



Episode 322: Coronavirus and COVID-19: A
Common Sense Guide With Pediatrician Dr. Elisa
Song

Child: Welcome to my Mommy's podcast.

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Hello, and welcome to this special edition of the Wellness Mama Podcast, where I will be focusing quite a bit on coronavirus, COVID-19, and all of the things we need to know about this. I'm here with someone I really highly respect and I'm excited to share with you on today's podcast on this topic. Dr. Elisa Song is an MD. She's a pediatrician and a pediatric functional medicine expert. She's also a mom. She runs an integrative pediatric practice and has been quoted across the media when it comes to coronavirus and COVID-19. She has a really well-researched post that goes into detail on this, and that will be linked in the show notes at wellnessmama.fm, for all of you who want to find it, along with all of the resources we talk about in this episode. And I think her perspective is really valuable, both from the medical side and as a mom. She's in the data daily. She is seeing patients daily. She's keeping a very close pulse on the trends as we've now upgraded to a pandemic. And in this episode, she's going to really go through, basically, what we need to know medically, what we need to know as parents, and how to handle both the societal and economic issues that come along with this and if anyone in our families were to catch it. And so, we're going to go deep on all of those topics today, and she's going to really break down the myths related to this, what we do need to know and why, while we do need to take this seriously, we don't need to panic and be afraid. So, without further ado, we are now going to join Dr. Elisa Song about all things coronavirus.

Katie: Dr. Song, thank you so much for being here at such short notice to answer all of our questions.

Dr. Song: Oh, yeah, no problem. I mean, this really is sort of a last-minute kind of a thing because it's such a moving target with coronavirus and really we need to keep updated every day.

Katie: Exactly. And I knew that I wanted to make sure I spoke with you about this because not only are you a pediatrician, but you're also a parent and you're also a researcher and you are staying on top of all of this information. So, to start broad, I know a lot of people have a lot of questions about coronavirus, specifically COVID-19. To make sure we all are on the same page, can you just define what this virus actually is?

Dr. Song: Yeah. That's a great question because you'll see a lot of different names in the media. So, COVID-19 is actually the name of the respiratory illness that's caused by the novel coronavirus that was just detected in Wuhan, China back in December. Fast-forward we're actually not even three months from that time and just yesterday as of our recording March 11, the World Health Organization declared the novel coronavirus now a global pandemic. Well, you'll see the virus is actually circulating and now there's been a mutation so there's two different strains that we're aware of. You may see it in the news as 2019 novel coronavirus. You might see it as 2019-nCoV or you actually may see it as SARS-CoV-2. Now, why is that? Because years ago when another human coronavirus that caused SARS, Severe Acute Respiratory Syndrome, that was SARS-CoV and so this one looks very similar. So, those are all the same names 2019 novel coronavirus, 2019-nCoV and SARS-CoV-2 and then COVID-19 is the disease caused by the new coronavirus.

Katie: Got it. Okay. That's really helpful.

Dr. Song: Yeah. And so what we have to remember is coronaviruses have been circulating forever and so we have this huge range of coronaviruses. They're named coronavirus because of the Latin word corona which means crown. So, if you look at these pictures, it's actually... I mean, I have to say from the pictures, it's a really pretty virus with these crown-like spikes that are sticking out from the virus that then attach to our cells. But coronavirus can cause very, very mild symptoms like the common cold to more severe illnesses like what we're seeing now in COVID-19 and in SARS and in MERS, Middle East Respiratory Syndrome. So, we wanna really understand that, yes, this is a more virulent and pathogenic virus that is circulating, but I'm so glad you're doing this podcast because we really need to break through a lot of the hysteria and the panic. And I've been telling my parents in my practice, let's just be rationally prepared. Let's try to, you know, kind of weed through all the panic and see what we as parents really need to do for our kids.

Katie: Absolutely. And that's exactly why I wanted to have you on today. And I know as you said that just as of the time of this recording, I know it was very recently upgraded to a pandemic. And I know that now there are travel bans being put in place and a lot of major events in the U.S. have been canceled because of this. But based on the numbers, how many people actually have this version of the coronavirus that we're actually seeing? Is it more people than the flu? Like, what are we looking at proportionally?

Dr. Song: You know, right now it's not necessarily more than the flu. I think what the concern is, is the mortality rate, and of course, you can't help but pick up the paper... I don't know how many people actually pick up the paper nowadays, but, you know, open up your laptop, look at the news, turn on the radio, scroll through your whatever social feed you're on and hear of another death here and there. And that's what is frightening parents, grandparents. It's frightening kids too. I mean, my son just literally last night came home and said... He asked me, "Are all grandparents going to die?" And I thought, "Wow. Where did you hear that?" Right? And he heard it from another boy in his class. And so, you know, it is the mortality rate that is very concerning. And the way that I've been tracking it, and there are lots of flaws in the different trackers, but Johns Hopkins University has a tracker that uses five different databases. So, I do think that they're probably the most accurate and they update... It's literally a live update. You can go on there and look at the timestamp. Here in the United States we're seeing an increasing number. And there are some challenges with tracking and knowing the actual numbers because we in the United States have had a paucity, I would say a really unfortunate paucity of test kits. It's only just this week as we're speaking, so March 11 that clinicians like me, you know, out in the field, we are the ones who may be seeing coronavirus and diagnosing COVID-19, but it's only now that I just have the capability to test patients. But even that's very, very limited because we are limited by the supplies that the labs have.

