Using E-cigarettes to Quit Smoking during Pregnancy: Is It Safe?

I recently received a phone call from Molly. Molly told me that she had just found out that she was pregnant; this was a surprise, but a welcome one. However, Molly confessed that she smokes a pack of cigarettes per day and her doctor recommends that she quit smoking since cigarettes can present a number of hazards for her pregnancy and baby. Molly's friend told her that e-cigarettes were safe in pregnancy and would help Molly with her efforts to reduce use of traditional cigarettes. Molly wanted to be sure. "Don't both cigarettes and e-cigarettes both contain nicotine," she asked?

What are e-cigarettes?

'E-cigarettes' is short for ***electronic nicotine delivery system***, sometimes also referred to as vapes, e-hookah, or other slang names. E-cigarettes utilize a device that heats up nicotine-containing fluid from a cartridge, which can then be inhaled as a vapor. Using an e-cigarette does have the potential to avoid some of the hazardous compounds found in traditional cigarettes such as tar and cadmium. However, e-cigarettes are a relatively new product and not very well regulated. Some e-cigarette fluids contain a lot of nicotine while others very little. They often have other substances added to them including preservatives and flavorings. Many of these agents have not been studied regarding their safety in pregnant women.

All of this makes it difficult to draw accurate conclusions about what risk e-cigarettes might present to a pregnant woman and her baby. What we do know is that traditional cigarettes and nicotine (the chemical which is in both tobacco and e-cigarettes) ***do*** present a risk for a wide number of issues including birth defects (cleft lip and palate), miscarriage, and poor growth in the developing baby. In addition, substituting e-cigarettes for traditional cigarettes is not a proven way to quit smoking, and in some cases, people continue to smoke conventional cigarettes as well as e-cigarettes which makes the exposure to the baby even larger. Scientists are still learning about this, and most public health agencies recommend behavioral approaches as the safest strategy for pregnant women who are trying to quit smoking.

Molly is smart to ask about the safety of e-cigarettes before she uses them. She also shows how much she cares about herself and her baby by trying to decrease smoking as much as possible! I suggested she speak with her healthcare provider about strategies for quitting. I also told her about free services like the CDC's Smoker's Quitline (1-800-784-8669).

MotherToBaby has fact sheets on e-cigarettes, cigarette smoke and vaping...

... and people can call (866-626-6847), text (855-999-3525), email, or chat to speak with a specialist on exposures in pregnancy.

Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at MotherToBaby.org.

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“What products can I use on my skin during pregnancy and breastfeeding?” As a MotherToBaby information specialist answering our texting service, every day I get questions about any type of product you can think of that can be applied to your skin! Anything from itching and antibiotic creams, vitamin C products, essential oils, homeopathic creams and gels, acne products, to cosmetics and skin care products. Pregnancy and breastfeeding can be stressful times, and since we always want what is best for the baby, we all worry that a product we are using on our skin may get to the baby and be a problem. But is it true? What should you worry about and what can you use (as directed) without concerns?

Your Skin

First, lets talk about your skin and how topical products (things you put on your skin) get into your system. Your skin is a large, dynamic living tissue that is made up of different layers. We need to understand the absorption process in order to evaluate the safety of cosmetic, medicinal, and chemical products that come into contact with our skin. When a substance is put on your skin, it first has to go through the outer layer of the skin called the stratum corneum, which is made up of dead cells. Then come the living layers of our skin, the epidermis (waterproof barrier), dermis (connective tissue, hair follicles and sweat glands), hypodermis (fat and connective tissue) and the vascular network.

How Much is Absorbed?

Different factors affect skin absorption, including how much is applied, the physical state of the product (is it a liquid, powder, gel, etc.), where on the body it is applied, how large of an area the product is applied to, the person’s age, and whether the skin is wet or dry at the time the product is applied. Often, only 1 or 2% of an applied dose is absorbed into your system. But sometimes, more is absorbed, especially if your skin has open wounds, cracks etc. or if you have a skin condition such as eczema. In fact, how “complete” your skin is can be the most important factor in determining how effective a barrier it can be to topical products.

