

## Cafecito Con LLS: Let's Talk About COVID (Translated from Spanish)

**Speaker:** Max Brito, MD, MPH, FACP, FIDSA

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**Javier Macias:** Hello everyone. Welcome to our discussion today about COVID-19 and how it is affecting our blood cancer patients and our community.

My name is Javier Macias and I am the Senior Manager of Patient and Community Outreach for The Leukemia & Lymphoma Society or LLS. And we'll talk today with Dr. Max Brito, a Professor of Medicine in the Division of Infectious Diseases at the University of Illinois in Chicago, Illinois. In addition, Dr. Brito is Chief of Infectious Diseases at the Jesse Brown Veterans Administration Medical Center in Chicago Illinois.

Dr. Brito, let's get to know you a little better. Tell us how you came to specialize in infectious diseases?

**Dr. Max Brito:** How I came to infectious diseases, well, I came to infectiology when I was doing my internal medicine residency. When you graduate from the University with a general medicine degree, you do a specialty, then my specialty was internal medicine. With that internal medicine specialty, one can sub-specialize in different areas. For example, one can do cardiology, the study of the heart; one can do pulmonology, which is the study of the lungs. What caught my attention was infectious diseases, which has no place in the body, as it does not affect all the organs of the body and I became passionate about it in those early years, especially for patients who have HIV.

I specialize in patients who have HIV immunosuppression. And I have developed a passion for that field. I trained in a subspecialty for 2 more years in infectious diseases and now with COVID, infectiologists, have gained a little more recognition, if you want to put it that way, because it is our area, epidemics are our areas of study, so I came to infectiology.

**Javier Macias:** Thank you very much Dr. Brito. Now because as we know particularly during the last two years, COVID-19, as you mentioned, has affected us all, but especially our cancer patients. Working to help our blood cancer patients, in particular, get the information and support they need during this time has been a challenge for everyone. At this time, in most states of this country, COVID restrictions have been lifted. Dr. Brito, what information can you provide to our community about where we are in this pandemic?

**Dr. Max Brito:** In this pandemic, right now, [May 2022], the cases are on the rise because of the subvariants of omicron (variant). We are not as we were in 2020, we are not as we were in 2021. We are facing a disease that is eminently different from how it started. Because we already have vaccines, we have a high percentage of the population that is vaccinated; we would like to have more of a percentage of people who are vaccinated as that creates a certain shield around the population. And then we see how the COVID subvariants are now, although they are quite infectious, are 30% or 40% more infectious than the previous variants. Well, we're looking at the same number of hospitalizations that we saw before.

Now after January 2022, where we had an uptick in cases. Cases decreased greatly during February, March, and April and are now gradually increasing. And we see how yet, there hasn't been a significant increase, there's an increase, but a significant increase in the amount of hospitalization and certainly mortality isn't even a shadow of what it was in 2020-2021. That is, we are now showing a small uptick with the variants of omicron, which makes it especially hard for immunocompromised patients, because some measures must be taken to try to prevent infection. That's why conversations like these are so important.

**Javier Macias:** Yes, as we see there are very different restrictions in states around the country, right? In West Coast states, the restrictions are, perhaps different from Midwestern states and also those on the East Coast. Because the restrictions are so different in the different states and the different parts of this country, can you tell us about what that means?

**Dr. Max Brito:** Because the health policy of each state is led by the Department of Health of each city, of each state. So, each state is following the guidance a little bit from the national governing body, which is the CDC (Centers for Disease Control and Prevention), or the body that gives us the information at the national level. Then each state makes recommendations based on its own experiences with its own numbers. And that's why we see that we have different restrictions and so on in everything. It's different in states, more in certain states and that's not a surprise at all due to the political leadership. Because then they have a different point of view about the restrictions, about wearing masks indoors. That also has an influence because the political leadership is what dictates the laws and the regulations that are going to be followed, that is why we see different regulations in each state.

**Javier Macias:** Very well. Dr. Brito, should patients be attentive to use safety protocols because their immune systems are compromised?