So, right now, we know that on March 12 there's little over 1,300 cases in the United States and there have been 38, you know, tragic deaths here in the States, many, many more in Italy and China. But looking at the mortality rate, we have to take into account given that there are very, very likely and this is not to sound scary at all, but there are very, very likely many, many people in our communities, children and adults who have coronavirus and have no idea. And we don't know. The public health department doesn't know because we haven't tested them. So, when we look at that and then look at the number of deaths, we're likely looking at a much lower mortality rate than what's been reported. In the news, it's been reported to be, you know, anywhere from maybe 2 to 3.5%. Some experts think that it is likely well under 1%. We just don't know. I mean, that is one of the concerns is that because it's novel, brand new, the world has never seen this before December 31 when Wuhan, China announced it. But there's a lot of unknowns, but even in the short amount of time, you know, less than three months, researchers are really trying to identify what's going on, the characteristics of the coronavirus, the clinical symptoms and how we can better identify and maybe even treat coronavirus and COVID-19.

One thing that I want parents to know, as far as symptoms go, children and infants seem to be really very spared of serious illness. So, we can breathe a sigh of relief in that sense except that, you know, what I'm concerned by is that many children are likely then, you know, asymptomatic transmitters. And what we do want to be mindful of is that, you know, many of our grandparents, you know, people over 70 years of age. Age seems to be the most significant factor in serious illness and also death. So, you know, we do wanna do our part to stay healthy ourselves and minimize the transmission of the novel coronavirus to those susceptible individuals. But to date, there have been no deaths reported in children under nine.

So, now the symptoms of COVID-19. They run the gamut. I mentioned that we can have asymptomatic carriers and we know that's absolutely the case now. It wasn't quite clear in the beginning could you be asymptomatic

and carry it, but now we know, yes, people can be walking around with the novel coronavirus, be infected but with zero symptoms, which is what we see with influenza. About 50% of patients with influenza will have zero or mild symptoms. So, the same thing with this novel coronavirus. The initial symptoms are often reported as fever which might not be present if you're really young or if you're really old or immunocompromised, and then upper respiratory symptoms, cold, sore throat, you know, stuffy nose, headache, you know, all the same things that we might think about with colds or flus which is confusing right now because we are still in the middle of influenza season. I mean, last week, I saw two kids with influenza B that I tested. Just yesterday I saw a family, the entire family of 4 including the 10-month-old baby and the almost 5-year-old boy had influenza A, and I will say, you know, the baby actually had it the least, was the least symptomatic. I mean, he was walking around smiling and playing. But then we worry about COVID-19 becoming more serious, becoming a lower respiratory infection with difficulty breathing and mild pneumonia and then some will progress on to more severe pneumonia and something called acute respiratory distress syndrome. This is what we're hearing about, you know, patients really in the ICU, the intensive care unit, with severe lung disease requiring ventilators, and then ultimately, their organs can start to fail and they may go into what's called sepsis, which I know a lot of people are familiar with that word sepsis, may not necessarily know what that is. But sepsis is not good because many, many people will die of sepsis and that's eventually what people die of. But I do want to emphasize, the vast, vast majority, 80% or more of people who are infected with a novel coronavirus have very mild symptoms and possibly no symptoms.

So, do we want to then test everybody? If I had it my way I would test everybody because I just want to know. Not to stigmatize or alienate and you have to be really careful of that too because there are a lot of misperceptions especially with children that I'm hearing in my kids or the kids at their school. When this first came out in China, there were questions like, "Well, so, should we not eat Chinese food? Should we stay away from all Chinese people?" We cannot, you know, really spread those misperceptions and we really wanna talk with children about what's real and what's not but in a non-scary way and we can go into, you know, how do we talk to kids about this because there are a lot of misperceptions. But bottom line, what I tell kids and what I tell parents, the vast majority of us, we're gonna have really mild symptoms, it's gonna feel like a cold, so we don't want to walk around panicked, but we also want to be mindful of the fact that there are people who are susceptible to having more serious illness and we wanna be aware and mindful of reducing the risk of transmission.

Katie: Yeah, absolutely. I think from a parent's perspective, it's a wonderful time to talk to our kids and explain how their immune system works and why hand-washing is so important. It's obviously something we're all already doing, but something that we can really help get across to them why it can be helpful. Like, there's so many lessons in this that we can, without being fear-based, impart to our kids. And I think you're absolutely right. I don't worry at all for anyone in my immediate family because I know that we're all in low-risk categories. But I think all of us living in our communities locally have an obligation to at least consider the ramifications for others, like you mentioned, the elderly population that we would encounter or I have friends who are immunocompromised or who have been, you know, organ donors who for different reasons would be more at risk. And also the fact that I know that some of the projection models, one of the bigger concerns is if this virus takes off too quickly and too many people are infected at once, we will run into issues like hospitals being overcrowded. And so making sure that we take into that community, like, effect into account as well as we're considering not just, is this going to hurt us, but how could this really drastically impact our communities and our economy going forward? So, to that note, what do we need to watch for as parents? I know you said

kids can especially potentially be asymptomatic and be able to transmit without even knowing, but what symptoms do we need to be on the lookout for and then also how can we reduce the chances of transmitting it?

