

**Ask The Doctor: COVID-19 Webinar with Namvar Zohoori, M.D., M.P.H., Ph.D**

**Disclaimer:** \*the webinar is for general informational purposes only and does not constitute the practice of medicine or other professional healthcare services including the giving of medical advice and no doctor patient relationship is formed. The use of information on this webinar materials link from this webinar is that the user's own risk. Of course, the content of the webinar is not intended to be a substitute for professional medical advice, diagnosis or treatment. Users should not, should not disregard a delay obtaining medical advice for any medical condition. They may have and should seek the assistance of their healthcare professionals for any such conditions

**EC (00:00:00):**

**Since epidemiology is something we deal with a lot as attorneys, particularly in pharmaceutical litigation, what is epidemiology and why is it relevant or important today with what's going on with COVID-19?**

**NZ (00:04:19):**

Well, I guess you can define epidemiology as a study of the patterns of disease as well as their determinants within populations and then are trying to determine what the factors are that can prevent that disease from happening in, in, at the population level. It's, you know, as physicians we look at individuals and try to find out what's wrong with the individual epidemiologists in the broader field of public health, look at populations and we can see what are the patterns of disease in those communities and what's causing them and how can we mitigate or prevent the disease. So that, that's kind of the definition in a nutshell.

**EC (00:06:17):**

**I think everyone now has their own impression of what COVID 19 is, but if you could just tell us a little bit more in medical terms, what's really going on with COVID 19 and how it develops in the body in particular?**

**NZ (00:06:46):**

Well, COVID19 again, as we said, most people probably have heard some things about -- it is a viral infection that primarily affects the respiratory tract. It tends to lodge itself initially in the nasal passages and gradually make its way down to the pharynx, the back of the throat, and then continues to develop in an individual. Those viruses make their way into the lungs where they cause inflammation and a viral pneumonia. And that's where, that's what we're trying to avoid as much as possible patients getting to that level.

People talk about it being similar to the flu, but it really is not. In some ways it is, it is a Coronavirus. So, there are some coronaviruses that cause a common cold. But there are certain things that are really different between these two things.

Whereas with the common cold, we've been dealing with it for decades. We know a lot about it. We know what this pattern is, like, we know when it comes, when it goes, we know how to talk to develop vaccines against it. That's why we get the flu shot every year to try and prevent that. But with the coronavirus, it's new. Most of us don't have any immunity to it. We don't know really much about it. We don't know what kind of pattern it is going to have over time. We don't have a vaccine for it.

And it tends to have higher mortality rates than the flu or the common cold. So that's why we're concerned. It's a really a concerning disease partly because we don't know that much about it.

**EC (00:08:36):**

**So, there's a lot of unknowns about it obviously. You just touched on it. I just wanted to go over in terms of right now, we've heard different things in the news, and I know that the science is still evolving. Information is evolving, but in terms of how rapidly it spreads can you comment on that for us?**

**NZ (00:08:54):**

It's very infectious. It transmits from person to person very easily. I mean, as most of your audience right now know, this started out in China. It was, we think, it initially came from an animal population and made the jump into the human population. Most times when that happens, it dies. It, it can't survive and propagate itself. This one obviously has found a way to survive in the body, make the body sick, and at the same time it's very easily transmissible from one human to another. So, it's quite infectious.

There are several estimates on how infectious it is. And most people agree that for every one person who gets infected with COVID, they can infect another 1 ½- 2 people. So, you know, if there are 100 people that are diagnosed, those 100 people have probably infected another 150 people during the course of their disease. So, so it is quite infectious and transmits relatively easily from person to person through various modalities.

**EC (00:10:04):**

**One of the things we've been hearing is that first we heard, you know, keep a six-foot distance. Now we're in a stay at home period, obviously. Can you talk to us about aerosoling? And, and what's going on, what we know or what could be happening with it and why that's important, just from a medical background?**

**NZ (00:10:20):**

Most viral respiratory viral infections are transmitted through either personal contact or close contact with individuals who have them. So, you know, for most of us as we talk, just talking, singing, coughing, sneezing -- all these activities produce droplets from our respiratory tract. And those droplets for the most part are heavy enough that they land on surfaces. Or if we have coughed and didn't cover, didn't use our hands or sneeze, then use our hands, then our hands have the virus on them. And as we touch anything -- a doorknob, a utensil, a plate we are putting the virus on those surfaces as well. It becomes easy for it to transmit in that way from person to person. That's one of the problems with this is that it's very transmissible from one person to another.

