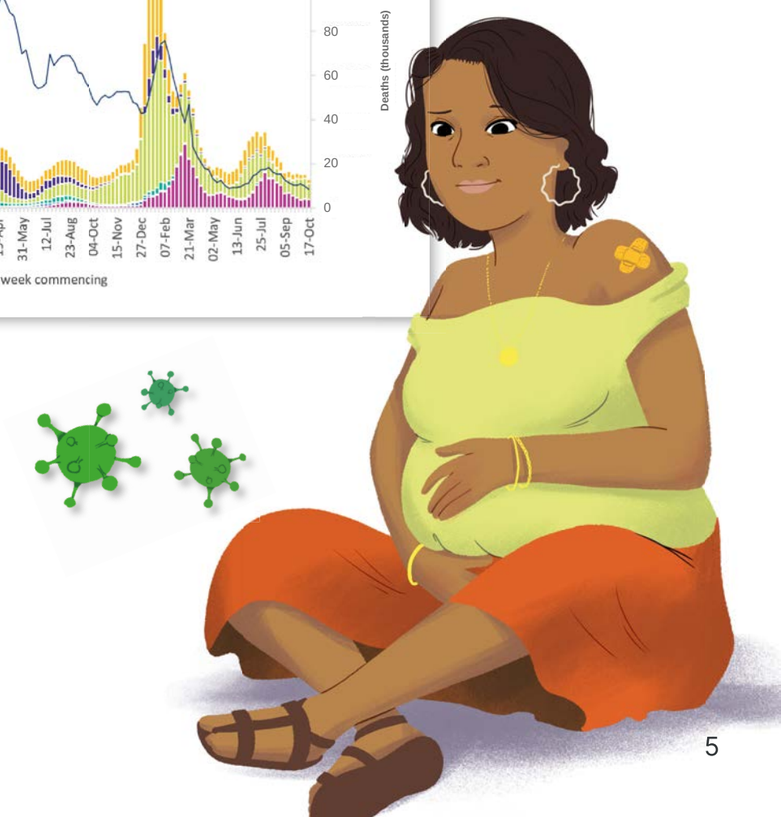


Published results and studies based on COVID-19 surveillance data have indicated **an increased risk among pregnant women of presenting with severe forms of COVID-19** and, therefore, of being hospitalized and admitted to intensive care units (ICU).

The graphic shows the global situation of COVID-19 as of 23rd October 2022. The situation in the different regions is illustrated. It shows and increase in cases towards the end of 2021, beginning of 2022 and summer of 2022.

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 23 October 2022





Introduction of vaccines in Central America and the Caribbean

Figure 2 graphic shows the level of introduction of vaccines in the area of interest:

By (DATE Graphic) all countries in Central America and the Caribbean had introduced COVID-19 vaccines.

- ✓ It is recommended to continue to support all countries to reach at least 70% vaccination coverage as soon as possible, including 100% of those aged over 60; **100% of health workers; and 100% of those with underlying conditions and people in vulnerable situations. Pregnant women are one of these groups.**
- ✓ Vaccine supply has improved, but absorption has not kept pace. In some countries, we see insufficient political commitment to roll out vaccines. This was impacted by the initial lack of political commitment for equitable access to vaccines. In some, we see gaps in operational or financial capacity. And in all, **we see vaccine hesitancy driven by misinformation and disinformation.**
- ✓ **It is important to have an equitable access to all countries and to all people in the country** and that we learn to guide and help pregnant women and lactating women when they need to make a decision on vaccination.

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1.2

Recommendations on COVID-19 during pregnancy

Pregnant women with COVID-19 are more likely to give birth before the 37th week of pregnancy (preterm birth). In addition, pregnant women with COVID-19 may be at increased risk of problems such as intrauterine fetal death and miscarriage.

The Pan American Health Organization / World Health Organization (PAHO/WHO) requests that Member States intensify efforts to ensure access to prenatal care services, as well as to implement preventive measures to reduce morbidity and mortality associated with COVID-19 across all levels of the health system, in order to maintain the commitment to reducing maternal and perinatal mortality and the progress achieved to date.[1]

Due to the physical changes involved in pregnancy, it can place a burden on the body and pose a risk factor for a serious COVID-19 infection.

All pregnant and postpartum women and their newborns, including those with confirmed or suspected COVID-19 infection, have the right to high-quality care before, during and after delivery, including mental health care.

It is recommended to **maintain communication** with pregnant women in order to provide resources for whom to consult in case of an emergency and to coordinate virtual, face-to-face, or home check-ups if necessary.