Dr. Song: Yeah. So, that's a great question. So, the symptoms to look out for, initially, you know, as I said, it's confusing right now because they're really gonna be mild cold symptoms, and we're not going to know whether or not you have the common cold, you know, a coronavirus cousin the common cold, the sort of COVID-19 or influenza unless we test. However, I really want to urge all of you listening, do not rush to your doctor's office. Do not rush to the ER. Do not rush to an urgent care clinic to get tested because what we saw in China is the rapid spread was likely due to many, many people in the waiting room in the ERs lining in the hallways waiting to get tested and if they did not have coronavirus in the first place, they may be exposing themselves or if you did have coronavirus, exposing people who didn't have it. So, I would call your doctor's office first. Figure out, is this something that you need to be tested? Otherwise, do what we would normally do. I mean, Katie, you have such amazing resources on your blog on really how to support our children, you know, really naturally and, you know, boost their immune systems when they are sick. And we do the very, very same things. This is not different. I still recommend to my families, "We're gonna up your vitamin D. We're gonna up your vitamin C. I use Oscillococcinum. We use different immune boosters. I do use elderberry.

So, there are lots of different things that we can do that would be the same. So, we're gonna treat initially your child's cold or flu symptoms in the very same way regardless of what is going on, but if your child starts to have difficulty breathing. Now, what are the signs of difficulty breathing in your child? Well, if they start to breathe maybe a little bit more quickly, you can count how many breaths they're taking in a 15 second period. One breath is an inhale and an exhale and then multiply it by four. That'll give you how many times they're breathing per minute. If they're breathing more than about 40 times per minute, I would want you to call your doctor. Other signs that your child might be having difficulty breathing, of course, if you hear any wheezing, whistling sound, and sometimes that's from the nose, we can't tell, but if it's also associated with flaring of the nostrils when they're breathing or really their stomach muscles or the rib cage pumping in and out using extra muscles to help them breathe or if they're grunting every time they exhale. Those are signs that they're increasing their "work of breathing" that they're using a little bit more energy to breathe. So, those are times when I would want you to call your doctor. And again, I would urge you to call your doctor first before you go to urgent care just to assess what you should be doing. Now, you know, that being said, you know, the best way to really prevent coronavirus transmission and also reduce the likelihood of our kids and ourselves getting infected, the number one is washing hands. And I know that you're seeing that in the news. It's so common sense, but really and truly, this is so important.

There was one study... There were statisticians that looked at airports and really looked at what could the impact be of properly washing our hands? And I'll go into what properly means. But the first statistic to know is that, you know, when people have kind of watched, you know, other people in the bathroom after they've gone to the bathroom and, you know, leave the restroom, about a third, one in three people don't wash their hands after going to the bathroom. And so that's something that is really startling. And I would bet that many more kids don't wash their hands after going to the bathroom. So, just, you know, talk with your kids about that. And then they looked at, you know, were they doing it the right way? And when they looked at that, they saw that only about 50% of those people who actually did wash their hands were doing it the right way. And I

can tell you when I've watched my son, right, what does he do? Run his hands quickly under the water. Maybe just put a tiny little bit of soap on and wet his hands and that's it. Right? That's not proper hand-washing. So, how do we do it the right way? And I wrote a blog on how to teach your kids how to wash their hands the right way because this is really, really important. We wanna wash their hands I would say at least 30 seconds because some of the studies looking at influenza virus they found that 30 seconds is really what we need to do. Not singing your ABCs one time through, right? Most people can sing their ABCs in about 30 seconds. So, we wanna wet our hands, lather with soap, and then what's really, really important, get not just your palms like most people do, backs of the hands, in between our fingers and under our nails. And you can get under your nails by opening up your palm and rubbing your nails on the inside of your palm and doing that for 30 seconds. And then we wanna rinse and dry and then, of course, we wanna... When we turn off the faucet if we're in a public restroom, not so much in our own home, but in a public restroom, you wanna turn off that faucet either with a paper towel you use or with your elbow or something else because we don't wanna recontaminate our clean hands. But why is this important? They found that if people could wash their hands the right way, if just 60% of air travelers wash their hands in the right way and maintain clean hands, it could slow down the spread of coronavirus infections by almost 70%. That's huge.

And really, you know, one of the things that I looked at, it wasn't clear in the beginning of what was then the epidemic now the pandemic was, could this novel coronavirus live on surfaces like, you know, handrails, you know, like your cell phone, laptops, countertops? It wasn't sure. But now we know, yes, it can live on surfaces. And when we look at other similar coronaviruses like the SARS coronavirus, the MERS coronavirus studies have found that, you know, we know that the coronavirus can live on surfaces for at least three hours, but maybe even up to nine days. Now, that is not to panic you, but to let you know that if you're out and about and you're touching anything and, of course, we are touching things all the time, you want to make sure that you wash your hands effectively before you eat, before you touch your face at all. Now, when we... That's another issue too. I was just actually... I spoke with a reporter who wanted to get my tips as a pediatrician on how do we keep our kids' hands away from our faces? Right? I know, you know, Bodi... And not that Kenzi is perfect in all of this, but, you know, Bodi is younger and he just... I mean, he's just a little grosser, right? I mean, he kind of touches things all the time, puts his hands in his mouth. I mean, he's just, you know, everywhere. And so really, you know, how do we keep our kids' hands away from their eyes, their nose, and their mouth? Because we know that, you know, adults, when they've looked at adults, we touch our faces at least on average 23 times an hour. That's more than once every three seconds. And for kids, it's likely more than that. And, you know, when we do touch our face, it's usually around our mucous membranes, eyes, nose, and mouth exactly where we can have coronavirus enter. So, we don't want our kids to panic, or we don't want them... We don't want to constantly be nagging them, "Stop touching your face. Don't do that." What we wanna really do first is helping kids be aware of when they're touching their face because if we're not aware and paying attention, we can't stop that habit. So first have them just notice, while you're sitting at the dinner table while you're sitting reading a book, notice how often they're touching their face. And then when we ask... When we want them to stop doing that, instead of saying, "Stop touching your face," you wanna frame it in a little more positive way. We wanna frame it in the way that we're telling them what to do, what positive action to take instead of what not to do. "Keep your hands down. Keep your hands in front of you. Put your hands on the table." Whatever it is that we want them to do, but, you know, bottom line, we want them to stop touching their face, but if we constantly nag and yell at them, they're gonna tune that out eventually. So, we wanna frame it in that more positive way, right?

