Hit Me With Your Best Shot! COVID-19 Vaccines

Question 1*: I work in healthcare and received the first dose of COVID vaccine. But after receiving the shot, I found out I was pregnant. I changed jobs so that I am not at significant risk anymore. Should I get the second shot?*

Question 2*: I'm pumping and supposed to get the COVID vaccine. I know there isn't much to say on the COVID vaccine but wondering if you would recommend getting it or not?*

These are just a sample of the questions that we have received from individuals who are trying to make the best decisions for themselves during pregnancy and breastfeeding. Juggling all of the information can be daunting and concerns about how quickly the vaccine came on the market and the lack of data for pregnant and breastfeeding individuals has caused a great deal of uncertainty. Well, it is for situations like this that MotherToBaby exists. We are here to help, so let's get to it!

First, is the COVID-19 vaccine safe since it came on the market so fast?

There are many reasons why the vaccine was able to come to the market in a short period of time. One of the reasons is due to medical advances in vaccine development which allowed researchers to develop the vaccine in a shorter period of time than traditional vaccines. The technology used to develop the Pfizer and Moderna COVID-19 vaccines (mRNA) was not new and has been around for some time. While these are the first vaccines on the market using mRNA technology, mRNA was being used to study other viruses. Secondly, due to collaborative efforts, China promptly shared genetic information about the COVID-19 virus, so scientists could start working on vaccines pretty early.

Importantly, the criteria for evaluating vaccine safety did not change and had to be met regardless of the pandemic. According to Dr. Anthony Fauci, a respected infectious disease expert and the director of the National Institute of Allergy and Infectious Diseases, the process has been transparent and independent of the influence of pharmaceutical companies or politics. Each vaccine trial had a safety and data monitoring board of scientists that reviewed the data independent from any influence of the pharmaceutical companies. Once the data satisfied the requirements of the board, the companies submitted the data to the FDA (Food and Drug Administration) and a "premier" group of scientists along with their advisory committee worked together to make sure the data met the required standards. The process was transparent and independent and everyone can take a look at the data. Because COVID-19 is so contagious and widespread, it did not take long to see if the vaccine was effective in those who were vaccinated voluntarily. No corners were cut; it was still a thorough process to bring a vaccine to the market that was safe and effective.

Will it affect my ability to get pregnant?

Concerns about the vaccines' impact on fertility were generated by false social media reports claiming that the vaccine would cause the body to falsely attack a protein that is needed to attach the placenta to the uterus and then develop properly. This is false because the COVID-19 vaccine triggers the body's immune system to fight the specific protein on the coronavirus surface. It is a targeted response against the coronavirus and no other parts of the body.

Therefore it will not affect fertility including those who go thru in-vitro fertilization methods (IVF). As a matter of fact, 23 women who were involved in the trials became pregnant. Only one individual suffered a pregnancy loss and she did not receive the vaccine but rather the placebo.

Is the vaccine safe for pregnant and breastfeeding women?

While there are no safety data specific to the use of the vaccine during pregnancy and breastfeeding, the American College of Obstetricians and Gynecologists (ACOG) recommend that COVID-19 vaccines should not be withheld from pregnant or breastfeeding individuals who meet the criteria for vaccination based on ACIP-(Advisory Committee on Immunization Practices) recommended priority groups. Based on the history of other similar vaccines (inactivated) in pregnancy and breastfeeding, experts do not believe that mRNA vaccines (like the Pfizer and Moderna vaccines) would increase the risk of harm to the fetus or to infants. It is encouraged that you talk with your healthcare provider about the risks and benefits of getting the vaccine during pregnancy.

Does the vaccine cause serious side effects?

There have been claims on social media that the virus can cause severe shaking and convulsing from very convincing videos and that the government is not telling the truth about the safety of the vaccines. The Centers of Disease Control (CDC) and the FDA report that the most common side effects are pain where the vaccine is injected, body aches, headaches or fever. These symptoms generally do not last more than two days. If they last longer, you can call your doctor. In regard to the shakes and convulsions, more than 51 million doses of the vaccine have been given globally so far and the data has not identified these symptoms as side effects of the vaccine.