[1] Pan American Health Organization / World Health Organization. Epidemiological Update: COVID-19 in pregnant women. 13 August 2020, Washington, D.C.: PAHO/WHO; 2020

Recommendations

The following are a series of recommendations related to epidemiological surveillance, laboratory, and clinical management of pregnant women in the context of the COVID-19 pandemic.

A. Epidemiological surveillance

The following activities should be performed to interrupt the transmission of COVID-19:

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EARLY DETECTION OF SUSPECTED CASES USING THE UPDATED CASE DEFINITIONS

ANTIGEN OR PCR

ISOLATION OF SUSPECTED AND CONFIRMED CASES

CONTACT TRACING AND QUARANTINING OF CONTACTS

B. Laboratory

Confirmation of COVID-19 circulation within a population requires laboratory testing.

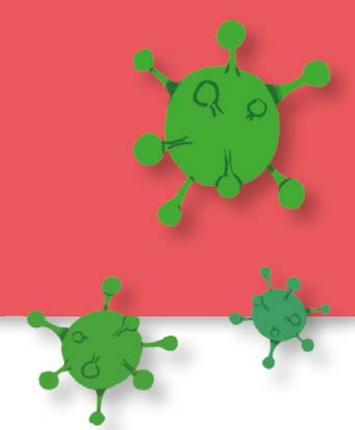
PRIORITIZATION OF TESTS OF PREGNANT WOMEN

The prioritization of tests for suspected cases amongst pregnant women should be considered, given that: They are persons at-risk of developing severe forms of the disease, and they will require hospitalization at some point during their pregnancy.

PREGNANT WOMEN SUSPECTED OF HAVING COVID-19

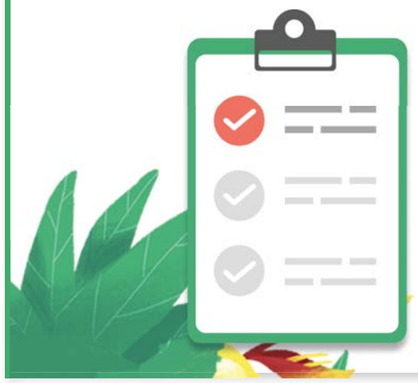
Any pregnant woman suspected of having COVID-19 who cannot be confirmed through laboratory testing for any reason should be considered as a case of COVID-19.

PAHO/WHO recommends that all suspected cases according to the case definitions be **tested for COVID-19 using virological essays.**



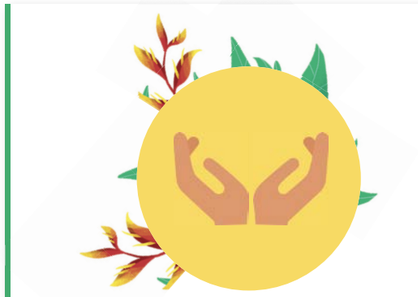
C. Clinical Management

These are the steps to follow for clinical management of pregnant women or mothers with COVID-19 caring for infants.



PREGNANT AND POSTPARTUM WOMEN MUST BE CLINICALLY MANAGED

All pregnant and postpartum women must be clinically managed in accordance with the guidelines and regulations established and in effect in each respective country and territory in the Region of the Americas.



ADDITIONAL SPECIFIC CARE MEASURES

Additional specific care measures will be required for pregnant women for whom SARS-CoV-2 infection is suspected or confirmed.

Should pregnant women deliver by caesarean section if COVID-19 is suspected or confirmed?

No. The WHO recommends that caesarean sections should only be performed when medically justified. The type of delivery should be determined on an individual basis and according to the woman's preferences and obstetric indications.

HOME CARE

Pregnant women with mild or moderate disease can be considered for home care if the home setting is suitable for the isolation and care of a COVID-19 patient, if they do not smoke, are not obese, and do not have other diseases such as cardiovascular disease, diabetes mellitus, chronic lung disease, cancer, chronic kidney disease, immunosuppression and other factors listed in page 11.

An assessment about home care for each patient should be based on the following factors:

EVALUATION OF THE PATIENT

Evaluation of the patient's home setting according to infection prevention and control (IPC) criteria (e.g., ability to carry out hand and respiratory hygiene, environmental cleaning, limitations on movement around or from the house).

VULNERABLE PEOPLE AT HOME

Presence of vulnerable people at higher risk of COVID-19 in the home.