And then, you know, with washing hands... I mean, washing hands with soap and water is the number one way to keep our hands effectively clean if we're doing it the right way, but we're out a lot and many of us are hunkering down. Some schools have closed, so your kids are gonna be at home more and maybe not out in public places and so you have your bathroom to wash your hands with soap and water, but many times we don't have that. And so, you know, hand sanitizers are the next best thing, but when the studies have looked at what actually can kill or inactivate coronaviruses, human coronaviruses on surfaces, what they found to be the most effective, a few things, but one of the things that was found to be most effective is an alcohol solution with at least 60% alcohol. They've also found that like 0.5% hydrogen peroxide or a point 0.1% bleach solution can be effective, but we're not gonna... Hydrogen peroxide and bleach may be fine on surfaces, but that's not what we're gonna sanitize our hands with. So, that's where you'll see the recommendations online, at least a 60% alcohol-based hand sanitizer. Now, if you've gone to the store or if you've gone on Amazon, I mean, there's no Purell to be found unless... well, that's not true. There may be, but it might be \$100 for a tiny little bottle, right? And so, you know, there are lots of ways that we can make our own hand sanitizers and I know that you've written about that as well, but we wanna make sure it's at least a 60% alcohol base. With that, you know, I just literally yesterday put up a blog post of how do we do that, because it does take some math, some calculations, and you might have different percentages of isopropyl rubbing alcohol. So, if you have a 99% rubbing alcohol, you're basically gonna do two parts alcohol to one part aloe vera gel. If you're allergic to aloe vera gel and I just had a mom, you know, comment that she just can't find any aloe vera gel, you can use glycerin. That's a fine substitute. More commonly you'll see 70% rubbing alcohol or isopropyl alcohol. So, with that, you need to use more alcohol to aloe vera gel to make it a 60% solution. So, nine parts alcohol to one part aloe vera gel. And so I have three different options with the rubbing alcohol depending on what percentage you have whether you have 99%, 91% or 70% in an article that I literally just put up yesterday and, you know, parents are really appreciating that practical breakdown, right? Because if we're gonna go through the effort of making our own hand sanitizer, we want it to be effective.

Katie: That makes so much sense. And I love that you... You're right. I do have a post. I know you do as well. I'll link to both about the hand sanitizers and a lot of the things you just mentioned. And I love that you also mentioned vitamin D because this is something I always am cognizant of this time of year anyway because I know I've read data that having optimal vitamin D levels can reduce the risk of a lot of respiratory issues and the severity of lots of types of illnesses. So, even if we're not worried about coronavirus, this is still cold and flu season, there's still a lot going around. And I know you can speak to this better than I can, but since it is a fat-soluble vitamin, it's one you don't want to just overdose on. So, I know I test our whole family this time of year and make sure our levels are within range, but I feel like that is one evidence-backed thing that I think is important to be aware of and to take this time of year. Do you have any additional advice on the vitamin D front?

Dr. Song: Absolutely. So, one thing that I just wanna make sure people know is that as of now, we have no idea what an effective treatment against COVID-19 will be, whether it's pharmaceutical or natural. We just don't know. I mean, this is a brand new virus. And so I do want people to, you know, exercise caution and use their common sense when reading, you know, any number of posts online that may claim that certain natural supplements may treat and cure COVID-19. Now, that being said, we know that there are a lot of things that can theoretically help reduce our likelihood of getting the new coronavirus in the first place and significantly reducing our symptoms. And we have evidence for that, which is, you know, for me, as a pediatrician, I really wanna make sure that I'm recommending things that have solid evidence of potential good and also are not

gonna harm. So, vitamin D, as you said, I mean, that is one of the supplements that I am the most religious about in terms of giving my family and myself to keep us healthy throughout the wintertime because there are so many other germs circulating besides just this. And you're in Florida, but even in Florida where the sun is shining and kids are outdoors a lot more, many, many kids, in fact, the vast majority are still deficient or insufficient in vitamin D. So, I do recommend testing if you have that option because, you know, as Katie mentioned, vitamin D is fat-soluble, it does get stored up in your fat cells. It potentially can get to "toxic levels," although, you know, I have never ever seen that even in kids who are taking quite high doses.