**Dr. Max Brito:** The rules for patients who are immunocompromised, or not the rules, the protocols are a little different for people who have an immune system that has no problem, that is normal. And I say this because, the restrictions around the country are practically nullified. That is, almost all the states and almost all the cities, if not all; the indoor mask mandate, the distancing mandates and so on that we saw in 2020 and in 2021, are no longer active.

Now, immunocompromised patients are then vulnerable to coronavirus infection, because, obviously, most of the people around them are not wearing masks and are not following the forecasts. Especially when they hear in the news, for example, that the variants lead to less hospitalization and less death, which is a false security because there are other complications of having COVID. There is prolonged COVID, the COVID problem of fatigue that arises after COVID, even though the patient may be suffering from a mild form of the illness. For immunocompromised people, it has another completely different significance. And that's because immunocompromised patients don't have, many of them, they don't have the necessary defenses of antibody levels or that their immune system, the T cells, the memory cell of the immune system, T cells and B cells are diminished by their underlying problems, by their blood cancers that affect those cells. Then they are vulnerable to infection.

Well, that is important for your audience, and for the audience of Spanish-speakers, to understand that now it is very necessary for immunocompromised patients to make personal decisions about their protection, because in the social environment where they are living, the restrictions have basically disappeared. So it's important to emphasize that in indoor venues, it's a good idea for immunocompromised patients to continue wearing masks.

Having the vaccines up to date means, having the original series of the vaccine, the one we administered at the beginning of 2021, which were 3 doses of the vaccine. They already are eligible to have boosters, fourth and fifth boosters after the third dose that was the original dose that was given, the original 3 doses that were given in 2021. Most, or all, immunocompromised patients should have a fourth dose 4 months after that third dose and if they are already 4 or 5 months after the fourth, they can already receive yet another dose, a fifth dose to protect themselves from the coronavirus. Why? Because we

have seen, number one, that immunocompromised patients do not respond as well. The level of antibodies in the immune response is not equal to patients who are not immunocompromised. So, we have to be more proactive in protection.

We have seen that the additional doses work, there are studies that show that the more doses, the third dose, the fourth dose, increases the protection against the coronavirus. That is, the most important point of this question is that if you have not received the additional doses, the fourth, the fifth dose, you should contact your health provider as soon as possible or go to your nearest health center or pharmacy, as the medicines are given by the pharmacy, or the health departments to receive their additional doses.

If you are indoors, if I had to advise you as your doctor and as a family member of someone who has a blood cancer, then I would tell you to wear a mask indoors especially when and where you are outside your nuclear environment and try to avoid crowds, when this happens. The important thing about the coronavirus is that, although we have two years with this pandemic, 26, 27 months with that pandemic, we cannot give up precautions for all immunocompromised patients, because it is still a problem. It will end, but it has not yet concluded.

**Javier Macias:** Well, once again to confirm, these immunocompromised patients, like you are describing, include patients with blood cancer?

**Dr. Max Brito:** Of course, of course. Patients with blood cancer are considered immunocompromised for several reasons. Number one, many patients with blood cancer are on chemotherapy, so in addition to having blood cancer, they have a chemotherapy that decreases the immune defenses, the defense of the organism. We also have blood cancer patients who are not being treated, but are being watched because they don't need treatment.

Those who have leukemia, such as chronic lymphocytic leukemia (CLL), where many patients do not need treatments, but see their doctor periodically until they have conditions for treatment have an impacted immune system, because they have a lot of lymphocytes, but those lymphocytes don't work very well. That is to say that those patients are also immunocompromised.

Transplant patients are patients who receive bone marrow transplant. Because they are patients who are also receiving drug regimens to decrease the strength of the immune system, so that their bodies do not reject the transplant, making these patients vulnerable.

That is, if you are seeing an oncologist, if you have a doctor and in addition to the oncologist who is treating you for other diseases, because there are other diseases, not only cancers, you should ask if you should take special precautions against the coronavirus.

**Javier Macias:** Well, this is very important because many of our patients do not know that they are immunocompromised, so the recommendations of the CDC (Centers for Disease Control and Prevention) can sometimes be very confusing, right? And at the Memorial Sloan Kettering Cancer Center, they consider that all patients with blood cancer are in a moderate to severe immunocompromised state.

