Ep. 78: RSV, COVID-19, Flu and Tdap Vaccination in Pregnancy

Michelle Fiscus, MD, FAAP from the Association of Immunization Managers (AIM) joins host Chris Stallman, CGC to discuss respiratory virus season and what pregnant people can do to help protect their babies against RSV, COVID-19, Seasonal Influenza (flu) and whooping cough (pertussis).

Resources mentioned in this episode:

Association of Immunization Managers:

Immunizationmanagers.org

BOOSTRIX Tdap Vaccine – MotherToBaby Pregnancy Study

Ep. 78 Transcript

You're listening to the Mother 2 Baby podcast, medications and more during pregnancy and breastfeeding. Ask the experts with your host, genetic counselor and mama for Chris Stallman.

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Welcome to another episode of the MotherToBaby podcast. My name is Chris Stallman, and I'm a genetic counselor, a mom of four, and a teratogen information specialist. So what that means is that I talk to people, so patients, family members, healthcare providers, and the general public about exposures that can happen before pregnancy, during pregnancy, while breastfeeding, or in cases of adoption.

And an exposure can be anything. So it could be a chemical at your job. It could be a medication that you take, or it could be a vaccine. Our guest today is here to talk with us about respiratory virus season and vaccines. Dr. Michelle Fiscus is a board-certified pediatrician and chief medical officer at the Association of Immunization Managers, or AIM, which helps to support the CDC funded immunization programs across the country.

Dr. Fiscus, welcome to the show. Great to be here. Thanks, Chris. So can you tell us a little bit about the AIM organization? Sure, we are a small but mighty 501c3 nonprofit that works nationally, as you said, to support the CDC funded immunization program. So every state in the United States has an immunization program, usually housed at their state department of health.

And then there are some cities, some major cities like Washington, D. C. or New York City or Philadelphia, Philadelphia. That have their own immunization programs within their states. And then we also support the immunization programs in the U. S. territories and freely associated states like Guam and Micronesia and the U.

S. Virgin Islands and Puerto Rico. And so we help. Those program managers, um, make their jobs a little easier. They have a lot that they have to do to make sure that vaccines are available in their jurisdictions to make sure that, um, every person that's, that's there has the ability to get vaccinated and to make sure that the information that they're getting about vaccines is correct.

Very, very critical. I feel like it had always been, but I think in the last few years, especially we we've learned collectively, you know how important that correct and timely information is so. Speaking of that, what are respiratory viruses and when is respiratory virus season? Respiratory viruses are, are those, um, illnesses that circulate in fall.

Um, sometimes they're common colds, which can be caused by thousands of different kinds of viruses. But the ones that we really think about with respiratory season are seasonal influenza or the flu, um, something called respiratory syncytial virus, which may be a little less. We call that RSV because respiratory syncytial virus is really kind of hard to say.

And then, um, we also see, um, COVID 19, of course, SARS CoV 2, which is the virus that causes COVID 19, which really hasn't settled into a season yet, but Because of the number of hospitalizations and sick people that we get from COVID 19, when you layer that on top of the fall flu cases and the fall RSV cases, it really starts to strain the U.

S. health system. Um, and so we're going to lump COVID 19 into this too for the purpose of this discussion. Okay. Why is vaccination important? Well, vaccination is really our best, uh, defense against any of these viruses. Viruses are super smart. They're really good at mixing up their, their genetics and finding ways to get around.

Um, defenses that we have to fight them off and some of those viruses, like for instance, influenza or SARS CoV 2 that causes COVID, they change constantly from season to season and sometimes even within seasons. And so our bodies may have experienced those viruses before and they created this great immune protection against those viruses.

But then that virus goes out and puts on like a big nose and glasses and a mustache and it comes back and it looks completely different from the virus that your body saw the last time. And so these are vaccines that we really have to get over and over again. We're talking about influenza or COVID 19 because those viruses keep trying to outsmart the defenses that we have in place to keep us from getting super sick.

So when you're pregnant, You, um, you're a little bit, what we call immunosuppressed. You're, you're, it's a little easier for you to get sick. You're a little run down. Sometimes you're a little anemic because of pregnancy. And it's easier for those viruses to get in and cause problems that make pregnant people super sick.

And sometimes put them at, at much higher risk of being hospitalized or even dying from infections that maybe wouldn't be as serious had they not been pregnant. Okay. Absolutely. And what about risks to the newborn for things like RSV or whooping cough and pertussis? Well, those little babies come out pretty defenseless, too.