But why vitamin D? Well, when we look at COVID-19, and I had mentioned that one of the complications that we worry about, although not common, but, you know, can be fatal is sepsis. And we know that vitamin D actually can help reduce your likelihood of developing sepsis if you get any infection. It's been called a "pro-survival molecule" and it actually helps our body produce a protein called cathelicidin that has amazing antiviral and antibacterial properties. So, maintaining our vitamin D levels at really optimal healthy levels is really key to keeping our immune system strong. Keeping our immune system strong with the right foods and with the right supplements is I do believe going to be the key to keeping us healthy and keeping our own coronavirus illnesses as mild as possible. So, you know, in general, once our levels are "optimal," the maintenance dose recommended by the vitamin D council of vitamin D3 supplementation is 1,000 IUs per 25 pounds of body weight up to, you know, 100 pounds and then they really, you know, have you... recommend limiting it to 5,000 IUs daily unless you can monitor it with your physician. So, I mean, my kids are getting, you know, 3,000 and 4,000 IUs of vitamin D3 per day. They are 8 and 10 years of age and that's the appropriate dose according to their weight. And I know they have good levels because I've checked them. I take 5,000 a day, but if I'm starting to feel a little under the weather, I'll take a little bit more.

So, there's vitamin D and then I'd also mentioned vitamin C. Now, vitamin C. What they found in studies is that IV vitamin C when given in the intensive care unit to patients with sepsis, you know, full organ failure, multi-system organ failure, can significantly absolutely reduce the death rate compared to those patients who didn't receive vitamin C. So, you know, I'm not gonna say that vitamin C will cure you of coronavirus if you do contract it, but certainly as a powerful antioxidant, it is a very important part I think of prevention and if we start to feel sick, you know, really, you know, helping support our immune systems to fight and ward off any infections. Really when we're sick with any infection, our body creates inflammation, of course, and produces a lot of free radicals. It's these free radicals that make us feel sick. When we have more free radicals we feel more sick. So, that's why, you know, when we see people with a range of symptoms, it is, I do believe, those people who have a higher level of antioxidant reserve that don't feel as sick and don't get as sick and, you know, don't get as many complications because those free radicals once they've done their job, you know, we want them around to fight the infection, but once they've done their job, we want to bring those free radicals down, get rid of them and mop them up with antioxidants. And antioxidants are gonna be, you know, vitamin C, vitamin A, vitamin E, think all the colorful fruits and vegetables, which is why we have to go back to the foundations of how do we keep our immune system healthy and really looking at food as medicine, getting rid of the sugar because sugar absolutely suppresses our immune system's ability to fight off infections. So, this is not the time to be... If your children are, you know, anxious or fearful, we don't want to give them sweets or, you know, treats that then help them maybe feel better temporarily because a lot of us may think about doing that. Oh, I know, you know, reach for the ice cream when we're nervous. But we don't wanna do that right now. We wanna really, you know, help our kids with their anxieties in another way, not using food and really using the power of food to keep our immune system strong.

Katie: A 100% in agreement with you on that. And to echo what you said, I think it's important to realize this is a virus, so it's not something that we have, like you said, even conventional treatments or cures for, but with any illness, we always have the option to support our immune system, to support our overall health, to get good sleep, to spend time outside, to take vitamin C. The things we do know have a benefit just for overall health and for supporting the immune system, and that's something positive we can focus on versus falling into the fear side which is also bad for your immune system to begin with.

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I know one question that comes up around this and I've been getting online as well, is to do with explaining what a cytokine storm is and ways that we can help our body to, again, have a strong immune system and to be able to handle if that was an issue, because I know that's something that apparently from what I understand, at least, a lot of these mortalities are related to sepsis, not to the actual virus itself. And the cytokine storm comes into play here, but I know... Can you explain this a little bit better?

Dr. Song: Absolutely. So, you're right on in that, you know, typically let's say with, you know, even with influenza, but also with the coronavirus with SARS or the current coronavirus, it's our own body's reaction, our own immune system's reaction that, you know, makes us symptomatic. And oftentimes, the actual infection, right, the coronavirus may be completely eradicated. It's not there anymore. But the inflammatory cytokines that your immune system have produced, then creates this cascade of effects that then can create what a lot

of people are now talking about this "cytokine storm." Now, this is not a new concept. In fact, even last year, every time influenza season comes around, there's questions about the cytokine storm, then the next question is, "Well, should I use elderberry because can't elderberry cause a cytokine storm?" And there's so much information out there and I've seen both sides say absolutely, no elderberries. If you're... During the flu season and if you're sick, elderberry is completely fine. And I think it's somewhere in the middle. Remember with sepsis, the cytokine storm, it really... If we can have enough antioxidants on board to mop up those free radicals and those inflammatory cytokines, that's gonna be the most protective thing. So, when we look at elderberry, in particular... And this post that I actually did on elderberry, I called it "Elderberry and the Cytokine Storm. Do you need to worry?" I mean, it's still, years later, one of my most popular posts and I'm being asked about it.