It can be hard to get good safety information on every type of topical product. The FDA (Food and Drug Administration) does require cosmetic products to be “safe,” which is based on their specific labeling and use. Yet cosmetic products do not need FDA approval to be sold on the market, and often the companies make claims that have not been studied and cannot be proven. So it is always a good idea to check with our MotherToBaby information specialists and let us research the product and its ingredients for you.

Many times during pregnancy and breastfeeding, people worry about the use of retinoids (a class of chemical compounds contained in treatments for acne, psoriasis, wrinkles, and other skin conditions), high dose salicylic acid (a common ingredient in topical acne treatments), formaldehyde (often used as a preservative in cosmetic products), hydroquinone (a skin-lightening agent that can be used to treat age spots and sun spots), and chemical sunscreens to name a few. These products do have some concerns and should be used with caution when pregnant and nursing.

Other products that are applied to your skin have less concerns in most instances. These include over-the-counter antibiotic creams, corticosteroid creams (used to reduce skin inflammation and irritation from things insect bites or poison oak/ivy, but also in treatments for eczema and psoriasis), essential oils, menthol and lidocaine type products (used in products to cool or numb the skin), hydrogen peroxide (used in treatments for acne, sun spots, and age spots), fluoride and dental products, homeopathic creams and gels, vitamin C products (used in treatments to reduce fine lines and as an antioxidant to protect the skin), and things that you put on your hair and nails.

So that is the skinny on skin care! You might be able to use more products on your skin than you thought you could during pregnancy and breastfeeding. Even with a product that is considered low risk, you may want to check with your healthcare provider or with us if you have any concerns before using. We have a number of fact sheets and blogs that can answer some of your questions about topical products, and our information specialists are always happy to answer your questions by phone, text, email, or chat.

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There are a variety of uses for botulinum toxin, marketed as Botox, that include both cosmetic procedures and treatment for some medical conditions. The experts at MotherToBaby get questions about the safety of being injected

with Botox during pregnancy and breastfeeding. While more studies are still needed, we can answer some of your questions with helpful information as you decide whether or not you feel comfortable using it.

What is Botox?

Botox and Botox Cosmetic are used by healthcare providers. Both include botulinum toxin, though each are used differently depending on what issue is being addressed. You may also see it called OnabotulinumtoxinA or botulinum toxin type A. This toxin works by paralyzing muscles at the site where it is injected, causing the muscles to relax.

There is an illness called botulism, which you may have heard of, and it is caused by the bacteria that make the botulinum toxin. According to the CDC, botulism is a rare but serious illness and can cause people to have vision or breathing issues, paralyzes muscles causing them to feel weak, and can cause death in some cases. It is often caused by bacteria associated with improperly canned or preserved foods and symptoms are likely to present 18-36 hours after eating the contaminated food. You can read more about the different types of botulism here.

What is Botox used for?

When used for cosmetic reasons, the botulinum toxin is injected into specific areas, like the face or neck, in order to smooth out wrinkles or lines in the skin.

There are also individuals who get Botox to help with medical conditions. Examples include treating chronic migraines, urinary incontinence (or issues with the bladder), and spastic muscle movements in parts of the body. Some people also get Botox injections to help stop excessive sweating in certain areas of their body. There are several uses for Botox, and some are incredibly important for improving quality of life and function for people.

What is known about being exposed to Botox during pregnancy or breastfeeding?

The short answer is not a lot. There have been no well-controlled research studies in either pregnant or breastfeeding people. Botox is expected to be contained to the area of the body where it is administered to and not to circulate throughout a person's system. Because it is not known to enter your system, or bloodstream, it is unlikely it could cross the placenta to reach a developing baby or to enter breast milk. However, because we do not know for sure, many providers suggest avoiding using Botox during pregnancy and lactation. It is also thought to stay in your body from four to six months, so avoiding using it while planning a pregnancy if possible may also be advised.