They get some antibodies from their mom from either transfer across the placenta. So if you get vaccinated with, say, a vaccine that protects against pertussis or whooping cough while you're pregnant, then that antibody can pass to your baby. Because when the baby comes out, they're not old enough. get vaccinated.

So we really rely on those antibodies that mom can give to protect and we all want to protect our babies the best possible way. So, um, so being vaccinated while you're pregnant, breastfeeding, these are all things that help protect the baby and help develop their immune system so that they can fight off a virus if they come into contact with it.

The other thing that we can do is, Make sure that if we're vaccinated, we're not bringing those viruses and those bacterial illnesses like pertussis into our house where then we're face to face with our babies and putting them at higher risk of getting them super sick. Those little babies, um, have to work really hard if they get a respiratory virus.

They've got little tiny lungs and not a lot of capacity. And so if we start to stress them, Um, then they have a really hard time eating. They have a hard time sleeping. They have a hard time growing. They might be super fussy. And sometimes we have to put them in the hospital just because they get dehydrated and need some oxygen to try to help, um, manage them until their bodies can fight off whatever illness we're dealing with.

So the vaccine certainly, as you said, can protect babies. family members, but also the person who is pregnant or newly delivered or breastfeeding as well. Because as you say, you know, we are absolutely worried about those around us, but we also need that person who was pregnant or who is breastfeeding. We need them to be healthy too, not only for their own well being, but for, you know, taking care of themselves and the people around them.

That's exactly right. And you know, when you get vaccinated, when you're pregnant, you kind of get to double dip a little bit because that vaccine. against flu or, or COVID is helping you not get seriously ill from flu and COVID. But then you're also giving those antibodies to your baby. So if they come into contact with it when they're really young and before they can get vaccinated, then that's also helping to protect them.

Remember, babies can't be vaccinated against COVID until they're six months old. So they have a really long window of exposure. exposure, where if we can get mom to give them some antibodies, they can really help protect them. And they also can't get vaccinated against influenza until they're six months old.

And then it has to be in the season when we're actually vaccinated against influenza. So some babies might be closer to a year. Before they get their first flu vaccine and um, and you know, having moms help give them a good healthy start with that protection is really important in those early days. I didn't even think of that, but I'm so glad that you mentioned it.

So my last two were both born in January. Um, and obviously we had to wait six months for these vaccinations and it, it did, you know, we've just waited until the next cold and flu season, you know, it was a bit more than six months for us and honestly, I never would have put that together. So I think that's a great reminder that sure, six months is, is where it can start.

if you're in that particular season for flu. I know you had mentioned that COVID doesn't really have a season, but for flu, you know, there are some, some clear guidelines and they're not available everywhere throughout the entire year. Right. And the same goes for RSV. We, we only, um, vaccinate pregnant people right now when it's RSV season, when we're, when we're looking at having a baby during RSV season, which generally runs October to March or so, November to March.

Um, So, you know, if you're pregnant and it's April, you may not be able to get an RSV vaccine right now, and your baby may be born without the ability to protect them. So we do have kind of a safety net or a second chance with RSV, something called nircivumab, which needs an acronym. But yeah. But that is a, what's called a passive antibody that we can give newborns that come into their first RSV season.

It’s not really a vaccine. The vaccine teaches your body how to make antibodies. This is actually giving the baby antibodies. Our to what the mom would give if the mom had been vaccinated, and we can give that one shot to a newborn baby who was born during our RSD season to help protect them. So if the mom didn’t have an opportunity to protect their baby because of these vaccines, the timing of their pregnancy in the RSD season, there is an opportunity to protect the baby directly when the baby’s born.

What vaccines are recommended during pregnancy that can protect against respiratory viruses? And is there a specific time in pregnancy where people should get them? Great question. So, for your time. Every person needs to get a flu vaccine and that can happen at any point in a pregnancy. So, um, if, you know, if you’re getting into October and you’re pregnant, that is a perfect time to get vaccinated against influenza.

You can even get vaccinated a little earlier in the season if you’re due to deliver your baby in like September or October. You might even be able to get vaccinated against influenza as early as August in some cases. So, if you If you’re pregnant right now, you should go get a flu vaccine. Um, I’m a pediatrician.

We like to say flu before boo. So we want to get everybody vaccinated against influenza before Halloween. Yeah, that’s awesome. That’s the ideal time. But if you miss that, you can get vaccinated against influenza anytime during the season. But, but really the idea is you want to get that vaccine in before we really start seeing the virus.

Thankfully right now in the U. S. influenza is still pretty quiet. CDC does a lot of careful watching to see what’s happening with these viruses and we’re not really seeing much in the way of flu. So you’ve got some time, but really ideally before the end of October. you want to try to get a flu vaccine.