**EC (00:11:21):**

**In Arkansas and other places around the country, what are some of the best practices right now in order to keep our families safe and ourselves safe from the disease transmission?**

**NZ (00:11:31):**

The main message that public health practitioners and physicians have been giving to everybody is three or four very simple practices. One social distancing -- try to stay away from, from other individuals, especially the ones who may have been exposed or have symptoms, stay away from them.

Generally being very scrupulous about personal hygiene, washing hands frequently during the day for at least 20 seconds with soap and water not touching your face.

And even when you've just washed your hands, don't touch your face.

**EC (00:12:13):**

**I know I'm going to violate that rule today. I just, I know it, right? I mean, we all do it so often. We don't even realize we're doing it, right?**

**NZ (00:12:19):**

We do it. It's very hard. It's a very hard habit to break, but we all do it. But there are very good reasons for not doing it. And so those, those are the main messages that we're giving out. And for those who are sick, definitely stay at home. But now at this stage of the disease where we're having community spread, the message is for everybody. If you don't have to go out, don't go out. Stay at home as much as possible. And some states have mandatory stay at home laws right now. So, it depends on where you live, but it's just generally a good practice to do that. Just stay home.

**EC (00:12:59):**

**People talk about the curve and flattening the curve and how staying at home is flattening the curve. If you could touch on that for us. And then secondly, importantly -- face masks. You know, we first heard from the CDC face masks are useless, they're not of much use, but now we're hearing from the CDC that if we're out in public, we should be wearing face masks. So, if you could comment secondly, just on this face masks, why it's important and what we're actually doing by wearing the face mask when we are out in public?**

**NZ (00:13:43):**

I think if you look at the patterns of the disease in different parts of the world, it gives you an idea of what this means. In China, a very populous country, you know, very dense populations. New York, very dense populations. When you have an infection like this coming into the community it can spread very quickly and infect a lot of people very rapidly so that your number of cases really start to go up very fast.

And that can overwhelm the healthcare establishment, especially in a disease like this where a lot of people do end up in the hospital or having needed more advanced care in the hospital. And that, that steep rise is what causes the problem with the healthcare system of us being able to take care of those patients.

**NZ (00:14:35):**

What we want to do is to try, at this stage of the game- I think we've lost the battle of trying to prevent the disease. The disease here is a pandemic. It's everywhere. What we need to do now is to try and flatten that curve so that the number new cases are fewer per day, fewer over time, so that we're not overwhelming our healthcare system. But it may mean that the disease may go on for a bit longer and when fewer people are getting sick during that time period on any given day, than the healthcare system is able to take care of those patients who get sick. And then as those improve and recover and move out, the new cases can be taken care of. There's not that big rush of patients into the healthcare system that's overwhelming.

**EC (00:15:37):**

**Okay. So that staying at home is helping flatten that curve obviously. So then that next step of you're out in public and let's say you have a job, for example, where you're in the service industry or different places and you're out in public, they're encouraging the wearing of masks now. So, what is that doing? Is it protecting you, protecting others? Explain that to us if you would.**

**NZ (00:15:53):**

So, there are two types of masks and there are two reasons for wearing the mask and depending on the setting, one of those reasons is why they're being used. The one that you hear a lot about, the N-95 mask, that's one that healthcare providers use a lot. That kind of mask is designed to keep disease out and not infect the person who's wearing it. So, when healthcare providers are dealing with patients who already have this disease or are suspected of having this disease and they're taking swabs and they're doing tests and taking care of these patients, they need to protect themselves. So, what you hear about PPE (personal protection equipment) of which the N-95 is a part of, that's all designed to keep that healthcare worker safe from getting the virus.

The other kinds of masks, which is a more general types of mask that you see a surgical masks and now homemade masks. Those are designed to protect the environment from the individual who's wearing it. None of us know whether we're infected or not. We can be infected and not know it because we're asymptomatic. So, if we do end up having to go outside, it is very wise to try and protect the environment and the people we come into contact with from getting the droplets that we can produce. So those masks that we are now encouraged to put on, those are designed to contain the germs if there are any behind the mask so that they don't get into the environment. That's also an important mechanism now to try and reduce the transmission of this infection in the community.