You can report side effects and reactions using either of two systems:

- **V-safe** is a new smartphone-based, after-vaccination health checker for people who receive COVID-19 vaccines.
- **Vaccine Adverse Event Reporting System (VAERS)** is the national system that collects reports from healthcare professionals, vaccine manufacturers, and the public of adverse events that happen after vaccination

After receiving the vaccine, it is still important to wear face masks, wash your hands, and socially distance. The vaccine doesn't make you immune, but it helps your body to fight off the effects to give you a fighting chance if you get infected. So please still follow all the guidelines after receiving the shot.

Myths about the vaccine

I have heard many falsehoods circulating on social media that have had many of my friends and family question getting the vaccine including but not limited to:

- Getting the vaccine gives you COVID
- The COVID vaccine enters cells and changes your DNA
- COVID-19 vaccine was developed with or contains controversial substances such as implants, microchips or tracking devices.
- More people will die from the side effects of the vaccine than the virus

These claims have no basis in fact; please check out these resources for more information: ***COVID-19 Vaccine Myths Debunked*** *and* ***COVID-19 Vaccines: Myth Versus Fact***.

Please get your information from trusted scientific resources or institutions like the FDA, CDC, ACOG, Mayo Clinic, John Hopkins, Harvard Med or those that end with .org or .edu.

MotherToBaby also has a webpage devoted to COVID and the vaccine filled with information and resources that you can review for pregnant and lactating individuals:***COVID 19: What You Need To Know***

In addition, MotherToBaby is doing its best to gather information for pregnant and lactating individuals by conducting studies. If you're pregnant or breastfeeding and tested positive for COVID-19, please consider enrolling in our observational study. You will not be asked to take or change any medications, and you can participate from the comfort of your home.

The Take Away

Overall, whether you are planning for pregnancy, pregnant or breastfeeding, based on the history of other vaccines, you do not have to be afraid to get the COVID-19 vaccine. The data from clinical trials has been reassuring and no corners were cut. Please seek out solid medical advice from trusted resources. The goal of the vaccine is to protect you and not harm you.

So if you make the decision to get the COVID-19 vaccine, roll up your sleeves with confidence and say, "Go ahead, hit me with your best shot!"

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Tanya called in on a Monday morning. “I’m getting married in a few months and we want to start trying to get pregnant right away. What should I be doing now to have the best chance of a healthy baby?”

Preconception health and pregnancy planning present a terrific opportunity to assess a wide range of factors that can give your baby the best start. This blog will outline the things to consider, as I relayed to Tanya:

Your Personal Health

Are you generally healthy? If you already get headaches or have acid reflux, know that pregnancy can make these more frequent. Ask your doctor if the way you treat these common conditions should change once you are pregnant. Ask about your current exercise routine and if you need to alter it during pregnancy. Get checked for sexually transmitted infections because some may not show symptoms. Also discuss your medications – some should be stopped before you start trying to conceive, such as Valproic acid, leflunomide (e.g. Arava®), teriflunomide (Aubagio®), methotrexate, and isotretinoin (e.g. Accutane®) to name just a few. For others, you’ll want to weigh the risks vs. the benefits with your health provider before you conceive. Talk with your doctors now to make a plan.

Caffeine

Do you drink caffeinated coffee, tea, or soda? What about energy drinks, protein powders, or Kombucha? MotherToBaby’s fact sheet on caffeine may put your mind at ease and encourage you to think about all your beverage options.