You should also get what’s called a Tdap vaccine, which is not against a virus but protects your baby against whooping cough or pertussis. That’s a bacterial infection that babies can get when they’re very young. They themselves can’t start getting vaccinated against it until they’re two months old and even then that’s just the first of a series of shots.

So they have a period of time in their early months. where they’re vulnerable to whooping cough, and that’s a bacterial infection that can be fatal in newborn babies. And so, giving mom the Tdap vaccine helps to give those antibodies to the baby before they’re able to get vaccinated themselves, and helps to protect them.

From whooping cough, which is really, really important. And then, um, the RSV vaccine, if you’re pregnant, coming into RSV season. So, um, beginning now, September, October, until, um, January or so of this year. It was between 32 and 36 weeks gestation is when you should get your RSV vaccine against respiratory syncytial virus.

Again, that is mainly to protect the baby, although moms can get serious RSV illness as well. But really what we’re trying to do is protect that baby who was born during RSV season. So if you’re between 32 and 36 weeks of your pregnancy, that’s the window where we want to get you vaccinated against RSV to help the baby.

And then COVID vaccines can happen at any time. And so just recently in August, we had new updated COVID 19 vaccines approved. And if you are pregnant, you Or even if you’re not pregnant, if you have not had that new updated 24 25 COVID 19 vaccine, you really need to go get that. You can get it at any time during your pregnancy to help protect you from serious COVID disease, but also help to pass some of those antibodies to, to your baby, who again can’t get vaccinated until they’re six months old.

Um, a lot of people think, you know, well, I’ve had COVID, so I don’t need to worry about getting COVID vaccine. And

the way I like to think about this is, you know, if you've got a kid and, um, let's say they're five years old and you go into the closet and get out last year's winter coat and put it on your now six year old, it's going to be way too small for them in most cases.

And that coat might give them a little bit of protection against the cold in the winter, but if it gets really bad, it is not going to be enough. And that's kind of how I think about COVID vaccines. Last year's COVID vaccine, yeah, might cover you a little bit, but the new viral variants that keep evolving and changing and putting on new disguises are looking a lot more like a blue flannel coat than last year's pink puffy coat, and your immune system might not know what to look for.

So you really need to go get that updated vaccine, so if you have not had a COVID vaccine since September, you're behind, and you really need to go get that updated one, especially if you're pregnant. And are there other vaccines that might be recommended for some people during pregnancy? I'm going to give the very, um, scientific response of independent.

If, if you are someone who might be at high risk for something like Hepatitis B, um, it might be recommended that you get a Hepatitis B vaccine, again, to protect yourself and also to protect your baby from Hepatitis B. Hepatitis B is one of those viruses that down the road can cause cancer. Um, liver cancer is what we see with hepatitis B.

So that's one that we really want to prevent in everyone. Um, so you could get a recommendation for that if you've not had those vaccines. Hepatitis A is another one. If you're someone who maybe has liver disease or is at high risk of having trouble from a hepatitis infection, it might be recommended that you get a hepatitis A vaccine.

And if you're planning on traveling internationally while you're pregnant, there may be certain travel vaccines that are recommended. So make sure you check with your doctor to make sure that if there are any travel vaccines that might be recommended that you're getting those too far in advance of you going on those international trips.

So as you said, you know, it's going to depend and I'm going to add a very mother to baby answer to that, which is. Also, something you've already mentioned, talk with your health care provider and they can let you know what vaccines are recommended for you. Absolutely. The best place to get information. Dr.

Fiscus, thank you so much for being on the show today. But before you go, what is the final thought you would like to leave the audience with? The one. The best thing that you can do this respiratory season to help protect you and your baby the best is to receive vaccines against RSV, COVID 19, and influenza, and also the Tdap vaccine to prevent whooping cough in your baby.

We all as moms want to do the absolute best thing we can do to protect our babies and these are the absolute best things that you can do to make sure that your baby gets off to a healthy start and to protect you for the rest of your pregnancy to make sure that you don't suffer any serious consequences from any of these diseases that we can so easily prevent with a vaccine.

So true. Thank you again. Um, and in our show notes, we'll put some information about the mother to baby vaccination fact sheets that we have. And of course, some information about AIM. Perfect. So you can find out more about AIM at immunizationmanagers. org. We do have a lot of resources there that might be helpful, but also look at places like March of Dimes, the Centers for Disease Control and Prevention, and healthychildren.

org, which is the American Academy of Pediatrics. parent facing website. All of those are great resources for factual information about the immunizations that you and your baby need. Excellent. Thank you so much. Thanks for having me. Oh, you said the magic words. That means we would like to have you back for a future show.