WASH YOUR HANDS

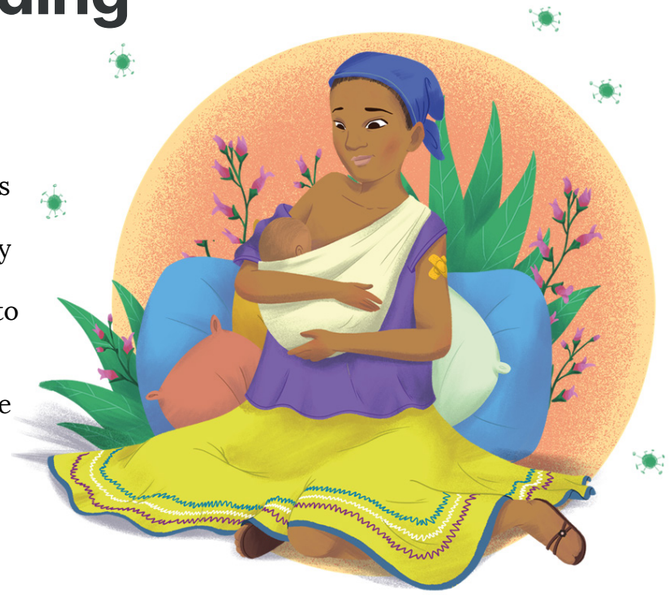
Ability of a caregiver to provide care and closely monitor the evolution of the patient's health, at least once per day, and to recognize signs and symptoms of any worsening of the health status.

SUPPORT THE PATIENT

Availability of trained health workers to support the patient and caregiver (home-based, phone, telemedicine, trained community workers or outreach teams).

1.3

Recommendations on COVID-19 during breastfeeding



Active COVID-19 (virus that can cause infection) has not, to date, been detected in the breast milk of any mother with confirmed/suspected COVID-19. It appears unlikely, therefore, that COVID-19 would be transmitted through breastfeeding or by giving breast milk that has been expressed by a mother who is confirmed/suspected to have COVID-19.

If a mother is suspected/confirmed to have COVID-19 she should:

- ✓ Have skin to skin contact with her baby.
- ✓ Continue breastfeeding.

There is no reason to avoid or stop breastfeeding in the context of COVID-19.

Recommendations

If a mother is confirmed/suspected to have COVID-19 she should:

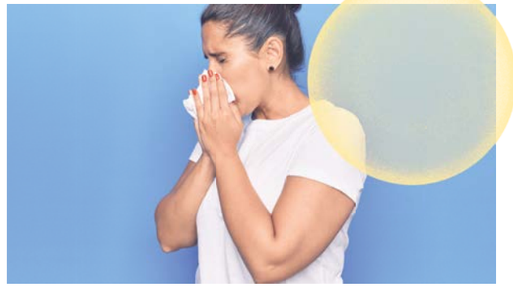
WASH YOUR HANDS

Wash hands frequently with soap and water or use alcohol-based hand rub, especially before touching the baby.

WEAR A MASK

Wear a medical mask while feeding.
It is important to:

- ✓ Replace masks as soon as they become damp
- ✓ Dispose of masks immediately
- ✓ Not re-use a mask
- ✓ Not touch the front of the mask but untie it from behind



SNEEZE OR COUGH INTO A TISSUE

Sneeze or cough into a tissue, immediately dispose of it and use alcohol-based hand rub or wash hands again with soap and clean water.

CLEAN SURFACES

Regularly clean and disinfect surfaces with soap and water. Clean all pump and bottle parts after each use.

If a mother is confirmed/ suspected to have COVID-19 has just coughed over her exposed breast or chest, then she should gently **wash the breast with soap and warm water for at least 20 seconds prior to feeding.** It is not necessary to wash the breast before every breastfeed or prior to expressing milk.

Alternatives

If a mother is confirmed/suspected to have COVID-19 and not able to breastfeed she has the following alternatives:

EXPRESSED BREASTMILK (FEEDING THE CHILD PREFERABLY USING CUP AND/OR SPOON)

BREASTMILK FROM ANOTHER MOTHER (DONOR)

WET-NURSING (ANOTHER WOMAN BREASTFEEDS THE CHILD)

INFANT FORMULA MILK WITH MEASURES TO ENSURE THAT IT IS FEASIBLE, CORRECTLY PREPARED, SAFE AND SUSTAINABLE

2

COVID-19 vaccine during pregnancy & breastfeeding

Introduction

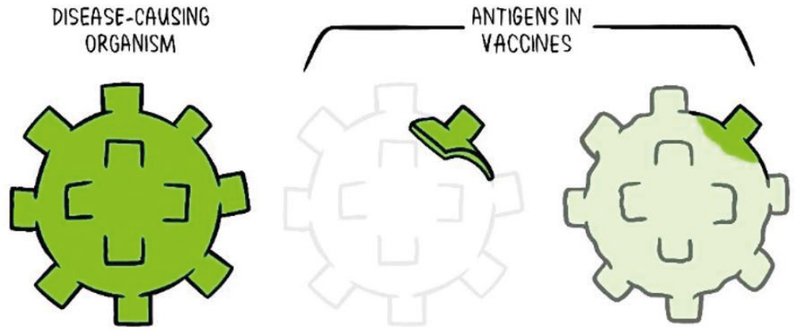
There are changes to the immune system that can make them more prone to suffer different types of infections, including COVID-19. Vaccination against COVID-19 during pregnancy provides protection to women and their babies.