**RL (00:18:13):**

**So, doctor, that covers asymptomatic patients, but what are some of the signs and symptoms of someone who has COVID-19?**

**NZ (00:18:23):**

The studies that have looked at the pattern of it are that there are three or four symptoms that are the most common. The most common symptom is fever. And that, you can see, in upwards of, 97%-98% of patients, the estimates vary depending on what you look at, but there are anywhere from 85%- 98% of patients have fever. The next most common one is having a dry cough and that can happen in up to about 80% or so of patients. And then after that, the most common is having fatigue and just general muscle aches and feeling ill basically. And that can happen in about half of the patients.

Those three are the most common. There are other symptoms that a variable number of patients experience like headache, sore throat, abdominal pain, diarrhea, things like that. But those are less common. The most common symptoms are just fever, a dry cough and muscle ache and fatigue.

**RL (00:19:26):**

**So, what would you recommend if someone is experiencing those symptoms?**

**NZ (00:19:31):**

Most of all stay at home so, self-isolate and try to keep yourself away from other people until it's clear what that is. Call your healthcare provider. Don't go to the office -- call the healthcare provider and let them know what your symptoms are. The healthcare provider will then probably ask you some questions to try and determine how likely it is that you are infected with COVID-19 and based on their assessment, your physician may decide to send you for testing or recommend that you self-isolate at home and watch your symptoms.

One thing to keep in mind as you're watching your symptoms, is if they start getting worse. The three symptoms that I told you about -- those are the initial symptoms in people who are not too far. Those who don't recover from it, can progress to become more of a risk or injury, a problem so that people will have difficulty breathing chest pain. They may have start having weakness generally, but also having feeling like they're drowsy. If you get to the point where you've seen blue lips and blue fingertips, then that's the time to call 9-1-1, let the emergency room know that you're heading that way and get to the healthcare provider as fast as you can. But even with ERs, we really don't want people to just show up. They need to let the hospital know that they are potentially infected.

**RL (00:21:16):**

**So, in terms of the isolation period, what's the incubation period for this virus?**

**NZ (00:21:22):**

It varies from about two days to 14 days, which is why when somebody is potentially exposed, we require that they self-isolate. Now I think there's a requirement that they stay at home basically in self-quarantine for 14 days because if symptoms are going to develop, if you really have that disease and they're going to develop, they will develop within 14 days. If you're within that 14 days and no symptoms develop, then it's reasonable to assume that either you are not exposed or if you were exposed, you were one of the majority of people who don't experience any symptoms from it.

**RL (00:22:05):**

**I know a number of States have a lockdown, so a number of people are getting food delivered at home and a number of packages delivered at home. So, this is a common question that has come up in terms of how long can the virus live on items like clothing, shopping bags and cardboard boxes?**

**NZ (00:22:22):**

That's a good question. I love that people are concerned about that. There are limited number of studies, but the studies that we've looked at have shown a variable number of hours or days, depending on what kind of material we're talking about. The virus can live anywhere from a few hours to a few days on surfaces. Things like cardboard - maybe about 24 hours or so. Stainless steel, they can last a bit longer, about 48 hours. Plastics can be about 72 hours.

Some studies are actually showing that in the air, the virus can be detected for up to about three hours if there are very fine aerosol particles that have been ejected through the mouth and nose. There was a study out of China where they use specialized cameras and specialized lights and were showing not only the droplet particles, we talked about earlier that fall onto the surface, that's just the act of even talking with somebody. Definitely sneezing and coughing, but even talking, can produce some of the very fine macro particles that can stay suspended in the air for two to three hours.

**RL (00:23:47):**

**Are there any recommendations or precautions people should take as they're getting packages from the outside into their homes?**

**NZ (00:23:55):**

One thing to bear in mind is that the chances of getting it, we don't know for sure. There are no studies that have looked at this and we don't know for sure of any cases that have happened as a result of handling a package. Not to say that it can't happen, it's a possibility, but the consensus is that the probability of that happening is fairly low.

However, if people are concerned, and some people may have good reason to be concerned because of health and their own health concerns and underlying conditions, that they want to be extra careful -- it might be a good idea to do one of a couple of things:

If packages are being delivered, as long as they're not perishable, just leave them outside. They can stay in a garage or outside the door, in the backyard or wherever and just leave them for about a day or so. That will probably kill the virus for the most part.

If they are perishable and you need to bring them into the home. And this is something that, that, that my wife and I have done we, we basically get some sanitizing wipes and wipe the packaging before bringing them into the house. And that's probably a good practice if somebody is concerned about being exposed.