Body Weight

Is your weight a concern? One of the best things you can do before conception is to get to a healthy weight. Women who are overweight or obese have increased risks for miscarriage, birth defects, gestational diabetes, high blood pressure and preeclampsia, and unplanned cesarean birth. Now is a good time to meet with a nutritionist or go on a

sensible diet to get to a healthy weight in anticipation of pregnancy. Once you are pregnant, continue to watch what you eat but don't try to lose weight. Weight gain is inevitable during pregnancy but guidelines from the American College of Obstetricians and Gynecologists (or ACOG, the leading professional society for OB/GYNs) advise women to gain anywhere from 11-40 pounds, depending on your pre-pregnancy weight. It's a myth that you need to "eat for two," so don't set yourself up for postpartum weight gain by eating more than you should. After delivery of an average 7-8 lb. baby, you may lose 2 lbs. in amniotic fluid, 1.5 lbs. of placenta, 5-7 lbs. in blood volume, and 2 lbs. as the uterus returns to its normal size. That could still leave you with 10 pounds of excess weight, or more if you gained more weight during the pregnancy. Some women never take off those extra pounds, and their weight creeps up with successive pregnancies and age, which can lead to pregnancy complications and chronic health problems later on. See our exercise fact sheet for more information.

Chronic Health Conditions

Do you have chronic health conditions like diabetes, high blood pressure, migraines, asthma, high cholesterol, heart conditions, varicose veins, or anemia? Do you have an autoimmune disease like Crohn's or ulcerative colitis, lupus, rheumatoid arthritis, ankylosing spondylitis, multiple sclerosis, psoriasis or psoriatic arthritis? Meet with your obstetrician for a "preconception" appointment to discuss how a pregnancy might impact your health, and how your health might affect a future pregnancy. Your specialist can provide an important opinion too. A maternal-fetal medicine specialist (MFM) is a doctor who specializes in high-risk pregnancies, and consulting with a MFM once you are pregnant could help you learn how to optimize your and your baby's health.

Mental Health

What about your mental health? If you have a history of anxiety or depression, ADHD or other conditions, ask your psychiatrist and OB about treatment, and don't make changes before you do. Many medications can be continued during pregnancy and while breastfeeding. In fact, mental health is incredibly important – for example, when a woman doesn't treat her mood disorder or inadequately treats it, some studies suggest risks for miscarriage, premature birth, low birth weight, and preeclampsia. Talk therapy is vitally important too. And if you struggle with mental health concerns during the pregnancy, you are at risk for postpartum depression. Let's face it – pregnancy and caring for a new baby is stressful, so now is the time to marshal your helpers – friends, relatives, therapists and doctors – to ensure you have enough support. Your obstetrician should ask about mental health but if not, speak up. Your doctor can be your ally here, helping you get treatment and addressing concerns related to pregnancy and postpartum mental health. And MotherToBaby can give you an overview of the research related to any prescriptions you might choose to take.

Dental Health

Have you seen a dentist lately? Oral health can impact a pregnancy, meaning that if you have swollen or bleeding gums, a toothache or an infection, it can increase risks to the pregnancy. If you need to have a dental x-ray, take antibiotics, or have local anesthesia for a dental procedure, these are generally acceptable during pregnancy, but best to complete before you get pregnant. Contact MotherToBaby for more details.

Your Workplace

Where do you work? MotherToBaby can give you information to minimize exposures in a veterinarian office, dry cleaners, salon, laboratory/hospital, imaging center, pest control service, or other business. Your occupational safety department can recommend personal protective equipment (PPE) and tell you about ventilation that may be in place to ensure workplace safety. Safety data sheets (SDS) give an overview of chemicals used in industry and are available online or at work.

Food Safety

Read up on food safety and learn how to minimize your exposure to foods that have commonly been associated with foodborne illness such as E. coli or listeria. Get in the habit of washing your fresh fruits and vegetables well. Check out other blogs on our website too.