So, I do want to write a post with more evidence, but what I want people to understand and parents to understand is that elderberry does have immunostimulatory effects, but in beneficial ways, right? So, yes, it can actually create increased levels of inflammatory cytokines. And we wanna really understand that inflammation is not a bad thing, right? Just like when you get a cut and maybe there's a little pus and a little redness and then it heals, that's inflammation, right? When you get an illness and your body mounts a fever, that's inflammation. But those are beneficial because they're helping us fight whatever is going on. So, that's inflammatory cytokines. And then we have anti-inflammatory cytokines that are also produced by elderberry. So, when we have inflammation that's normal and healthy, we also need, you know, anti-inflammatory cytokines to come and say, "Well, you've done your job. Let's regulate the immune system and go back down to baseline." Go back down to our usual state of good health and hopefully we are in a usual state of good health. Now, that's where I think it can be sort of a double-edged sword. I think that elderberry can be beneficial. But I also think you can have too much of a good thing. So, I am not recommending that people take elderberry on a daily basis right now, but I am, you know, still using elderberry for my own patients when they come in with flu-like symptoms because I know how beneficial it can be to help fight that infection initially and then reduce the inflammatory response as they're healing. So, you know, that is where, you know, we wanna just understand that, you know, inflammatory cytokines is not a bad thing. Cytokine storm, yes, a bad thing, but elderberry is not necessarily the evil that some are making it out to be.

Katie: Good to know. Yeah. Thank you for clearing that up. And I know people still have a lot of concerns, especially in the last 24 hours even there have been travel bans that are announced. What's your take both as a doctor and as a parent on if we should be avoiding travel at this point? And if people are going to travel, do things like, for instance, wearing a face mask, will that actually help because I've seen conflicting reports on if that's even effective?

Dr. Song: Yeah. That's such a good question. I mean, that is the million-dollar question, right, because as we head to... I mean, some kids have spring break next week. In my school, you know, our kids have spring break in the middle of April. So, we're now in this next month of, you know, a lot of travel plans. And a lot of these travel plans will include flying. Now, the U.S. just announced that there is a travel ban to and from Europe. So, you know, for folks who have had... you know, made travel plans to go to Europe over spring break, that decision has been made for them. But domestic travel, families who have planned to go to Disneyland next week or families... My sister in Colorado, had plans to fly with her, her husband and her two, you know, almost-three-year-old twin girls to Florida to see my mom and my stepdad, you know, both of whom are in

their '70s. And my mother, you know, just in November was diagnosed with esophageal cancer and went through her chemo and had surgery and she's recovering. So, what do we do there? Right? And so we wanna think, who are we gonna visit? What are our risks for contracting coronavirus? How do we minimize those risks? And so, you know, I will say if you are traveling to see potentially vulnerable people like maybe your elderly parents, your grandparents in this case, I would reconsider right now because we are sort of on the cusp. We're sort of in this... I don't want to call it a honeymoon period because we are seeing people getting sick and, of course, people dying in the States. But we're in this window where the projections are that in the next couple of weeks we are going to see many, many more numbers, you know, rapid doubling. So, we're not there yet. So, on the one hand, perhaps this is a good time to travel. On the other hand, we don't want to be one of those vectors for increasing the spread. So, if you do decide to travel, there are things that you can do to minimize your exposures.

Now, with masks, you know, the surgical masks that you see that have all the gaps on the side, those are not gonna do anything to prevent you from getting coronavirus infections. Those, however, will prevent others from getting infections from you if you are sneezing or coughing. So, you know, if you do or your child does have any upper respiratory symptoms, I would not fly because you are then exposing all the other people on the plane. But if you are healthy and you do choose to fly which I do know many families who are, wearing what's called an N95 mask that filters out, you know, at least 95% of the particulate matter may be effective. My husband, actually, he's going to Las Vegas for a hockey tournament. He's leaving today. We had a discussion, decided, you know, he would go but, you know, he will likely be wearing a mask on the plane just to prevent himself from getting any unwanted exposures. The mask does have to be really well fitted. There cannot be gaps. And unfortunately, there are no N95 masks that are gonna fit a child's face well enough to protect against coronavirus or even influenza virus infection. So, if you're traveling with kids, that's really probably not going to be an effective option. The other concern too just from a public health standpoint is we really do need to... I mean, there's been a run on masks. You're not gonna be able to find N95 masks if you don't have them already. I happen to have them because of the fires here, the tragic fires in California. So, we've had them, you know, for the past couple of years, actually, the past three years when we've had these, you know, horrible forest fires in Northern California and the air quality has been so, you know, devastatingly horrible. But, you know, we do wanna be mindful of the fact that, you know, we are at risk for running out of protective gear and supplies for, you know, really the medical professionals, the doctors and the nurses who are in the ERs and the ICUs who will be caring for sick patients.

So, what would I do if I did choose to fly? Just make sure, remember the surfaces, right? All the surfaces that your kids could touch. I do wipe them down now. I used to think, "Oh, I'm not gonna wipe down. That's okay. I'm not gonna be worried about that." But you know the screen in front of you, the handle, your armrest, the seat button that reclines the chair, the window shade, the seat belt buckle. I wipe down all of that. And again, in this case, right now, I would use hand wipes that have at least 60% alcohol in them. When you're wiping down surfaces like that you could use a bleach wipe as well. And then, of course, when you're flying, just make sure that you've gotten enough sleep the night before, that you are not up packing at all hours of the night because sleep deprivation does suppress our immune system's ability to fight off infections. Make sure that you're not, you know, snacking at the airport on, you know, muffins or chocolate or, you know, candy or a lot of the things that we often... I know your audience doesn't, but that many parents do "treat" their kids with because they're being so good on a plane. Staying hydrated, all those good things to really keep our immune system strong. As of now, I'm not necessarily recommending that people don't travel, but that will likely

change in the coming week. So, I think we just have to pay attention to what's going on and be as safe as possible. My sister was on the fence about flying. She was supposed to fly in two days as we speak and did decide last night not to go not because of her concern with her children getting sick, because, as I mentioned, children are relatively spared, they seem to have mild to no symptoms, but really out of concern for possibly bringing anything to my parents who are elderly and my mom especially who has an increased risk because of her recent chemotherapy and surgery.