There are some risks that come with Botox use. It is possible to get an infection in the area where you are injected, and the toxin could spread beyond where it is injected. This can cause people to experience issues breathing and/or swallowing issues and seeking immediate medical care if needed is important.

Speaking with your healthcare provider is always recommended by the experts at MotherToBaby. If you are routinely receiving some form of Botox therapy, it may be worth discussing this with your healthcare provider before you become pregnant. Weighing the pros and cons of your therapy can help you make the best choice for yourself and

your baby. If you are receiving Botox for purely cosmetic reasons, putting a pause on your injections may be well worth the wait if you want to take the least risk possible.

To read more from the Centers for Disease about botulism visit: https://www.cdc.gov/botulism/index.html

FDA Botox Drug Label: https://www.accessdata.fda.gov/drugsatfda_docs/label/2011/103000s5232lbl.pdf

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When you think medication or vaccine safety, you think clinical drug trials. Right?! Clinical drug trials are research studies designed to gather information to determine whether a new medication or vaccine is safe and effective in people.

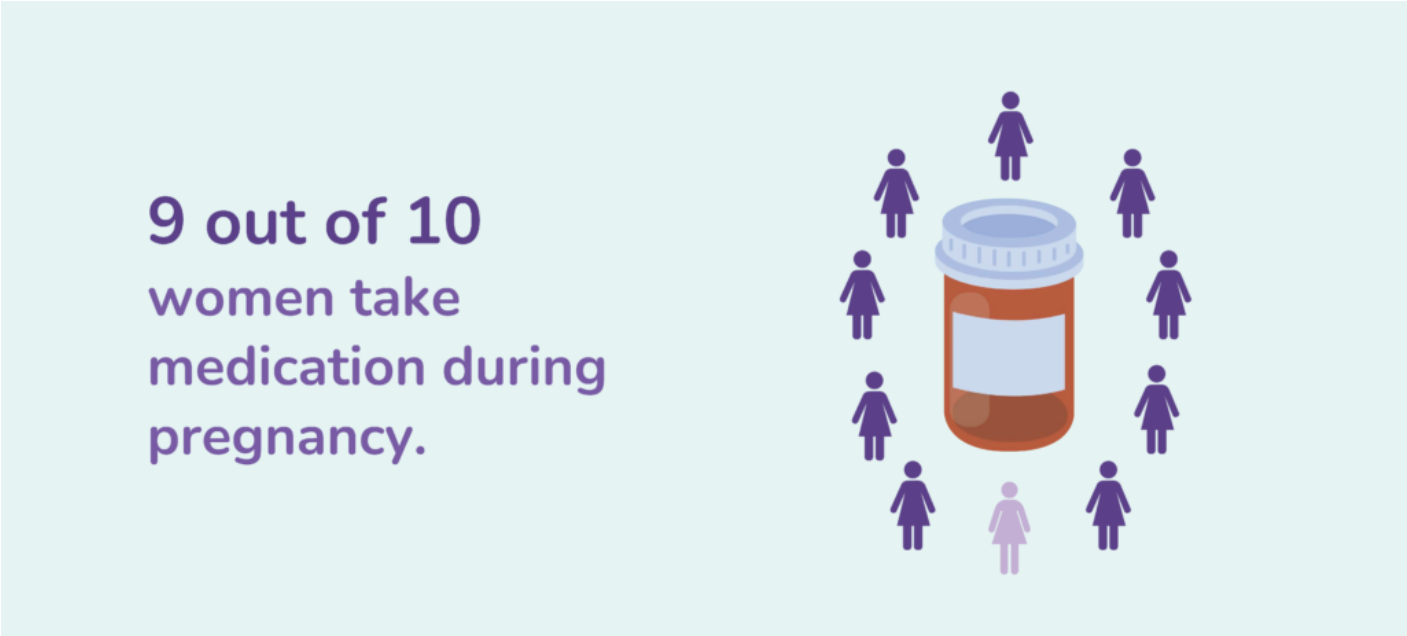
However, what most people don't know is that pregnant women are excluded from these studies when a new drug is being developed. Essentially, this means that once a medication is approved by the US Food & Drug Administration (FDA), it's prescribed to patients (including those who are or could become pregnant) with little to no information on the safety of the drug if used during pregnancy. Currently, less than 10% of medications approved by the FDA have enough information to determine their risk when used in pregnancy! To address this gap, the FDA may require observational studies, called pregnancy exposure registries, to be conducted on newly approved medications or vaccines to determine safety in pregnancy.