**RL (00:25:11):**

**There was a recent report about a tiger at the Bronx zoo being diagnosed with COVID-19. So, can pets or animals can track the virus? Can you go further into that?**

**NZ (00:25:24):**

There have been some reported cases of animals getting sick after being exposed to humans who've had a Coronavirus. This is not in the U.S. - there's no evidence of that transmission in the U S right now. There's also no evidence of transmission from animals to humans.

However, it seems, you know, this is a zoo-ontic disease, meaning it originated in animals as best as we know. So, it's quite likely that animals do get it. And we know that some animals such as cats are capable of carrying the virus. However, as I said, there is no evidence that has been transmitted from animals to humans from pets particularly.

It's probably prudent for somebody who has COVID-19 to try and restrict contact with pets anyway. Because the pets move around the house, letting the pets you know, sniff you or lick the face or hands and petting that animal can potentially provide a way for the virus to move around the house. So, it's probably best for somebody with COVID-19 to try and stay as far away from pets as possible and also keep pets from away from other people. If you're going for a walk and you're taking your pets, keep the pets six feet away from other people as well. I think the same social distancing rules applies to animals here too.

**EC (00:26:57):**

**What is hopeful out there right now? We've been talking about all the problems, how things progress, but what's the positive news potentially right now what we're seeing? Are there other positive things we can look to that are developing right now to maybe combat the virus as well as protect people?**

**NZ (00:27:47):**

Well, we are starting to see in some areas in the world that even though there was an explosive increase, some places have been able to manage it. So, it's a manageable disease. We are able to control it if we put in certain measures and deal with it -- that has happened in South Korea, and that has happened in Singapore. So, it's not a forever disease. It's going to improve as time goes back.

**EC (00:28:25):**

**Like social distancing and staying at home, it is finding the curve in those other places in the world who've been farther ahead of us in terms of the timeline?**

**NZ (00:28:33):**

Right, they were ahead of us in terms of the timeline and some of those countries put very strict measures in right from the beginning. Many people attribute their success in controlling the spread of the virus to the measures that they took right from the beginning. That is what is starting to make a difference here in the U.S. in some places.

In Arkansas where I am, for example, that spread has been a lot slower. And the social distancing measures that have been put in place with closing of the schools closing and of the nonessential services, asking employees to work from home if they can.

I'm not closing restaurants except for takeout and delivery. Those measures do seem to be working in some areas. And that a very hopeful saying.

At the same time, there are groups that are working on vaccinations. There are some promising vaccines that have already been developed and are moving into the clinical trial phase. This is going to take some time. We all know that, and we've heard about this a lot that it will take probably about a year-year and a half before those vaccines are ready for human use. But the initial testing in animals has been very promising. So, it's very likely that we will have a vaccine sometime in the future, if not immediately.

**EC (00:30:19):**

**What about in terms of the weather - it's something that we see with seasonal flu or cold, for example, that the weather can certainly suppress the virus. Do we know anything about that with the coronavirus?**

**NZ (00:30:31):**

Actually, we don't we don't know for sure exactly what's going to happen with COVID. Part of their hope is that with the summer coming, maybe the numbers will go down. Unfortunately, though, this is a pandemic. It's in every country in the world -- Northern hemisphere and Southern hemisphere. While we were in our winter, the Southern hemisphere was in their summer and the virus has spread pretty much to almost every country in the world - I think it's 87 countries the last time I looked. So, it's not clear exactly what will happen with this virus, but the hope is that if it is anything like other Coronaviruses, most grown viruses that cause a common cold are not transmitted as effectively during the summer. Higher temperatures and more humid environments are not good for survival.

**EC (00:31:30):**

**I think there's now some studies out of Germany and different places looking at the issue of if once someone has been infected, do they have immunity? What do we know about how long that would last and how that can be helpful to develop antibodies to help treat or maybe provide a first line defense with doctors who could get an antibody shot every couple of weeks?**

**NZ (00:31:58):**

There are a number of studies right now being put in place to try and look at what the pattern of antibody production is. The CDC has just started a study to look at population levels of antibodies in the general population. They're doing it in phases. I think they're going to start initially with hotspots areas that have had the very high prevalence and include the non-sick population as well to just try and get an idea of how widespread the disease is in people who were not clinically ill.

Then they're going to gradually spread that to other parts of the country to get a good sense of what the spread of this disease is. And the reason they can do that is by looking at antibodies in the blood. As we get sick our bodies start developing antibodies to that disease.