After completing this lesson you will be able to:

- ✓ Promote and provide counselling of COVID-19 vaccines to pregnant women.
- ✓ Promote and provide counselling of COVID-19 vaccines to breastfeeding women.
- ✓ Understand the development of COVID-19 vaccines.

2.1

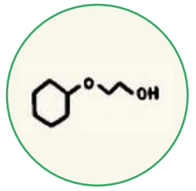
Development about COVID-19 vaccines



The key ingredient in a vaccine is the antigen. It's either a tiny part of the disease-causing organism, or a weakened, non-dangerous version, so your body can learn the specific way to fight it without getting sick.

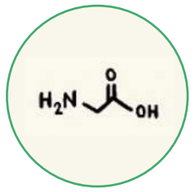
2.1.1 Vaccines components

All vaccines contain an **active component** (the antigen) or the blueprint for making the active component, which generates an immune response. The antigen may be a small part of the disease-causing organism, like a protein or sugar, or it may be the whole organism in a weakened or inactive form.



PRESERVATIVES

Preservatives prevent the vaccine from becoming contaminated once the vial has been opened, if it will be used for vaccinating more than one person. Some vaccines don't have preservatives because they are stored in one-dose vials and are discarded after the single dose is administered.



STABILIZERS

Stabilizers prevent chemical reactions from occurring within the vaccine and keep the vaccine components from sticking to the vaccine vial. Stabilizers can be sugars (lactose, sucrose), amino acids (glycine), gelatin, and proteins (recombinant human albumin, derived from yeast).

SURFACTANTS

Surfactants keep all the ingredients in the vaccine blended together. They prevent settling and clumping of elements that are in the liquid form of the vaccine.

RESIDUALS

Residuals are tiny amounts of various substances used during manufacturing or production of vaccines that are not active ingredients in the completed vaccine. Substances will vary depending on the manufacturing process used and may include egg proteins, yeast or antibiotics.

DILUENT

A diluent is a liquid used to dilute a vaccine to the correct concentration immediately prior to use. The most commonly used diluent is sterile water.

ADJUVANTS

Some vaccines also contain adjuvants. An adjuvant improves the immune response to the vaccine. The adjuvant may be a tiny amount of aluminium salts.

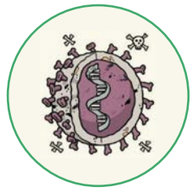
2.1.2 Vaccines design

The approach to designing a vaccine may include using:

A) **Whole virus**;
B) **Parts of the germ** that triggers the immune system;
C) **Genetic material** that provides the instructions for making specific proteins and not the whole virus.

A) The whole virus

The whole-microbe approach may consist on:



INACTIVATED VACCINE

The first way to make a vaccine is to take the disease-carrying virus, or one very similar to it, and inactivate or kill it using chemicals, heat or radiation. It requires special laboratory facilities to grow the virus safely, can have a relatively long production time, and will likely require two or three doses to be administered.

LIVE-ATTENUATED VACCINE.

A live-attenuated vaccine uses a living but weakened version of the virus or one that's very similar. Vaccines like this may not be suitable for people with compromised immune systems.

VIRAL VECTOR VACCINE

This type of vaccine uses a safe virus to deliver specific sub-parts – called proteins – of the germ of interest so that it can trigger an immune response without causing disease. To do this, the instructions for making particular parts of the pathogen of interest are inserted into a safe virus. The safe virus then serves as a platform or vector to deliver the protein into the body.

Photo: Karina Zambrana - OPAS/OMS

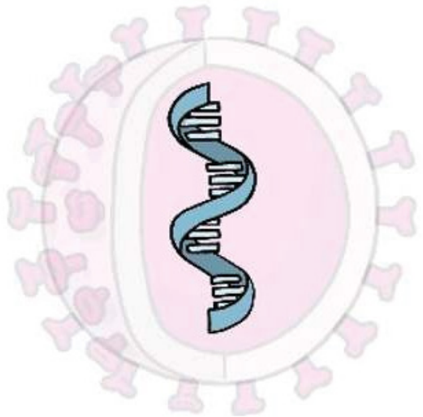
B) Parts of the germ

A subunit vaccine is one that **only uses the very specific parts** (the subunits) of a virus or bacterium that the immune system needs to recognize. It doesn't contain the whole microbe or use a safe virus as a vector. The subunits may be proteins or sugars.