Katie: It makes sense. And I love that you are bringing such a calm and level-headed perspective to this and giving people practical tips that they can do to keep their families safe but also to reduce the fear and calm the panic which I think is even potentially more of a pandemic at this time than the actual virus itself. I know you've also written some great articles on remedies if you or your child do get sick and just things you can do, again, to support the body through that. And you also have a course. I will make sure that I link to both of those in the show notes at wellnessmama.fm. And of course, they are also on your blog at healthykidshappykids.com. And I also know that you are an active practicing doctor who needs to see patients in eight minutes. I wanna respect your time. But any just parting advice or words of wisdom to parents who are just worried about navigating this with their families?

Dr. Song: Absolutely. Like you said, stress may be more of a pandemic than anything else. And I just want to emphasize that stress, how we're feeling, our own anxieties, which then can fuel our children's anxieties, that may actually be one of the most inflammatory things, the most immunosuppressing factors that we are encountering. Now, I want to really help parents to be, you know, what I've told my patients, just let's be rationally prepared, let's be rationally cautious, but not panicked. We really want to try to focus every day on self-care for ourselves so that we can then be present and calm and help our kids navigate this time. I just yesterday recorded an interview with one of my favorite child psychologists. I would say favorite child psychologist except my sister is one, so I can't say favorite. But Dawn Huebner, H-U-E-B-N-E-R. She is incredible. She is a child psychologist that teaches kids cognitive-behavioral techniques through her self-help books just for kids or the what to do series, "What To Do When You Worry Too Much," "What To Do When Your Temper Flares," "What To Do When Your Brain Gets Stuck." She's got a whole series, but her latest book, you know, "Something Bad Happened." That's the title of it, "Something Bad Happened." That came out last fall. And she wasn't writing it specifically for coronavirus, obviously, because we didn't know about coronavirus then. But it's really how to help our kids navigate really bad news, tragic events. And we are already seeing tragic events in the news. I'm hoping that people don't have their radio on just all the time or the TV on or casually flipping through their news feeds while their children are watching over their shoulders because it's too much for brains even, you know, middle school and high school brains to really, you know, comprehend fully without our help. So, we recorded an interview on how to talk with kids about coronavirus that I'll be posting up, you know, very, very soon. And by the time you post the podcast, I will get that link to you because I want parents to know that they do have tools to help themselves keep calm and help their kids keep calm and I think that's gonna be one of the most powerful ways that we as families and as communities can get through the coronavirus pandemic together.

Katie: I love it. And I will make sure that all of those links are in the show notes. You guys check it out. It will be the podcast at wellnessmama.fm is where you can find it. And I will also, Dr. Song, link to your social media, especially your Instagram, you've been posting some resources there and some update so people can follow

along with you. And we'll ride this thing out together like you said and I think parents are the frontline of defense. And I'm so grateful that you are sharing all this practical, common-sense information without the fear and I think that's gonna really help a lot of families. So, thank you so much.

Dr. Song: Thanks for doing this, Katie. It's so important to get the word out. And you can do that, you know, so well. And really I appreciate your time today.

So grateful to Dr. Song for sharing all of that information and for very balanced approach on this. I wanted to follow up with a few things into some practical measures that I'm personally taking based on a lot of questions I've gotten from you guys. And to start, I also just really want to reiterate what Dr. Song said in the interview, which is that while it makes absolute sense to take a rational preparedness approach to this. We also do need to stay calm and maintain some sort of balance as well.

I know that things like this can seem extremely scary, but especially as parents, we have the ability to help maintain the calm and to pass on a calm attitude to our children and also to take the proper preventative steps without overreacting or being overly afraid. And I'm not at all trying to diminish the potential of what this can be or to minimize the fact that people have died from this and people will continue to die from this. But I just want to reiterate like we talked about with Dr. Song that fear and stress do not help the immune system and nothing is to be gained from that. And so to whatever degree possible, I think, like she said, just once again, to reiterate, we need to be rationally prepared to be ready for what may and looks likely will happen at this point, but at the same time to maintain calm and composure and community and support each other in local areas in whatever ways that we can.

So that's my first step to this. My own personal approach right now is stay calm, take a deep breath, don't stress out. That said, to reiterate a lot of the stuff she said, I'm just going through my personal checklist of things that I am implementing in my home with my kids. Extra stuff I'm taking right now just to, as we talked about, boost the immune system, increase the body's own defenses. Like she reiterated again and again, there is no right now known cure for this, not in conventional medicine, not in alternative medicine, but there are some things that may be helpful in just supporting the body in either hopefully avoiding getting sick or in shortening the duration if we do get sick.

All of the experts agree that hand-washing is extremely important and she talks about...she you talked about this when I spoke with her a few minutes ago and you will see this advice in any official document in CDC papers, everything coming out. Experts agree that hand-washing the right way is one of the best steps that we can take to stop the spread of this or at least to lengthen the curve, which will give our health care system the best shot at handling the potential up flux of people who are going to need to visit the hospital.