That's why we get vaccines. When we give vaccines, we are fooling our body into believing there's an infection and it develops those antibodies so that when we actually do get an infection, we can fight it off. Those antibodies are potentially possible to harvest from the blood of patients who have actually had the disease.

And it may be possible to give that blood to patients who now have it as a way of improving their chances of improvement. There are several trials actually right now going on in the country. Several universities across the country are collaborating to work on this and find out exactly how effective that is, how much antibody is being produced, and then start trying it in patients to see whether it's really effective or not. So that's another promising development in this whole scenario.

**RL (00:33:57):**

**Doctor, who is most impacted by COVID-19?**

**NZ (00:34:04):**

There are certain groups... I mean, we're all susceptible -- that I want to make that clear. First of all, everybody should consider themselves susceptible to get the disease. But there are certain groups of the population that are definitely more susceptible and also more prone to having more severe types of the disease. People who have chronic lung disease and asthma are likely to be more affected. Anybody who has any form of an immunocompromised situation, and that can include people who might be on cancer treatment transplantation. People who have immune deficiencies or are taking a long-term course of steroids are definitely at risk as well.

But then there are some diseases that don't fall into those categories, but because of what they do to the body they are also considered risk factors. Things like obesity, diabetes, chronic kidney disease, especially those who are going on undergoing dialysis, and people who may have liver disease. All of these can compromise the body's ability to fight infections and those are considered underlying conditions as well.

**RL (00:35:25):**

**Do you have any info or insight on whether Parkinson's patients are at higher risk?**

**NZ (00:35:31):**

There is no evidence that Parkinson's disease by itself makes you more vulnerable to contracting COVID-19. Those with Parkinson's disease basically have an intact immune system that's functioning fairly well. However, people with Parkinson's disease do tend to be more prone to pneumonia infections. So therefore, for that reason, they're considered as part of the high-risk group as well.

Stress can also make their symptoms worse. So it's very important for people with Parkinson's disease as well as any of the other chronic diseases we were talking about, to try and maintain as good a health as possible and to observe all of the precautions that we are telling everybody to observe. It's especially important in those populations.

**RL (00:36:36):**

**I know you said everyone is susceptible and can be impacted or contract COVID-19, but is it surprising that we're seeing symptomatic healthy teenagers and kids?**

**NZ (00:36:49):**

I think it's surprising from the perspective that when this first started, we were seeing a pattern where children and young people were being spared. And so that was our expectation for a while. But you know, this disease is evolving. Our knowledge of it is evolving literally on an hourly basis. You know, guidelines that we write in our health departments yesterday, we ended up having to revise in a day or so. So, it's not surprising to see things change. And what has happened is that there've been a few studies that have looked at the prevalence of the disease in children. In fact, there's one that came out just yesterday from the CDC, they put out some data that showed that children do get it. There is disease in children of all ages but it's in a smaller percentage so that children only constitute about maybe less than 2% of all the cases.

And they also tend to have milder disease when they do get sick and their symptoms tend to be similar to adults, the same type of symptomatology. However, what's important to remember is young people don't succumb to the virus infection. They don't show symptoms of the disease, but they can still be carriers. And there's studies that have shown that significant percentage of non-symptomatic patients, adults and children, can carry the virus and actually spread the virus even though they're not symptomatic. So, all the more reason for that social distancing that we're talking about to be observed, especially by young people as well.

**RL (00:38:39):**

**In terms of treatments, how effective is hydroxychloroquine and treating COVID-19 based on studies and data you've seen?**

**NZ (00:38:56):**

So, hydroxychloroquine and chloroquine, both of them are drugs that we've had for a long time and they're very useful in certain diseases such as lupus, malaria, and rheumatoid arthritis. There is some evidence from some initial trials that were done that it may be helpful in protecting people who get the disease coronavirus from developing further or having a bad outcome. However, that evidence is very scant. And the other thing to remember is that these drugs have very serious side effects that that can affect the heart. It can affect vision among other things.

They've been studied for a long time. We know the dose that that is required for those particular conditions. With COVID-19, we don't know. We haven't had experience enough to know. And we also don't know what the side effect patterns will be in these COVID-19 patients for that reason. The FDA has approved the use of chloroquine and hydroxychloroquine in very specific situations for patients who are very seriously ill and only in a hospital setting so that they can be monitored very carefully under the supervision of a physician in terms of their toxicity and side effects that they may have. And it's in those situations that the FDA has allowed the emergency use of these drugs, not something to be used by everybody. It is not something to be used prophylactically. We have no data to support those kinds of views. And it can be very serious and fatal.