With regard to the numbers, Dr. Brito, what are we seeing with the numbers of cases? Has it gone back up?

**Dr. Max Brito:** The numbers of cases are going up again. The percentage of positivity, for example, in the city of Chicago where I am, where I practice, the percentage of positivity is already around 5 to 6%, it was less. It was less than 4% after January and this is due to subvariant of the omicron. The new subvariants of omicron are much more contagious than the previous variants.

Fortunately, we have not seen a significant increase, there is an increase, but no significant increase in the number of hospitalizations and mortality remains low. Which is good news and that has a lot to do with, in addition to the evolution of this virus in the last two years, it has a lot to do with vaccination and that there is a high percentage of the population vaccinated.

**Javier Macias:** All right, well, let's talk about the things that patients and their caregivers can do to decrease the risk of contracting COVID. I know that when we talk about decreasing the risk, we are really talking about reducing the likelihood of contracting COVID and being admitted to hospitals, is that true?

**Dr. Max Brito:** Yes, there are several ways to decrease your risks of getting COVID. To decrease risk, number one, try to prevent contagion. We are decreasing the risk when we take measures to decrease the contagion. And there is a decrease in risk that is called secondary, that is, when the patient already is diagnosed with the COVID infection, we want to prevent hospitalization and prevent death.

There are several things we can do, well as primary prevention, that is, not to get infected with the virus, we have the measures which we have been talking about the last 26 months; distancing, wearing a mask indoors, trying to avoid crowds, all those things that the population already knows very well.

And the second thing we can do is also now, especially for immunocompromised patients, are monoclonal antibodies. That is an option that they can discuss with their doctor, with their health care providers. Monoclonal antibodies are antibodies produced in the laboratory that try to simulate the antibodies that we have in our blood, which are produced by our immune system. So with monoclonal antibodies, there is one in particular: Evusheld™, which can be administered to patients who have problems with blood cancer have a high susceptibility to having complications of the coronavirus.

Then you get those injections. They are 2 injections in a row and those injections protect you against coronavirus infection. That does not mean that you should not use the vaccine as it is still an added weapon to what we have against the coronavirus. Another thing we can do then as secondary prevention, that is, prevention of hospitalization and death if we get coronavirus, is to use the coronavirus drugs. Fortunately, we have medications right now against the coronavirus.

A drug in which you take 3 pills, twice a day, is called Paxlovid™. If you get the coronavirus, then you can use those pills for the first 5 days of infection, take it for 5 days and that prevents hospitalization and prevents death. Then, if you have a high risk of suffering from coronavirus, you can use the measures we have been talking about as a public health prevention measure. But also knowing if they are moderately or severely immunocompromised, and I am with you in that very difficult for the patient to know if they are moderately or severely immunocompromised, that is why it is so important that the patient asks their health care provider, do I qualify for these things? Be a little more proactive in your own care and see if you qualify for the injectable antibodies we talked about a moment ago that prevent coronavirus for at least 4 to 6 months. If you have already had the coronavirus, then you have to contact your doctor

as soon as possible to receive the Paxlovid pills, which are the pills that decrease the possibility of hospitalization or death after suffering from COVID.

**Javier Macias:** Well, this has been very important information because apart from the vaccines for COVID, it is very important, as you say, that people now have a little more information as part of their daily lives at this time of the pandemic. With regard to vaccines, let's talk a little bit about the myths that exist about vaccines. We've heard that the vaccines were developed too quickly to be reliable. What can you tell us about this?

**Dr. Max Brito:** Look, vaccines were developed quickly. It's no surprise that with the process to produce a vaccine before and after COVID, that we're going to see medicine differently. Before COVID, the process to develop a vaccine took 5 to 10 years. Now with COVID, it took about a year. But you can't look at it that way because the steps that were taken to test this vaccine were not violated. That is, no shortcut was taken. The same steps were made that are done or that were done for all these vaccines that are produced at 5 to 10 years.