Absolutely. Anytime. That would be wonderful. Thank you. And that's going to do it for this episode of the Mother2Baby podcast. On the next episode, we're going to be joined by a special guest from our partners at an organization called Vaccinate Your Family. She is currently pregnant and we'll talk about some of the myths she's been hearing among her circle of friends surrounding vaccination during pregnancy.

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Ep. 78: RSV, COVID-19, Flu and Tdap Vaccination in Pregnancy

Dr, Jessica Brumley, the current president of the American College of Nurse-Midwives (ACNM) and an Associate Professor at the University of South Florida in the Department of OBGYN joins host Chris Stallman, CGC. Dr. Brumley addresses the most common questions she gets about midwives, who they serve (hint: it's not just pregnant people) and where you can learn more about midwives in your area.

Dr. Brumley has worked in her state on quality improvement work including the Promoting Intended Vaginal Delivery and Mother-Focused Care Initiatives. Her research has focused on group prenatal care implementation and human milk and lactation optimization. Dr Brumley is an internationally recognized expert in midwifery, physiologic birth, lactation, and respectful care.

Resources mentioned in this episode:

Find a Midwife

American College of Nurse-Midwives (midwife.org)

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Welcome to another episode of the MotherToBaby podcast. My name is Chris Stallman, and I'm a genetic counselor, a mom of four, and a teratogen information specialist. So what that means is that I talk to people, so patients, family members, healthcare providers, about exposures that can happen before pregnancy, during pregnancy, while breastfeeding, and in cases of adoption.

And an exposure can be anything, so it could be a medication you take, it could be a vaccine, it could be something in your workplace, lots of different things can be exposures. And the good news is lots of different health care providers can also talk to you about exposures in pregnancy and breastfeeding.

In fact, our guest here today is here to talk with us about the important roles that midwives play in healthcare. Our guest today is here to talk with us about the important roles that midwives play in healthcare. Dr. Jessica Brumley is an internationally recognized expert in midwifery, physiologic birth, lactation, and respectful care.

She is the current president of the American College of Nurse Midwives and an associate professor at the University of South Florida in the Department of Obstetrics and Gynecology. Dr. Brumley has worked in her state on quality improvement work, including the promoting intended vaginal delivery and mother focused care initiatives.

Dr. Brumley, welcome to the show. Thank you so much for having me. It's our pleasure. Can you tell us about midwives as a profession and how they're different from other health care providers? Absolutely, happy to answer that. I think it's important to recognize that midwifery is a unique profession.

Sometimes it can seem to be mixed in with nursing and or medicine. Um, but really, um, midwives have been practicing since the beginning of times, right? Since we've been having babies, we've needed, um, support during that time. And our focus is really on the normal physiology, right? How our body normally changes during different stages of life.

So whether it's when we start menstruation, when we get pregnant, the stage of when we stop, right, having our menstrual cycle. All of those are normal phases and that is our focus on how do we optimize and how do we help to really support those normal processes that happen in a person's life. And then I also just like to remind people that, so we care for people not just in pregnancy but also outside of pregnancy.

Pregnancy and can help to provide care for mom and also the newborn during the first month of life. What is the most common question you receive as a midwife? Now, I know that there's lots and lots of those that could qualify. It's a very loaded question that I just asked, but what are some of the more common things that you speak with most patients about?

I've been in my practice for a long time and so we've built up a lot of awareness around the profession of midwifery. For a very long time, the most common question that I got was really just around what is a midwife and, oh, so does that mean you only deliver in homes or does that mean your patients can't get an epidural or these kinds of, I think, you know, misconceptions, um, that many people would often be surprised that I might come in with a lab coat on or, you know, look like other healthcare professionals, right, that were entering the space.

It wasn't sort of, um, it didn't meet their misconceptions. Um, and so we, we spent a lot of time building up awareness on, you know, the level of training that we get and, um, and the expertise that we have in this area. So let's take it in the other direction. What is the most unusual question that you have received as a midwife?

I think what's always really startling to me is how, um, People don't know, um, what, uh, about their body. And so I'm always really intrigued about the kinds of questions I get about things that are really, that I know are very normal, right? And so, um, you know, when, when, when somebody asks like, Oh, there's, there's, Does this look right?

Right? Or does this, you know, this is happening. Um, and I'm like, right. Uh huh. Yep. That's, you know, we deal with very intimate parts of somebody's anatomy and those are not the kinds of, um, the kinds of things that you often talk to your girlfriend about or your sister, your mom. And there's always these ideas around how things should feel and look and, and be.