C) Genetic material

The genetic approach (nucleic acid vaccine) unlike vaccine approaches that use either a weakened or dead whole microbe or parts of one, a **nucleic acid vaccine just uses a section of genetic material that provides the instructions for specific proteins, not the whole microbe.** DNA and RNA are the instructions our cells use to make proteins.

A nucleic acid vaccine delivers a specific set of instructions to our cells, either as DNA or mRNA, for them to **make the specific protein that we want our immune system to recognize and respond to.**



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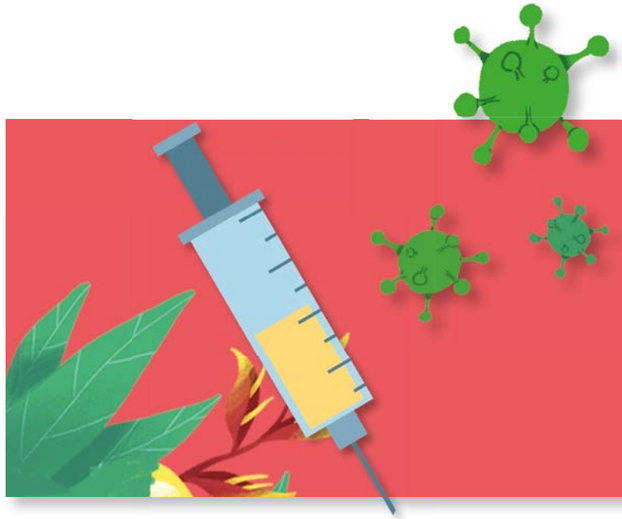
2.2
COVID-19 vaccines and pregnant women

Pregnant woman **can receive** COVID-19 vaccines. COVID-19 vaccines offer strong protection against severe illness from COVID-19. If not already vaccinated, pregnant women should have access to WHO EUL [emergency use listing] approved vaccines, because COVID-19 during pregnancy puts them at higher risk of becoming severely ill and of giving birth to preterm babies.



Given the substantial risk from COVID-19 during pregnancy, it is critical that pregnant women have access to WHO EUL – approved COVID-19 vaccines.

Vaccination against COVID-19 during pregnancy is safe and provide a range of benefits to both women and their babies, especially protection against severe disease and death. These benefits **outweigh potential risks** associated with vaccination, especially where there is transmission of the virus that causes COVID-19.

Studies in countries that have already vaccinated large numbers of pregnant women, primarily with mRNA vaccines, have shown high effectiveness in pregnant women, similar to effectiveness in nonpregnant people.

Studies have shown that pregnant women who get COVID-19 vaccines develop antibodies that are present in babies' umbilical cord blood. This suggests that babies may receive protective benefits from the vaccine, in addition to the benefits for pregnant women.

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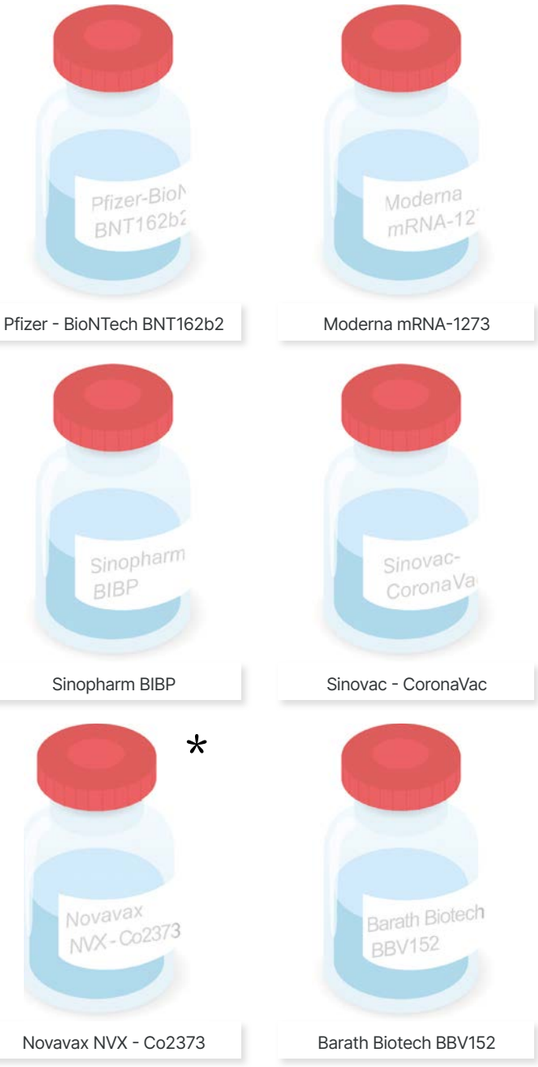
COVID-19 vaccines work as well in pregnant woman as in nonpregnant people.