That is, the same steps were taken. The only difference is that the whole scientific world is looking at the same problem. And when I talk about the scientific world, I don't talk about the literal world, I'm talking about the current world. When the whole world is looking at the same problem, things happen much faster. I mean, to give you an idea, we have here at the University of Illinois a vaccine center. They were one of the first in Chicago to have a vaccine center, where we studied modern vaccine.

And to recruit, usually vaccines are tested in one group of volunteers and in the other group, you're given a placebo, which is something that doesn't have the active substance that the vaccine has. It's often just saline and you're given it to see if the vaccine really works when you compare the two groups. And to give you an idea, it took us very little time to recruit volunteers because everyone wanted to help. Everyone wanted to help. The funds were given quickly. All the weaponry needed to make a vaccine was made in record time. So we shouldn't look at the speed at which the vaccine was produced, we should study in the context, in how it was produced.

We can't talk about that the vaccine being made in a year without looking at all the resources and all the attention of humanity that was on this vaccine. Things are going to happen faster. So the processes were not violated. The people who did those studies, they're not going to lend themselves to things that aren't good because in addition to hurting their reputation, they're doing something where they're injecting themselves. I was one of the first, probably one of the first 500 people who got that vaccine, so I'm not going to put something in me that I don't trust. So, the speed has to be seen in the context.

It's like when you want to fix your car. If you're going to fix your car and you took it to the mechanic and going to pay through your insurance and the insurance is slow at paying, they're going to do the repair in 3 months, 4 months, 5 months. If you go there and say, "Here, I have a bundle of bills, fix the car for me", the next day the car is fixed. I mean, that's the context in which this occurs and that can be said in many things as well. That is, how the vaccine was transported, how the drugs were made. If all the scientists are working on the same problem and all the planes that carry the charge, all the aeronautics are suspended and these can travel quickly and freely, because things happen on time.

The most important thing, Javier, the most important thing that the public must understand, is that this vaccine has been administered to billions of people. We have two years administering the vaccine, well

a year and a half, yes, almost two years administering. Well 2 years if you have the patients in the studies. They are patients who were given the vaccine and there have been 0.00001% complications.

Nobody has had two heads, no one has had fertility problems. Some complications have occurred, as they happen in all vaccines, but I assure you, go to your family and ask all the people around you who have had the vaccine, in your environment at work, your family, and ask if they have had any adverse effects, they're probably going to say no, because it was with a very safe.

Now I challenge you, to go and ask any family member of yours if you've had COVID and ask if they had fatigue after COVID, if COVID was severe, ask those who went to the hospital, those who have lost family members. Ask those people, the impact of COVID and compare the impact of COVID, the impact of the vaccine and I assure you 100% that the vaccine wins.

**Javier Macias:** What important information, because there is definitely still distrust in the community. There are many people who still think that the vaccine can alter people's DNA as well, they think that even this vaccine has a microchip. Once again to clarify, does this vaccine alter DNA, as some people may think? Please explain.

**Dr. Max Brito:** This vaccine does not alter DNA. This vaccine has a prescription, a prescription is injected into the body so that the human cell produces antibodies in the same way that it produces antibodies naturally. Instead of producing them in the face of infection with COVID, it produces it in an artificial way, which is developed in the laboratory and very safe, very safe. This vaccine has to be seen as a significant science breakthrough, which can change the course of many diseases from now on and is not a new technology.

That was not created in a year. What was created in a year was the study, but that technology has been around for years and years. Simply in the face of urgency, it was studied more quickly to see if it served to prevent COVID. But the technology was not new, as scientists had been studying this for a long time and it has the possibility of changing in the future the course of medicine, the course of diseases.

It has to be seen by people as a milestone and everything that has happened here with the coronavirus vaccine and with the coronavirus response is a scientific milestone that is going to mark the history of science. It is something that happened and was developed and we went from having a pandemic that was causing a fairly significant mortality, to having a pandemic that is more controlled thanks to this vaccine.