**RL (00:41:03):**

**There's been a lot of focus on ventilators. Can you explain why? And also discuss whether people are actually coming off the ventilators once they're put on?**

**NZ (00:41:15):**

When you get COVID-19 disease, the worst-case scenario is that it gets into your lungs and causes severe difficulty in breathing. To the extent that people can't walk across the room, they can't get enough oxygen to maintain their bodily functions. When the patient gets to that stage, it's really important to try and get oxygen into the lungs as fast as possible. And that's where a ventilator comes in.

Ventilators are a tube that's put inside your trachea and air is forced in there in a very careful way through a machine. This ventilator machine - air and oxygen mixture - is forced into the lungs and also keeps a certain pressure in the lungs that allows those air sacs in the lungs to stay open so that the, the air and the oxygen can go in.

That's why they're very important in that subset of patients. But you know, you have to have a really advanced stage of the disease for that to be indicated. And that's why they're there. It's important to have on hand for patients who get to that stage to be able to get the benefit from that.

In terms of our success with them, the range is fairly big depending on where the study's coming from. And what I've seen is anywhere from about 15% to 50% of patients who are put on a ventilator recover and are successfully being weaned off the ventilator. So, it can be as much as half of the patients. But you have to remember the patients who are put on ventilators are the sickest of all of our patient population. And a lot of them have underlying conditions that probably contribute eventually to their death.

**EC (00:43:15):**

**In New York we have this large population. We see Governor Cuomo obviously speaking to the public, talking about ventilators and the need because there's so many people that are facing these issues. But obviously in Arkansas and other places, there's other challenges. Access to healthcare, for example, things that I know you deal with on a regular basis. So, can you touch on that for us? I don't think that's received as much attention, but is certainly a real issue for Arkansas, for example.**

**NZ (00:44:20):**

A state like Arkansas where the population is really sparse and spread out in rural counties have in some ways been protected because the population density isn't as big. The social distancing is a little easier in some cases as compared to a place like New York.

But on the other side of the coin, the resources are also more limited in a situation like that. So, part of the challenge is both on the part of the individuals living there and also on the part of people like us and public health agencies/government agencies who have to provide the care, and access for them. Part of the challenge is for us to know as fast as possible where cases are when they develop and to have the resources lined up in terms of medical care for them to be directed to those resources.

I think a lot of States are doing that, including us in, we have a dashboard that has all of the information about what hospitals are available, how many beds they have, who has a ventilator, how many ventilators are being used. All of that is known to the state health department, as I'm imagining is the case in most States.

So that's one of the public health perspectives. But for people who live in those areas, I think part of the challenge is going to be for them. If they're supposed to stay at home, how do they get their groceries and supplies and medications at the rate that they need them. And I know that is a challenge, but there are ways to try and deal with that. One way is to try and ask family and friends who are younger, healthier, maybe who are going out to stores.

In rural areas, going to the store isn't an everyday thing. Sometimes it's a once a week or so long drive to get your groceries or your pharmacy. So, to ask family and friends to do that, and many stores have now started doing deliveries. Walmart, grocery stores, and pharmacies will actually make deliveries if you place an order online or over the phone. So, I think people need to take advantage of those types of things as much as possible.

And then in terms of the public assistance, there there've been a number of concessions that have been made by both local, state and federal governments to try and provide aid to families. And especially those who lose their employment as a result of all of these things - that would go through their increased compensation for that. So, I would encourage everybody to take advantage of those kinds of available resources and a good place to find out where those are is the state health department or the governor's office. Governor's offices have websites, and a lot of them list all of the resources and the benefits that people are entitled to and qualify for.

**EC (00:47:48):**

That's really helpful and certainly insightful, it's obviously this is going to move through different areas in different ways and impacts some differently.

The second thing I just mentioned is certainly for any of the clients who might be watching is we have a full-time social worker with our firm. Happens to be my mom. Of course. Carol Neeley.

We found some really great resources in Pittsburgh for example. We saw and did a lot of work with people who needed to be fed. And so, we now have seen different things and apps come up that are used even by police officers. You want to be on the street and be able to offer to people where to go and get food if they need to. So, in Pittsburgh, there's literally an app now, a site you can go to and you can find out these different resources that are available.