Recommended COVID-19 vaccines for pregnant women



Pfizer - BioNTech BNT162b2 | Moderna mRNA-1273

Sinopharm BIBP | Sinovac - CoronaVac

Novavax NVX - Co2373 * | Barath Biotech BBV152

AstraZeneca AZD 1222 | Janssen Ad26. COV2.S

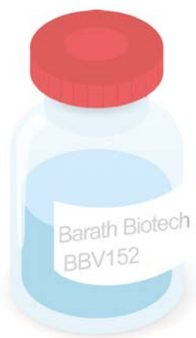
* Because of the limited experience with the MatrixMTM adjuvant of the Novavax NVX-Co2373 vaccine in pregnancy, the benefit-risk assessment for this vaccine includes considering whether any other WHO EUL COVID-19 vaccine with a more established safety record in pregnancy is locally available.

2.3
COVID-19 vaccines and breastfeeding

WHO recommends the use of COVID-19 vaccines in lactating women and that mothers who are vaccinated continue breastfeeding after vaccination.

Recommended vaccines for breastfeeding mothers

Novavax NVX - Co2373



Barath Biotech BBV152

AstraZeneca AZD 1222

Although data are lacking on the potential benefits and risks of COVID-19 vaccines to breastfed children, they are **biologically and clinically unlikely to pose a risk.**

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Lactating women considering receiving the COVID-19 vaccine should have access to information about the safety and efficacy of the vaccine including that:

Breastfeeding is vital to the health of infants and their mothers.

Vaccine efficacy in lactating women is expected to be similar to non-lactating women.

3

Communication during pregnancy & breastfeeding in the context of COVID-19

Introduction

The goal is to acknowledge the skills to have an honest and respectful conversation about Covid-19 and vaccines with pregnant women and breastfeeding mothers and to learn how to counterargument the most frequent misconceptions and rumors around COVID-19.

After completing this lesson you will be able to:

- ✓ Handle misinformation about COVID-19 vaccines.
- ✓ Be aware of the common myths about COVID-19 vaccines and how to respond to them.

3.1

How to handle misinformation about COVID-19 vaccines

The new SARS-CoV-2 virus has triggered two parallel pandemics: a **biological** one that has spread to every country in the world, and a pandemic of **information** (infodemic) that spreads through all the media and sneaks into our daily lives.

Erroneous information related to COVID-19, whether deliberatively trying to mislead or not, has increased in number and has aggravated resistance to vaccines undermining immunization efforts aimed at controlling the pandemic.

How to interact

Resistance or refusal to be vaccinated despite the availability of vaccines is a phenomenon that can be influenced by a complex combination of historical, political, social and behavioral determinants.

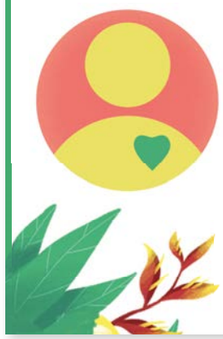
However, the possibility exists that even those with these views may consider other views and be convinced by scientific evidence and well-presented arguments.

Here are some of the recommendations that you can use when talking with someone that hesitates to vaccinate:

- ✓ By emphasizing the scientific **consensus related to vaccine safety,** you can reduce a person's concerns and misperceptions.
- ✓ Emphasize that more than 12.2 billion doses against COVID-19 have been applied in the world without people being negatively impacted. Likewise, **the number of deaths from COVID-19 has been drastically reduced in the world after the introduction of these vaccines.** This highlights the safety and efficacy of vaccines against severe disease.

Don't be discouraged, convincing someone who opposes vaccines is a long process.

Remember that people who are generally strongly opposed to vaccines probably won't change their minds in one conversation; **the most important thing is to maintain the connection with them.**



EMPATHY

Show empathy and try to make the person you talk to feel heard. Their concerns and doubts are valid!

Don't interrupt the other person while they are talking; don't talk over them or immediately try to correct them.

All doubts and fears are valid and you should always listen without judgment. A lot of times, people just want to be heard and understood.

SIMPLICITY

Always use simple and understandable language and always offer suggestions and recommendations. Never give instructions or tell somebody what they should do!

When talking about COVID-19 and vaccines, remember that science can be always difficult to understand and that whatever ideas you convey, it is as important to explain them simply than to give correct facts.