And so, you know, if you're getting a random gray hair somewhere, somebody's like,

What the kinds of questions that they ask their midwife. Understood. That's, I, I think it's such a good question. It's such a great thing that there is someone that folks can ask because you say, you know, you may not talk about it with other people in your lives or your partner and you know, but there you go.

I talked to my daughter about one thing, right? One of the, one of the things like as a, as a, I don't know, not a pet peeve of mine, but like a point that I often explain is about the number of holes that a woman has, right? you know, because you just one that urine comes out of and one where we have bowel movements from and another one where a baby comes out of or you have your menses out of.

And there's a lot of people who don't know that, right? Like adult grown people that don't know about the difference in their anatomy. And when I say it, she looked at me and she rolls her eyes and she goes, mom, everybody knows that. And I'm like, no, everybody doesn't know that. Oh, yeah. I mean, I love it. I love to explain things to people so they fully understand how their body works so they can take care of it the best to the best of their ability.

Yeah, absolutely. So as a midwife, what are some things that you would want every patient to know? Hmm. Uh, that you are in control. That it's always your voice. That should be centered and, and matters that you have the right to say no. Um, can you please answer these questions for me? I'm not ready right now.

Can we, can I take a moment? Right. Um, the reason why I went into midwifery was because I heard that this was a profession that could empower people during a very important time in their life. And that that meant that they could apply what they learned at that time for the rest of their health care journey and that of their families and oftentimes, you know, mothers or pregnant people are the ones who control the health care dynamics for their whole family.

Yeah. And so making sure that I create this space that lets people know that they are the voice that matters in this room and not mine. Uh, that it's. That's the most important message that I, you know, can convey to anyone. Yeah. And it doesn't go out of style. You know, it's always a good time to remember, you know, that it is your body.

It is your life. It is your family. And, and that, you know, the outcome for you is what everybody should be working towards. That's right. Yeah, absolutely. So Dr. Rumley, for being with us today. But before you go, is there a final thought you would like to leave our audience with? Everyone deserves a midwife.

Everyone deserves the kind of care that a midwife provides. You can find a midwife in your community. If you can't find a midwife in your community, ask for a midwife in your community. This is the kind of care that everyone deserves. Absolutely. I could not agree with you more. Thank you. And of course, in our show notes, we'll have some information about the American College of Nurse Midwives.

That way, if folks are looking to learn more about this very important and super exciting profession, they can start there. Thank you so much. Oh, my pleasure, Dr. Brumley. Thank you for shining a light on midwives. As you say, you know, it's, it's not always super well known. So definitely good information to have.

And that's going to do it for this episode of the mother to baby podcast. Be sure to hit that subscribe button. So that way you never miss a new episode and you can go back and listen or relisten to some of those older episodes as well. You can find us on iTunes, Spotify, audible, or however you like to listen to podcasts.

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You can visit us on our website, mothertobaby. org, and there you can chat with an information specialist. You can look at our many blogs, information pages, our hundreds of fact sheets that are available free in English and in Spanish. And you can also listen to our podcast or find out how you can participate in our pregnancy studies.

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Dr. Emily Caffrey, a certified health physicist with the Health Physics Society, joins host Christ Stallman, CGC to talk about different types of radiation and their potential effects on a pregnancy.

Links Mentioned in This Episode:

Health Physics Society's Ask The Experts

https://HPS.org

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Thank you And an exposure can be anything. So it could be a medication you take. It could be a vaccine. It could be a hair treatment. And in some cases it could be in the place where you work. Today we're going to talk about a very specific exposure, radiation. And we have a very special guest to talk with us today.

Dr. Emily Caffrey is the program director and an assistant professor for the master's in health physics program at the University of Alabama at Birmingham. She is also a certified health physicist that specializes in calculating radiation doses from environmental sources of radiation. Dr. Caffrey, welcome to the show.

Thanks for having me. Excited to be here. Great. So let's get started today. We're going to talk about radiation. Can you tell us a little bit about what radiation is and how people are exposed to it? Yeah, absolutely. Um, you know, radiation is just a form of energy. So there's two types of radiation. There's non ionizing radiation and ionizing radiation.

So non ionizing radiation are lights, microwaves, your cell phone emits non ionizing radiation, things like that. There's also ionizing radiation, and that type of radiation is a little bit higher energy, um, that makes charged particles. Um, and that's the kind of radiation you get when you're talking about a CT scan or an x ray, something like that.