Vitamins and Supplements

Have you started taking a prenatal vitamin? Are you getting enough folic acid? ACOG recommends that women take at least 400 mcg of folic acid before getting pregnant and at least 600-800 mcg/day once they are pregnant. This can help prevent birth defects of the brain and spinal cord. Call MotherToBaby if you want to learn the recommended daily intake for specific vitamins or minerals. In general, taking more than what is recommended is not advisable – we haven't studied how mega-doses of vitamins may impact a pregnancy. Other supplements beyond taking a prenatal vitamin are not advisable either – the Food & Drug Administration (FDA) doesn't supervise their manufacturing plants and past surveys have shown some supplements actually contain contaminants. Furthermore, we've seen instances where the label didn't match the contents of the bottle and could cause ill effects. Pregnant and breastfeeding women should avoid herbal supplements unless specifically recommended by your doctor.

Alcohol, Cannabis, and Tobacco

Do you smoke cigarettes? Do you use cannabis for medicinal or recreational purposes? Do you drink alcohol? Recent research has demonstrated that marijuana use very early in pregnancy causes changes in brain development, which could result in behavioral or learning challenges we see later in the child's life. Cigarettes increase risks for pregnancy loss, among other things. And alcohol is known to cause a variety of birth defects known as fetal alcohol spectrum disorder (FASD). We don't believe that there is a "safe" amount of alcohol which when consumed doesn't cause issues for a developing child. Now is the time to quit smoking, drinking, and using cannabis – your baby will be heathier for it. MotherToBaby can provide resources, or check with your doctor.

Vaccinations

Are you up to date on all your vaccines? Did you get a flu shot this past season? You don't want a vaccine-preventable

illness to have an impact on your pregnancy. Flu infection can increase risks for more severe symptoms, longer-lasting illness, pregnancy loss and premature delivery, which can have a lifelong impact on your baby. Flu vaccine helps prevent infection. Another benefit to vaccinating during pregnancy? Studies show the protection extends to your baby, and gives them a little extra immunity from birth until they can receive vaccines. Also good to know: some vaccines can be given and are recommended during pregnancy, like a flu shot or TDAP, but others are best given before you conceive to avoid a small risk of spreading the illness to the fetus (e.g. the measles, mumps, and rubella (MMR) vaccine, as well as the Varicella (chicken pox) vaccine) – so try to get these done at least a month before trying to conceive. Check your medical records to see the last time you received any of these vaccinations. If you don't know if you were previously vaccinated, your doctor can draw blood to check if you have immunity.

Your Pets

Do you have a cat? There is some concern in pregnancy about an infection called toxoplasmosis, which is caused by a parasite that can be found in cat feces. Read our blog for more info on what you can do to prevent this infection if you have a fur baby at home.

Other Illnesses

Do your upcoming travel plans involve travel to a warm tropical place? Check out our Zika fact sheet to learn more before you book nonrefundable tickets. In general, women will want to wait to try to conceive for eight weeks from the time of your return home; the wait time is three months if your male partner travels with you. COVID-19 is also spreading around the globe and our fact sheet can give you the latest information on whether and how it could affect a pregnancy.

Finally, your obstetrician or primary care doctor would be glad to see you for a Preconception consultation. Make an appointment to discuss your personal history and health. It's a great way to get you and your baby off to the best start.

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By MotherToBaby, a service of the Organization of Teratology Information Specialists (OTIS)

Why should pregnant women care about influenza? Isn't Zika a bigger deal?

The second you get pregnant, the advice starts coming in from everyone. No eating unpasteurized cheese (Listeria!), don't change the cat litter (Toxoplasmosis!), and definitely don't travel to South America (Zika!). While these are all valid concerns, influenza tends to get forgotten, and dismissed as "just the flu." The Influenza virus may not make sensational headlines, but it's a serious problem every year, and pregnant women are especially vulnerable to this infection.

In 2009/2010, the United States (U.S.) experienced a flu pandemic. The flu hit the public hard, and many pregnant women were hospitalized. The U.S. saw higher rates of admission to intensive care units for pregnant women, and 109 pregnant women died from confirmed or suspected flu infection. In comparison, Zika virus, which received much media attention and continues to be a source of great concern for many pregnant women, rarely results in hospitalization and has not resulted in any maternal deaths.