The vaccine has no chip, does not contain a chip, does not produce infertility. The vaccine produces the following, it has been seen to produce symptoms similar to the coronavirus, all vaccines do that. When you get a flu vaccine, it can give you a fever and you can get flu-like malaise because your body is artificially reproducing what happens when you get flu because your antibodies are working to prevent flu. So, you can get flu-like symptoms that last 1 to 2 days. There have been cases of people who have had problems with pericarditis, heart problems, especially teenagers and others as you may have heard, but very very very few cases, so that it does not alter the administration.

I repeat, ask everyone around you, ask if they have had a problem, a heart complication, they will tell you no. No one has died of that complication. They have had the complication, have had pericarditis, a heart problem, but not died of this complication. So you can't compare this to the more than 1 million deaths in the United States from COVID, because you have no comparison. We have had billions of



people injected and some have died and none of these deaths have been attributed to the vaccine. Yet a lot, there are more than a million deaths from the coronavirus. That's because of coronavirus infection. So it's important to try to understand this.

Now, people who have problems getting vaccines, that is to say that they have their reservations to receive the vaccines should be listened to and should be explained to, in an empathetic way, what we are doing here. We are not trying to say that and I am very careful with my own patients, that people who have problems with vaccines do not have a point of view that should be taken into account. Yes, it has to be taken into account and I take it into account.

Now, there are things like the chip and that it causes sterility and those things are false, are totally false. And there are other things, there are other reasons why people have problems with the vaccine that should be heard and we should educate and try to get the person to see our point of view.

The first view of vaccines is that we must accept that there are populations including, all racial minorities, Latinos like us and African Americans as well, who have problems for historical reasons. Because there have been problems historically where populations and minorities have been used to do things that were not totally ethical. So those populations, those members of our community have reservations about the medical system and they need to be listened to. And that's why I spent a lot of time explaining to my patients that these are new times and trying to provide the data that these are different times and we're not trying to experiment with anyone. But they are right to have the reservation.

So, it's good to research. It's good for them to inform themselves and then make the decision. Another is, people who have problems because of how, in the development of the vaccine, in previous years many years ago embryonic tissue could have been used. So, there are people who have ethical and moral problems in religious terms and that's why, here in Chicago, especially in our Latino community, I have spent time in the churches. I have gone to church, at the end of the Mass with the Father, and we do a colloquium where people ask me the questions and they are very very valid questions. Very valid.

But to assure the population, especially the Catholic population, Christians who have trouble seeing if the vaccine was developed using embryonic tissue that, although, in the past, the 60s and 70s the technology that gave rise to this vaccine may have had some experiment with embryonic tissue. What you see today, the product you see today does not have any fetal tissue or embryonic tissue and that is why they should not have reservations in getting the vaccine. We have community members here in Chicago, religious, who explain that conundrum very well.

We can see, for example, in history there have been many, many of the technologies that we use today even to treat cancer that were made into things that today were questionable, but it is history. And we cannot let history guide the present when it is not something that is going to harm, but it is something that will benefit. That's why I urge patients, people living with blood cancer, to consult their spiritual leader because most spiritual leaders, including Pope Francis, are for this vaccine.

**Javier Macias:** Thank you very much for clarifying that religious aspect that is often not considered or heard much when it has to do with taking the vaccine or not. That it is good to know so that we can understand it a little more. But there's also that resistance from certain parents who think kids don't need the vaccine. Can you talk about the safety and efficacy of the COVID vaccine for children?

**Dr. Max Brito:** The vaccine for children 12 years old through adulthood, and then 5 years and older, are safe and effective, and there were no significant problems, outside of the problems which I already discussed. Some cases of heart problems, which have occurred without mortality. We are not yet giving the vaccine in children younger than 5 years. At the time of this recording, they have not been recommended in children under 5 years old. (UPDATE: CDC has now approved vaccines in children 6mos-5yrs old). Therefore, in the studies the data is still not a significant number of patients and others to recommend it and that is why it has not been recommended. But in children in which it is recommended, they can go to the CDC or to their health provider and see what the ages are, where it is recommended and the effectiveness of the vaccine is fundamental.