What are pregnancy exposure registries?

Pregnancy exposure registries are observational studies that collect health information on exposure to medical products such as drugs and vaccines during pregnancy. “Observational” means that study participants are **never** asked to take a new medication or to change any existing medications. After enrolling in the study they are simply followed by researchers through the remainder of their pregnancy, often by completing interviews or surveys or by allowing the researchers to access their medical records.

Why are pregnancy exposure registries important?

Pregnant women represent an important segment of the population, with over 6 million pregnancies occurring per year the U.S. alone. Additionally, studies have shown that 9 out of 10 women take medication during pregnancy – these women deserve to know if the medications they are taking will have any effect on their pregnancy, and pregnancy exposure registries are how we gather this information.



This information is used by pharmaceutical companies when listing safety information on drug labels. It is also helpful for healthcare providers to determine treatment plans for their pregnant patients. In many cases, pregnancy exposure registries have provided reassurance – and in some cases have raised red flags – on whether a medication is safe to take during pregnancy.

Why not just stop taking medications before you become pregnant?

It’s a common misconception that quitting a medication during pregnancy will be safer for the mom and her baby. In

fact, for many chronic health conditions (such as asthma or seizure disorders), it's safer for both mom and baby if the condition is well-managed. Some pregnant women may also experience acute conditions (like an infection) or develop complications during pregnancy that require medication. Physicians and pregnant women have the difficult task of balancing the risks and effects of an unmanaged condition during pregnancy versus the potential risks and benefits of starting or continuing to take a medication during pregnancy. Having enough information about the safety of the medication when used in pregnancy would make this task a whole lot easier.



And let's not forget: nearly half of all pregnancies in the U.S. may be unintended, which means that women may be exposing their pregnancy to a medication without realizing it because they weren't planning the pregnancy and won't know they are pregnant until they miss their first menstrual period.

How are registries organized/structured?