Um, that's ionizing radiation. Uh, and I, and I just want to point out that radiation is all around us. It was present when life first evolved on Earth. It was present when dinosaurs lived. It's still present today. Uh, we live in a radioactive world, and I think a lot of people don't know that. So I'd like to start with, radiation's all around you, and it has been your whole life.

Um, natural radiation comes from space, and it comes from living things that are in the Earth. The Earth's crust is radioactive. You may, if you live in a place that has high radon, um, you may have heard of radon coming from Earth up into your basement. That's a really common source of exposure. Um, and our human bodies and cells have adapted over time to respond to and repair the small amounts of damage you might get from these low levels of ionizing radiation.

So some of the more common forms of radiation, like you described, light, microwaves, CTs, would that also include mammograms and would that increase risks to a pregnancy? Yeah, that doesn't include mammograms. The mammogram is again a low energy type of x ray that's used to image the breast tissue to look for cancer usually.

Um, and You know, just like all other types of, of diagnostic imaging procedures, and I think we'll talk a little bit more about this as we get into it, um, you really aren't at risk when you have a low, a low, a diagnostic imaging procedure, those are very low doses, your, your pregnancy is not at risk, the unborn child, not at risk from those types of exposures.

And I'm really glad that we can talk about that and hear about that again, because it is the kind of thing, you know, if. certainly if you need it in pregnancy, it's a good idea to get your cancer screenings. Absolutely. Dr. Caffrey, can you tell us a little bit about the Health Physics Society? Yeah. And I like to tell people like health physics is a profession you've never heard of, but the health physics society is the professional society for health, which are radiation protection professionals.

So we are the profession that is devoted to the safe use of radiation. Um, so anywhere radiation is used, whether that's a hospital, a nuclear power plant, um, the government and military installations, um, there's gonna be a health physicist, a radiation safety officer, someone there making sure that the people and the environment are safe from that ionizing radiation.

So you may not see us, but we are there making sure that we're following regulations and keeping people safe. When you mentioned earlier that radiation comes from space, I got to say, I love hearing that. I think that that's such a cool and exciting thing. So let's talk about cosmic ionizing radiation. So what is that specifically?

And does that increase risks to a pregnancy? Yeah, it's space is always fun, right? And we're talking about sending astronauts to Mars and things, right? Radiation. So, you know, one component of your natural radiation dose that you get just by living here on Earth is from outer space, and that's called cosmic radiation.

Um, so particles and electromagnetic magnetic waves from outer space, um, come and hit and impact Earth. So you may have heard of solar flares and things like that. And the sun flings off all these charged particles. So those come and hit Earth. Now, Earth is actually pretty well protected. We have this magnetic field that's around Earth that deflects a lot of those particles.

Think of it as like a shield around Earth. And then our atmosphere, like a literal atmosphere above us, also protects us from a lot of that radiation, but not all of it. So some of that radiation is going to come in and actually get into Earth, like where you and I are sitting here right now. Um, and, and, and, There's more at the north and south poles and as you go higher in elevation because at the north and south pole the magnetic field that protects us is weaker and at higher altitudes you're just physically closer to the radiation coming from space.

So if you're, um, your background radiation dose, if you're at the North Pole or if you're standing on top of a 14 year in Colorado is going to be higher than me sitting here in my office in Huntsville, Alabama, which is basically at sea level, right? So it's just a small difference, but it does change a little bit.

Um, but you know, cosmic radiation contributes Um, about 5 percent of our average total background dose. So that's a very low, low number. You and I just living on Earth, which is radioactive, get about 3 millisieverts per year. And a millisievert is just a unit of radiation, uh, dose that we, that we use to count, you know, when we're talking about radiation doses, that's just a number we, a unit that we use.

Um, so you and I get about 3 millisieverts per year, and about 5 percent of that 3 millisieverts is from cosmic space radiation. Um, and I, and I want to add to that background radiation doses are too low to increase your risk of pregnancy or cause any harm to your unborn child. We are not worried about background radiation doses or doses that are lower, um, in, in than, especially not background, but lower than three is definitely not a concern.

And we'll talk a little bit more about what levels you might want to start thinking about, about, you know, where, at what levels you might want to be concerned, but definitely not at background levels. Great. Okay. So thinking about space occupation, what's out there? What about radiation exposure for someone who's working as a flight attendant?

I got to tell you, I got this question for the very first time, maybe six or seven years ago. And until then, it never even occurred to me. I was like, yeah, of course, there's radiation in the atmosphere. So I'm going to stop talking and let you give us this answer. Yeah, and I'm really glad you asked that question because we hear this concern a lot, both from flight attendants, pregnant women that travel for work a lot, uh, pilots, right?