EMPOWERMENT

Convey an empowering message to the person, tell them: "You can do something about this disease". Sometimes people feel like there is nothing to do against COVID-19. They believe, that if they were meant to get it, they will get it.... You can explain all the precautionary measures they can take, like masking in crowded environments, washing hands frequently and most of all, getting vaccinated!

3.2

Myths about COVID-19 during pregnancy and breastfeeding

Myths & facts

These are answers that you can give if you hear some of the most common facts and myths about Covid-19.

MYTH

The vaccine can affect the baby's health during the pregnancy and it can even lead to an abortion

FACT

Different studies have proven that the vaccine does not have any negative effect on the baby nor in the pregnant woman.

Given that immunological changes occur in pregnant or lactating women that sometimes make them more susceptible to different types of infections, choosing to be vaccinated will help protect themselves and their baby from COVID-19.

MYTH

The vaccine is going to affect my baby's milk.

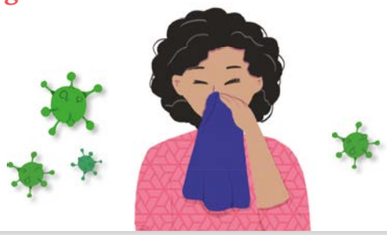
FACT

The vaccines does not have any effect in the mother's milk. A mother can breastfeed and should breastfeed when she is vaccinated.

In fact, even if she got COVID-19, the mother should keep on breastfeeding her baby taking protective measures like wearing a mask and washing hands before and after the take.

MYTH

It is better to get COVID-19 than to get vaccinated



FACT

In fact, it is better to get vaccinated as the vaccine will create immunity without the harmful effects associated with COVID-19, including long-term effects and death.

Allowing the disease to spread could cause millions of deaths and an even greater number of people with the long-term effects of the disease.

MYTH

The vaccine made me ill. I had COVID-19 after getting vaccinated

FACT

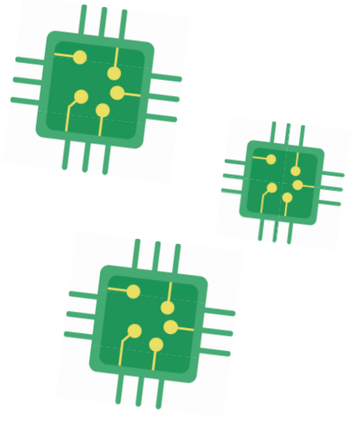
People don't develop COVID-19 after getting their shot. They may develop secondary effects, like fever or soreness, but it is not to be confused with the illness of COVID-19.

Make sure you list and explain all the possible secondary effects from the vaccine and also advise them to go to the health center when they persist.

If the person was exposed to COVID-19 before vaccination, it is likely that he or she could become ill. The vaccine is effective for up to 14 days on average after being given, and you are fully protected by having the full schedule of necessary doses.

MYTH

The appearance of COVID-19 is related to 5G, that can weaken our immune system. It is an excuse to inject a chip in our body



FACT

Vaccines against COVID-19 do not contain microchips, 5G technology or nanotechnology that weaken the immune system. Vaccines are safe and protect against COVID-19 disease. The immune system or defenses can be weakened by many things, including poor diet, lack of physical activity and not having an adequate sleep pattern.

We know how the virus that causes COVID-19 is transmitted, and it is not through this technology. Remember that COVID-19 is spreading in countries that do not have 5G technology. The vaccines do not contain harmful ingredients. The ingredients of all the COVID-19 vaccines under test are publicly available in an online database and are compiled on the WHO website, so that anyone can review them anytime they want.

MYTH

One vaccine should be enough. Why the need of three vaccines and a booster?

FACT

The COVID-19 virus keeps on mutating which creates the need to generate new vaccines for the new variants. Also, the immunity that vaccines have helped create in people lowers after six months of having the vaccine.

To be as protected as possible, and specially with pregnant women because they can develop a severe COVID-19 if they are not vaccinated, it is important that they follow through all the doses that the healthcare workers recommend.

MYTH

COVID-19 vaccine will change your DNA.

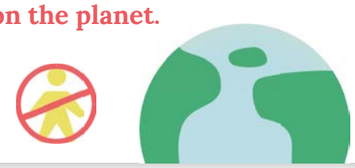
FACT

The COVID-19 vaccines cannot change your DNA in any way. All vaccines instruct our cells to make defenses that protect us against the virus that causes COVID-19. Vaccines do not generate any mutation at any cellular level. DNA and messenger RNA are completely different molecules.

There is no DNA in the vaccines, so there is no chance that they could alter it.

MYTH

COVID-19 is a trick to lower the population because there are too many people on the planet.