So I will put links in the show notes to everything I talk about in this part of the podcast. But I have stocked up on big staples like liquid Castile soap, which I use to make big batches of homemade foaming hand soap and which can also be used on its own as a hand soap. And I've been adding in a few drops of different types of

antibacterial essential oils and antiviral essential oils into the hand soap. So current for me is germ destroyer or germ fighter from Plant Therapy. I'll put those links in a discount code in the show notes if they are still even available and not sold out online.

And to echo her advice, this requires proper hand-washing. She quoted the statistics of how big of a difference this can make if we were all washing our hands the right way. But that is important to. It needs to be at least 30 seconds, ideally up to a minute with warm water and soap and that needs to happen, especially anytime we visited public places or touched surfaces where the virus can live. I'm also normally not a huge fan of hand sanitizer, but it's something I am making and keeping on hand right now. If you have been to any stores, you know that it's pretty much sold out online and in essentially all stores. So I have been making big batches of my homemade hand sanitizer recipe to use whenever we're out of the house or if we've been in public areas where we can't wash hands as easily or there's more potential for the virus to spread.

There's multiple recipes in that post. So a word of advice. She explained that for, to meet CDC standards, hand sanitizer needs to be at least 60% alcohol. And if you know what percentage your alcohol is, this is a simple math equation. Most rubbing alcohol is 70% or above and some of them are as high as 99%. So you need to make sure whatever alcohol that you use, not just the percentage of that alcohol mixture, but the percentage of actual alcohol is above 60% if you're trying to meet the CDC standards. And then I dilute that with either aloe vera, which is also largely sold out online or glycerin. And then add essential oils just for an extra layer of defense there and also for scent.

Something else I always do this time of year and I'm just also making sure we do right now is nasal irrigation, especially if we are traveling or have been in public places. This is something, like I said, it's not specific to coronavirus or Covid-19. This is something that I do during cold and flu season anyway because there are lots of things going around besides just these. But I use several different types. There's one from Genexa, a Genex saline, both an adult version and then infant and children's versions as well. And then I also had used other different methods of nasal irrigation at home, similar to a neti pot, but with premixed saline and all of those will be linked in the show as well.

In our home because even though there are viruses going around, my house is still the place where all the neighborhood kids hang out. And I always wanted it to be that. I'm not discouraged that even with all of these things going around, but I am taking a few extra precautionary steps. So I have pretty much been diffusing different essential oils on repeat 24/7. Right now I'm using Germ Destroyer KidSafe Essential Oil and Germ Fighter from Plant Therapy, also Immune Aid and Defender. And I have their oils like respirate and immune boom on hand in case any of us do get sick, but I am just a fusing those pretty much all the time in our home.

I'm also running air filters, which I normally have in the home as well. But I've ordered a few more. So I have AirDoctor Air Filters, which you guys might have heard of for me before and also Air Oasis and they have discounts for both of those, which will be in the show notes at wellnessmama.fm. There's some evidence that certain types of air filters can filter particulate sizes small enough to get viruses in the air. So since there isn't an airborne nature to this, it's just a cautionary step that I am.

And then personally and with my kids, there's a few additional supplements that I've added into our routine or increased our dosage on. I just stocked up on Genexa remedies. So again, there's no treatment or cure for this that we know of, but there are things that might help shorten the duration or at least improved symptoms if anybody does get sick. So you can find links in the show notes to all the Genexa remedies, but they have saline ones that I already mentioned and they also have Cold Crush and Flu Fix, both designed to help with comfort and duration during those types of events.

So those were the show notes as well as Dr. Song mentioned. Two other big ones that seem to come into play with any type of respiratory illness are vitamin D and vitamin C. And I've linked to my post on both of these in the show notes. I do think it's important to test for vitamin D levels, especially this time of year when we aren't in the sun as much.

And so that's something I do for our whole family and that we supplement with regularly. We use drops of vitamin D, high dose vitamin D in the mouth, in the doses based on body weight and testing to keep those in range as well. And I'll put some of my other tips and suggestions in the show notes as well. But I just wanted to give a look at what I'm personally doing and what I'm not doing. We're not wearing face mask. We're not a right now quarantining or staying inside. We are limiting any unnecessary travel or big gatherings of a lot of people.

But just to reiterate what she said, I am not afraid at all from an illness perspective for our family because none of us are in high risk populations. But that said, anytime we are dealing with a relatively rapidly spreading now pandemic, I do think it's important for us all to just be aware and rationally prepared again to use that word so that we aren't passing this on without even being symptomatic and we aren't putting people that we love at risk. But that needs to be balanced with keeping calm and not letting the fear and the overwhelm take over. And using this as an opportunity to spend more time together in community and small groups and family and to talk to our kids about important things we would want to teach them anyway. Like what happens in types of events like this, like preventative measures that we can take, like what our immune system is and how it works and how we can support our body and how the body works as an organism, as a whole and not just an individual parts.

And so I think there's a lot of, many, like very many valuable lessons in this. I have no doubt that communities like this one, the amazing Wellness Mama community will only come together more and strengthen in times like this. And I'm just so grateful to all of you for being the leaders, this in your own families, communities and homes, and for caring, for listening, and for sharing. So thank you again for your time today. I hope that this was helpful to you and your family. I hope that you stay healthy and happy. And I hope that you will join me again on the next episode of the "Wellness Mama" podcast.

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