5 Quick Flu Facts:

- The flu is a risk year-round, and is not limited to a particular area of the country.
- Changes with the immune system, heart, and lungs put pregnant women at an increased risk of developing serious complications from the flu, such as respiratory distress. Pregnant women who get the flu are also much more likely to be hospitalized, and can even die from influenza complications.
- Fever is a common flu symptom. Research shows that an untreated high fever early in pregnancy can result in an increased risk for a certain class of birth defects known as neural tube defects (spina bifida is one example).
- Being very sick from the flu can increase the risk of pregnancy complications such as miscarriage and preterm delivery.
- For pregnant women looking to ensure the healthiest start to life for their little one, influenza is an important infection to be aware of, and to try to prevent.

Is it too late to get a flu shot? It's January, isn't flu season over?

It's never too late to get a flu shot! Flu season can start as early as October, and runs as late as May some years. However, research shows that the highest number of flu cases each year usually occurs in February. While vaccine effectiveness can vary from season to season, the flu vaccine is thought to reduce the risk of illness by about 50% to 60% when the flu viruses that end up circulating in the community closely match the viruses included in that year's vaccine. Even during years when the flu vaccine is not a good match, it is still thought to provide some protection against the flu. If you haven't received this year's flu vaccine yet, talk to your health care provider as soon as possible.

10 Quick Flu Vaccine Facts:

- The best way to avoid getting the flu virus is to receive the flu vaccine.
- Women who are planning a pregnancy and women who are currently pregnant are strongly encouraged to get the seasonal flu shot as early as possible during the flu season.
- There is no known risk from getting the flu shot during pregnancy. The seasonal flu shot is an inactivated virus vaccine, which means that it won't cause you to get sick with the flu.

- Pregnant women are asked to avoid the live attenuated flu vaccine (also called the nasal spray vaccine) as it contains a tiny amount of weakened live virus.
- There is no trimester during pregnancy when the flu shot has to be avoided.
- Studies of thousands of women who have received the flu shot just before or during pregnancy have found no increased risk for birth defects.
- Studies have found that when pregnant women get the flu shot, their baby is born with protection against the flu for anywhere from 2 to 6 months after birth.
- Most women who receive the flu shot will not experience any problems.
- A small number of individuals who receive the flu vaccine may experience soreness/redness/swelling at the injection site, headache, fever, nausea and/or muscle aches. Reassuringly, these symptoms are usually mild and go away on their own within a few days.
- Anyone with a severe, life-threatening allergy to any of the vaccine ingredients should talk with their health care provider before getting the flu vaccine.

Is there anything else I can do to avoid the flu?

In addition to getting vaccinated, healthy habits can further reduce your risk of getting the flu. Avoid close contact with other individuals who are sick. If you're caring for someone with the flu (like a partner or a child), make sure to clean and disinfect common surfaces that may be contaminated with germs. Wash your hands frequently with soap and water. Cover your mouth and nose while coughing or sneezing, and practice good health habits like staying well hydrated and eating nutritious food.

If you develop symptoms of the flu, you should contact your health care provider as soon as possible. When indicated, antiviral medications may be prescribed (ideally within 48 hours) to lessen flu symptoms and reduce the risk of serious illness.

MotherToBaby is a suggested resource by many federal agencies including the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration's (FDA) Office of Women's Health, and HRSA, and provides the most up-to-date information. More than 100,000 women and their health care providers seek information about birth defects prevention from MotherToBaby every year. Additionally, MotherToBaby conducts observational research studies in order to contribute more information to the published literature about a variety of exposures. To be connected with a MotherToBaby expert, please call (866) 626-6847, text questions to (855) 999-3525 (standard messaging rates might apply) or visit www.MotherToBaby.org.

REFERENCES:

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