We hear this question a lot. And I think people, uh, I certainly didn't before I got into this field, didn't think about flight attendants being, uh, people that are exposed to COVID. More than average, right? Um, but when you fly up high, especially people that fly transcontinental flights that go over those poles where you have a higher radiation dose, they get a higher radiation dose in the background.

They actually, in some cases, get higher radiation doses than workers at nuclear power plants, but higher does not mean there's a problem. So let's back up for just a second. Um, so the amount of exposure that you get from flying is significantly lower than, um, The exposure needed to cause any harmful effects to your, to your unborn child or to you, the pregnant, pregnant person, rightly, that we're not concerned.

Um, and just to give you some context, right, we talked about 3 millisieverts as our background radiation dose. Um, the radiation dose needed to cause harmful effects is roughly, and again, there's a lot of research on this that's ongoing all the time as we improve our models, but we're talking roughly 100 millisieverts.

Um, and again, millisieverts just being a unit of radiation dose, so 3. Is your background radiation dose, and 100 is what we're talking about for harmful effects. Um, and then to talk a little bit more specifically about flight, so how much radiation do you get in a flight? Well, your radiation exposure during a commercial flight is about 0.

01 millisieverts per hour of flying time. So to get to 100 then right? That means you need if you do some quick division. That means you need about 10, 000 hours during your pregnancy to reach the amount of radiation that might be harmful. I don't think anyone is even flight attendants, right? You're not flying in 10, 000 hours.

You really aren't quite safe from as a as a flight attendant or a pilot or even just someone that travels a lot while you're pregnant. That's it's not of concern. Excellent. And I'm so glad that you mentioned, you know, it could be higher than 100. wherever we start out. But that alone doesn't necessarily mean that there is a problem.

We have to have more information. We have to have all the pieces and that's so important for all exposures. But again, certainly for one like this, where you may not have known or you may not have remembered, it's like, oh, there's radiation all around us. Oh, wait, it also depends on how much we're being exposed to.

Now, for my favorite thing to ask all of the guests on the show, when I get the opportunity, what is the most interesting question about radiation and pregnancy that you or the Health Physics Society has received? Yeah. And I'm, and again, this is a great question. We get hundreds of questions from pregnant women and thousands of questions from the general public.

Yeah. Um, and you know, it's kind of, I didn't pick something like when I was thinking about this, I didn't pick something light hearted because this, this particular question that I'm going to throw is one that has stuck with me and it's the one I that just reminds me of why talking to people and using my knowledge to explain why things are okay or not okay or what you need to be concerned about and what you shouldn't be concerned about is so important.

Um, and so about, about a year ago, we had a woman right in, um, an Italian woman and she had had a diagnostic x ray of her pelvis before she knew she was pregnant. And her, her gynecologist told her the pregnancy was probably more risky because of the x ray. And she specifically asked us if she should terminate her pregnancy.

And under Italian law, you know, that was very time sensitive because she only had a week to make such a like, insanely impactful life decision. Um, and so I was so glad that she found us because I just want to be really clear here. The answer to that question is absolutely not. A diagnostic x ray, even to the pelvis, um, is not going to cause any harm to your unborn child.

And just the relief that we were able to provide, um, that, that soon to be first time mom was just like overwhelming. She wrote back to us, um, several times over the course of, you over the course of her pregnancy just to check in and she told us she sent us an email saying that her son was born happy and healthy and she was just so grateful and so relieved because she didn't know right and and so being able to offer that service and being able to help people understand and make massive decisions is just really amazing.

Uh, it gives me the warmth, like, that is amazing. I am not only so glad that the society exists and that folks like yourself are out there giving this information. I'm so glad they found you. I'm so glad that, you know, it seemed like a good outcome for them. That's wonderful and so important. And it is one of those things where, you know, you don't know what you don't know.

The good news is in a lot of cases, there are people, um, again, like you and the health physics society that are out there assisting with some of this information that isn't as commonly available. So thank you so much. What a great story. So Emily, if someone has a question specific for the health physics society, so radiation.

Or even, you know, concerns in the pre pregnancy or after pregnancy planning stage. How did they get to your organization to find this information? Yeah, thanks for asking that. Um, so you can find us at hps. org, hps. org. That's the website of the Health Physics Society. And you'll see a little Ask the Experts button.

And you just click that button and you'll see our webpage. Um, there's a webpage specifically for pregnancy and radiation. And on that web page are a couple of videos that the Health Society has produced. There are fact sheets about radiation and pregnancy. There are Q& A's from, uh, not only some, some basic Q& A's that we have written, but also, um, some stories that other people have, other questions that people have written in with.