**RL (00:49:14):**

**Doctor, I want to do to address some rumors and some social media posts that have been out there, which have claimed that if you got sick sometime last fall, it likely wasn't the common cold or the flu, it was in fact COVID-19. Can you address that?**

**NZ (00:49:29):**

I've heard about those rumors as well. The first case that we know of, of COVID-19, was in China and that was back around the middle of November, I think it was November 17th. And that was the very first case that we've known of. And we've tracked the spread of this thing ever since and, have seen exactly where it's gone. It didn't get to the U.S. until sometime in January. In fact, our first confirmed case in the United States was January 22nd. And the number of cases after that stayed very low. Less than about 30 for the next few weeks. It wasn't until the first week of March that we started to see this very high increase in the numbers on a daily basis.

So, for anybody to have gotten sick back in in the fall you know, it's very unlikely that it would been COVID. I don't want to say it's impossible, but it's very, very unlikely. You know that time period is also the time when we have our flu season and a flu is very rampant. Some people with flu also do get pneumonias and some people with flu have a very prolonged experience with the flu. So, it's more than likely it was the flu than for it to have been COVID.

**EC (00:50:58):**

**I know you've had your share of health issues over time and certainly came through them resiliently. What can you share with everyone in terms of how to be resilient in these times?**

**NZ (00:52:01):**

Mental health is very important during this time. In fact, there was a study that came out about a week or so ago where they did a survey of, of the U.S. population asking about mental health in the face of COVID-19 and about 45% of the respondents said that COVID-19 has affected their mental health. And about half of those, almost 20%, said that it has significantly affected their mental health. So, this is something that's not trivial.

Unfortunately, we've been so focused on the physical disease aspect of this over the past few months that we are just now beginning to realize what the mental health toll of this is as well. So, I think it's very important for us as individuals to try and maintain as much of a positive outlook on the situation as we can. You know, if we sit down and listen to the news all day, there are theories and discussions that can go on all day.

Lots of it is theorizing. A lot of it is things that are not fact yet. And a lot of them are things we can't do anything about. And one important one is to just focus on what we can do with ourselves and our environments and our behavior and not worry about the things that we can't control and give a few quick examples of things that people should probably doing especially while they're at home during these times. Which can be stressful in itself. So being at home is stressful. Hearing a lot of news is stressful, as you said, economic fears are stressful. But our best chance is to try and maintain as healthy - And I'm talking about physically, mentally, emotionally and spiritually, healthy - self as possible. And some of those things have to do with - okay, I'm at home -but it doesn't mean I have to sit on a couch all day.

I can get out and be as physically active as possible, going out into the yard and to the garden. We're getting into that time of year where in most parts of the country, the weather's getting a lot nicer. Working out in the yard, planting things... just taking care of some weeds and things like that. That's both physically active. It's also fresh air and the sun is actually quite good. The vitamin D that we get from the sun is really good. So that's a physical aspect of it. Taking care of nutrition and making sure that we're eating healthy as much as possible, fruits and vegetables. Taking care of our vitamin and mineral needs as much as possible. Another important thing is staying connected. You know, social distancing doesn't mean social isolation.

As some people have said, there are many ways to, to connect. In fact, I know a lot of people now who are connecting a lot more with their friends and relatives over these past few weeks. My mother being one of them. You know, she's 83, she's sitting at home for more than a month now, but she is on the phone and on her WhatsApp and on her zoom almost constantly and has talked to friends that she has not talked to for four months, or even relatives from all over the world. So that's a very good way of staying connected.

Then taking care of our own personal mental status. You know, people would have different ways of doing that. Prayer, meditation, mindfulness - talking over with somebody just discussing situations with somebody. I've even read about people writing down their thoughts during this time, just that act of writing things down, how you feel about things and then walking away from it is a kind of a release and mental release that that helps to relax the mind and the individual.

There are some apps that people can use to help with meditation. There's, there's one I think you brought to my attention that's called the Calm app that that helps in that process. Another one that I have on my phone is one that's just called the main bell at random times during the day. This gong goes off just to remind me at that point to just stop, think where I am, what kind of situation am I in, what's my mental status right now? And to refocus a little bit more inwardly and think about the positive things in life.

And there are always positive things in life. There are always things to be thankful for. And one thing to remember, this will all pass for most of us, the majority of us will come out of it healthily and will not be physically affected by it in terms of a disease, or I know there are other issues to deal with, but at least from physical health and getting sick or dying, that's likely not to happen to most of us.