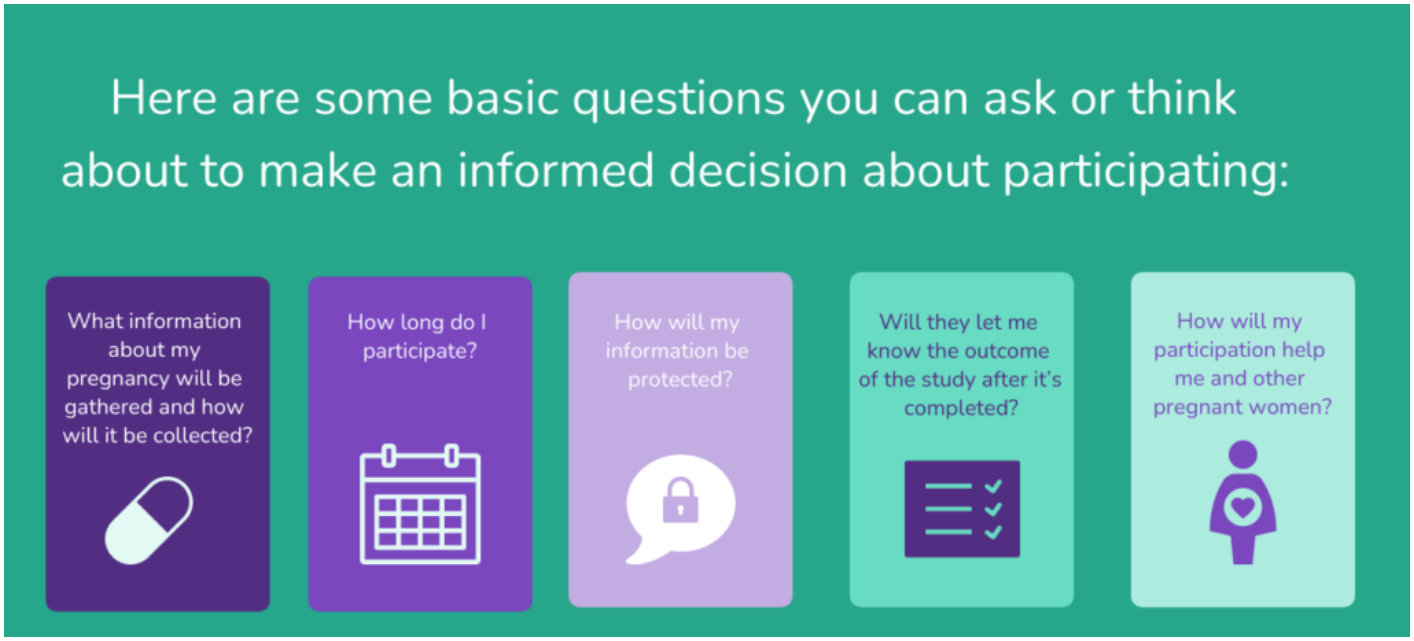
It's worth repeating: Pregnancy registries are **strictly observational**. Researchers will follow participants throughout their pregnancy and sometimes after the child has been born regardless of the woman's healthcare routine.

Researchers collect data about the pregnancy from the woman and/or (with the woman's permission) from her medical records. The type of data collected, communications and length of participation vary from one registry to another, so it's important you find out all the details about the study before you join.

Here are some basic questions you can ask or think about to make an informed decision about participating:

- What information about my pregnancy will be gathered and how will it be collected?
- How long do I participate?

- How will my information be protected?
- Will they let me know the outcome of the study after it's completed?
- How will my participation help me and other pregnant women?



Who participates?

Pregnancy registries are generally designed to compare pregnant women who have been exposed to the medication/vaccine of interest to those who have not been exposed. Depending on the registry, participants can include women who:

- Have taken a specific medication or vaccine during a current or recent pregnancy.
- Are pregnant and have not taken the medication being studied, but have the same health condition being treated by the medication being studied.
- Are pregnant, have not taken the medication being studied, and do not have the same health condition being studied.

Where can I find a registry to join?

There are a variety of organizations that run pregnancy registries. A great place to start is by asking your healthcare

provider. You can also look on the US FDA Pregnancy Registry site.

What makes MotherToBaby pregnancy registries different?

Here at MotherToBaby, we run several pregnancy exposure registries, called MotherToBaby Pregnancy Studies. Our studies are unique in a few different ways:

- Participants have access to our trained experts to answer questions on any exposures during pregnancy and breastfeeding – all at no cost to you.
- Some of our studies offer a free in-home examination of your infant and a consultation with an expert pediatric specialist who can answer any questions you might have about your child's growth and development.
- When you enroll in a study that includes free developmental follow-up for your child, you'll receive reports after each screening, which will provide you with information about how your child is developing relative to other children his/her age.

Interested in learning more about what it's like to participate in our studies? Meet Mariah, a study participant and maternal health advocate mom of 4. She shares her experience here.

If you or someone you know is interested in joining one of our pregnancy studies, we'd be happy to talk you through the process and answer any questions you may have.

- **Call 877.311.8972 or email MotherToBaby@health.ucsd.edu**

You can also browse through our ongoing studies here.

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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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