We, we anonymize them, of course, and we post some of those to our website. And we cover everything from, um, background radiation, to pregnancy and flying, to what if I need a medical procedure, to I'm a lactating mom that's breastfeeding, you know, and I have to have this nuclear medicine procedure, you know, if, am I okay, what should I do?

Um, I think the medical industry does a good job of providing information, but I think people sometimes still want, you're still overwhelmed, right? When you, you have a child and you are doing something in the medical realm, like those are two very overwhelming things. In and of themselves. And so when you have another question that didn't get answered, please reach out to us and we're always happy to help.

That's awesome. And we are going to put information for the Health Physics Society in the show notes. Something else, um, that I was just thinking of, I, you know, talk to people all day. That's my job. But if I forget to ask my doctor or healthcare provider something, or if I'm traveling or busy, I might not always have the opportunity to connect with them, and I will say that sometimes I turn to Google.

So it's great to know where they can find this information. Providers are wonderful. They give good information. Sometimes I do not have it in me to wait 30 minutes on the phone. You know, life is busy. So it's great to know that we can find this information online as well. Dr. Caffrey, before I let you go for this episode, um, cause I would love to have you come back and talk more about radiation.

Is there a final thought that you would like to leave our audience with? Yeah, I think, you know, I think the thing I want to emphasize is that radiation can be scary. You can't see it. You can't feel it. You don't know it's there. Like anything you can't see and you don't know is there. Can be scary, but I just I want to emphasize that our bodies evolved in this radioactive world.

They have repair mechanisms for low doses. And we know from population studies from epidemiological studies. That the amount of radiation used in these diagnostic procedures, so x ray scans, mammograms. Um, even to the pelvis area are just not are way too small to cause harm to your unborn child. So you don't need to worry about those types of procedures.

You know, and if you are concerned or you had a specific procedure or you had a nuclear medicine procedure, you know, those are things that experts can talk to you about and counsel you through, um, to make sure that you're getting up to date information. And it's so important to remember to ask those questions because diagnostic procedures can prevent a lot of issues that are harmful to your baby, right?

And, or could be harmful to your, to your unborn child and, or yourself, right? As the pregnant woman, like, um, There are actual harms that can be done by not having a CT scan when it's clinically indicated, and the radiation dose should, should be something that you think about, um, and, and be aware of and educated about, but it should not stop you from getting a diagnostic procedure that could potentially save your life or your unborn child's life.

So radiation's scary, but we, um, myself, the Health Physics Society, and all of my topic editors and experts are here to help. Hps. org or through the mother's baby website, there are links, um, and you can find us online and we are, please reach out. We are happy to help. Absolutely. And thank you. Thank you for the reminder that, you know, these procedures, MRIs, CTs, and so forth are not done lightly.

They are done because someone needs it, especially during pregnancy and you, you probably do need it. So please feel free to contact. The health physics society or mother to baby with any questions that you have. Dr. Caffrey, it was my pleasure to speak with you today. Thank you so much for being on the show, giving us all this great information, and we hope to have you back in the future.

Thank you so much for having me. It's been a pleasure. And that's going to do it for this episode of the mother to baby podcast. Be sure to hit that subscribe button. So that way you never miss a new episode and you can go back and listen or relisten to some of those older episodes as well. You can find us on iTunes, Spotify, Audible, or however you like to listen to podcasts.

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Ep. 78: RSV, COVID-19, Flu and Tdap Vaccination in Pregnancy

Host Chris Stallman, CGC, welcomes back Maternal-Fetal Medicine Specialist and social media health educator, Dr. Shannon Clark of @babiesafter35. Dr. Clark joins the podcast for a special Folic Acid Awareness Week episode and debunks potentially dangerous folic acid myths being spread on social media. Hear the evidence-based facts in this important episode!

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

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Ep. 78: RSV, COVID-19, Flu and Tdap Vaccination in Pregnancy

Taylor Dubuisson, the Coordinator of Training and Best Practices for the Disaster Distress Helpline, joins host Chris Stallman, CGC to talk about dealing with a natural disaster during pregnancy and breastfeeding. She describes what a parent should prepare in an emergency kit and the free resources available should disaster strike. Taylor is also a mother of two toddlers and has spent the last 15 years living in hurricane-prone areas including southern Florida, Guam, and coastal Mississippi.

Resources mentioned in this episode:

Disaster Distress Helpline: Call/Text 1-800-985-5990

MotherToBaby Hurricane Blog

American Red Cross

Centers for Disease Control and Prevention: Prepare for a Hurricane