**RL (00:57:35):**

**That was a great advice. Thank you so much. In terms of, one of the pieces of advice you said was to go outside, and with going outdoors social distancing obviously is important, of course wearing a face mask. How would someone go about making a face mask if they don't want to take it from a healthcare worker?**

**NZ (00:57:57):**

There are a number of patterns now online that both the CDC state health departments, and the Chaffin Luhana Foundation -- has on their website. There are a lot of simple patterns online to be able to do that.

All it takes is a piece of cloth or a bandana folded enough to give it enough thickness or that air particles can get through it. And just putting that on and some of the patterns that I've seen just use simple elastic bands, putting over the ears and help keeping the bandana or the piece of cloth in place. For the purposes that we are talking about with the general public of basically preventing those droplets from spreading, they work quite well.

As long as the cloth is thick enough and the best would be some kind of cotton or a or a cotton mixture. With a piece of cloth that when you hold against a light, you can see the light through it. If you're seeing a lot of the light and it's too thin, but fairly simple to make our home and those are the kinds of masks that we should be making. But what I want to pick up quickly, I did say working outside, being outside and as much as possible, but if you remember, I said working outside in your yard. So, it is also good to go for walks. It's good to go for a walk in the neighborhood or in a park, but as long as we're able to maintain that six feet distance and as long as we're wearing the masks.

**EC (01:01:21):**

**Early on I was hearing commentary from scientists about produce. It doesn't sound like there's been any studies or anyone has shown yet that yes, from lettuce for example, or deli meat or something else that were, is being contracted but, but certainly produce the same as they always say to just make sure to wash it. That's a good practice generally speaking. So that's generally what, what you're recommending now still as well right?**

**NZ (01:01:51):**

That that is a contract recommendation. There is no reason to believe that this COVID-19 can be spread by, by food. Okay. The COVID-19 virus starts out/establishes itself in the, in the mucus membrane of the nose and the nasal passages, food that we eat ends up in our stomach where acidic environments and the environment within the body it can kill the virus and there's, you know, there is no indication that the virus can enter the body through that route.

**EC (01:02:27):**

**So, it's more of a respiratory illness as you said versus a digestive one. Got it. Do you think it is safe to go to a dentist currently?**

**NZ (01:02:39):**

Yeah, I was just talking to my wife. I have a dental appointment on Thursday. I was trying to decide whether I should go or not. My advice would be this - if it is an elective procedure that can be put off until later, I would say put it off. If it is something like you're having a tooth ache or your filling has fallen out and needs to be taken care of, then I think by all means call your dentist and explain the situation and then follow the advice that they say it may be that you may need to go. However, I think the health departments messaging to our healthcare providers, dentists and all of the various branches of health to give them guidelines about how to deal with patients within their practices. So, I would suspect most dentists also are very careful with personal hygiene, the use of washing and cleaning surfaces between patients and then obviously the washing of hands before and after you go in. I think I would say if it is necessary go, but if it can be put off, put it off.

**EC (01:04:04):**

**In terms of normalcy, what can we expect in terms of (we haven't asked you to speculate anything or give predictions cause that's not what you're doing really. I mean, you're really talking about what we know) any predictions or thoughts or reflections on what we can sense in terms of a timeline and normalcy for folks across the country, maybe in different areas in the coming weeks, months, years -- what are we looking at from your perspective in terms of the timeline?**

**NZ (01:04:58):**

So, if I had the answer to that question, I would probably be all over the news. And everybody would be knocking on my door to try and hear me say it. The simple truth is we really do not know. There are lots of models that are being developed to look at where this disease is going to go in different States. There're individual models for every state and every country. A lot depends on what is happening in the community in terms of the social distancing and the measures that are being put in place and how effective those measures are and how much people are listening to those messages and observing them. So, it's really difficult. The other thing is we still really do not know how this virus is going to behave in time. We've only had a very short experience with it.

About four months of experience with the virus is not anytime to be able to predict what that virus will do as we go forward. What I suspect will probably happen is with the measures that we're putting in place, the numbers will start to come down at different rates in different states or communities or cities. And as those numbers start to come down, we will probably start to relax some of those restrictions.

However, what we'll need to do is to keep monitoring very carefully what is happening to the spread of the disease. And if the disease starts going up again, and it's likely to do that in some areas, that some of those measures will need to be put back in place again. We probably go through the cyclic period for a while where we were playing games with our measures and the virus until we've developed a vaccine.

We know a lot more about the patterns of this disease. And we're able to put in place measures that are more permanent. And it may very well become an annual disease like the flu, where we have a vaccine that we get every year and that will take care of it for most people.