FACT

The number of deaths due to COVID-19 have lowered significantly after the introduction of vaccines. The most effective way to prevent deaths is by vaccinating and making sure that all people but specially pregnant women, get vaccinated with all their recommended doses.

MYTH

My doctor told me that I should not get vaccinated

FACT

The deaths due to COVID-19 decreased substantially after the introduction of COVID vaccines. You can consult the data here:

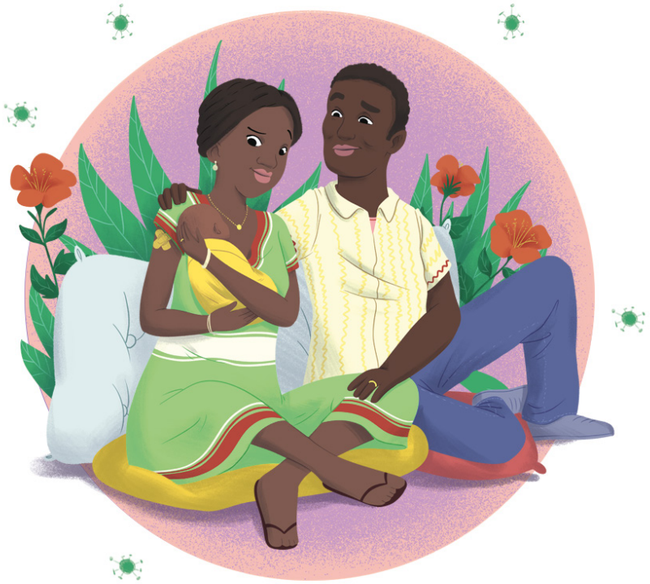
https://covid19.who.int/

Research indicates that:

- **An unvaccinated person has a 6.1 times higher risk** of being positive for COVID-19 than a vaccinated person.
- **An unvaccinated person is 10 times more likely to require hospitalization** for COVID-19 than a vaccinated person.
- **An unvaccinated person has 11 times more risk of dying from COVID-19** than a vaccinated person, according to the United States Centers for Disease Control and Prevention (CDC).

Data shows that Covid vaccines are the best way to protect ourselves from severe forms of the disease. If a healthcare provider is telling you to not get vaccinated, they are not following science criteria.

3.3
COVID-19 and religion



The myths

Here are some statements related to religious beliefs that you will hear from people related to COVID-19 vaccines and some facts to respond to these statements:

MYTH

I don't need to get vaccinated because God takes care of me and protects me. I have faith, my pastor prays for me.

FACT

God also commands us (as a community) to take care of ourselves. God commands us to follow his teachings and instructions. God commands us to take care of our thoughts, our words, our body (the temple of the Holy Spirit), our actions.

"Take heed to yourself and to doctrine; Persevere in it, for by doing this you will save yourself and those who hear you" Timothy 4:16.

MYTH

Why should I decide? God already has a perfect plan.

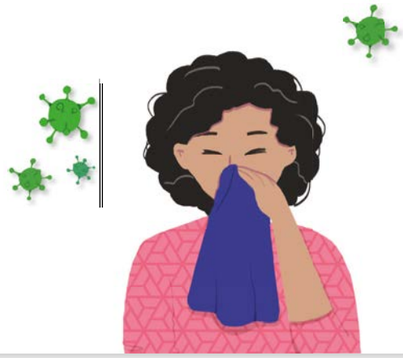
FACT

We have the capacity to decide, that is called free will. We have the opportunity to choose what is good or convenient for us. It is a great gift from the Lord. We have the option of to choose; let us choose what is good for us and our family. Let's choose health.

"Today I call heaven and earth as witnesses against you, that I have given you to choose between life and death, between blessing and curse. Choose, therefore, life, so that you and your descendants may live.", Deuteronomy 30:19.

MYTH

If I get sick and die, it is the will of God. My meeting with him is good. Why avoid it? The vaccine could go against God's plans for my life. I trust in the will of God



FACT

God doesn't want you to get sick. He wants you to prosper in all things and be in health. God wants to heal all your ailments, spiritual and physical, because he loves you, because he is good to you.

"Beloved, I wish that you prosper in all things, and that you have health, just as your soul prospers." 3 John 1:2.

The authorities of the Ministry of Health fulfill their obligation and responsibility to offer the vaccine against COVID-19. God allows it because this is the means by which he seeks to bring healing to everyone equally, avoiding more illness and death.

This is a printable adaptation of the e-learning module produced by the Pan American Health Organization. It´s objetive is to provide updated information to health professionals to support them when counseling to pregnant and breastfeeding women about COVID-19 vaccination.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