Another thing is that many parents think that children have a very mild course of the disease and should not be vaccinated, and I would look into what mortality there was in children and although it is low, you do not want it to be a relative of yours, number one. And secondly, there are complications of COVID that also occur in children and we want to avoid them. If there is a vaccine that is safe to avoid a disease, take it, because the arguments for not using it due to potential side effects, they are less than if there were no vaccine.

**Javier Macias:** Very good, very good to know. It is said out there that, if you have any type or have some kind of allergy to the vaccine, it is better not to take the booster. What are your thoughts about this, doctor?

**Dr. Max Brito:** A misconception, which I usually see, is that the person thinks that if they have an allergy in general or if they have had an allergy to a vaccine at some time in their life, they cannot take this vaccine. No. If you have had an allergy to the coronavirus vaccine, that is, if you went and got the first dose, if it was a severe allergy and the doctor told you not to get the coronavirus vaccine anymore, then you have an allergy to the coronavirus vaccine. But if you have allergies in general, or if you have or if you had an allergy to a specific vaccine, that doesn't mean it's a contraindication to getting the coronavirus vaccine.

Maybe it's an indication for you to have a conversation with your health care provider and ask them if that allergy makes it impossible for you to get the coronavirus vaccine. But don't assume that, because you had an allergy to something or had an allergy to some vaccine in your life, it doesn't mean that you can't get the coronavirus vaccine. That's not right. If in doubt, you should consult with your health care provider. There are very very very very few people who have had specific allergy to the coronavirus vaccine, if you are one of those people, then you should probably not get the boosters. And then if you are immunocompromised, you can use Evusheld, monoclonal antibodies and so on. But that is very few people.

If you have never had a coronavirus vaccine, do not assume that you have an allergy because of something that happened to you with another vaccine or simply because you have an allergy. Consult with your health care provider.

**Javier Macias:** And this brings up the question, if this allergy is related to some particular type of COVID vaccine because we know that there is the Pfizer, Johnson & Johnson vaccine or Moderna, right? Is there an allergy to a specific vaccine? Or could people change their vaccine from one to another? What are your thoughts about this?



**Dr. Max Brito:** There is no cross-reaction of allergies for the vaccines. For example, in the Pfizer and Moderna vaccines, which is the one we are using where the most the technology is the same, it is very similar. So if you develop the allergy against one, you're going to develop an allergy against the other. Not so in the Johnson & Johnson vaccine. You can try to, but I come back and I repeat, it is not usual to have allergies to this vaccine. Not to say that you can't be in the group, but it would be something very very very rare.

And if you had a vaccine of one type, you can get the vaccine of another type, that is, if you receive the Pfizer vaccines as your first series and in your local pharmacy, there is only Moderna for a booster, you can take the Moderna booster. There is no problem in combining these vaccines. That was something we were unsure about at the beginning, but we already know that there is no problem in combining vaccines.

**Javier Macias:** Well said, Dr. Brito. Right now, we're going to talk about how vaccines have worked for immunocompromised people, such as in our blood cancer patients. Dr. Brito, can you tell us about antibodies and why some of our patients with blood cancers may not have gotten the same protection from vaccines? And how the booster dose has been able to give patients greater protection?

**Dr. Max Brito:** Patients who are immunocompromised, including cancer survivors or patients who have cancer and have received chemotherapy, patients who we talked about earlier who have had bone marrow transplants and so on, those patients may not produce antibodies in the same amount because the B cells, which produce those antibodies, the number of those cells, may be decreased. Or by chemotherapy, which affects the malignant cells, but also affects the B cells is diminished. Or it's because your immune system, from your cancer or your disease is not working as it should and then does not produce antibodies, in the quantity or quality necessary to counteract the disease. So in these patients it's very important to vaccinate to help the immune system create that immunity, increase that immunity.

Now, even with giving the vaccine, we are giving the vaccine to an immune system that has some kind of defect, right? It is an immune system that is impacted either by cancer or by chemotherapy, so even giving the vaccine, because then antibodies are produced, but they are not produced in the amount of a person who does not have cancer because the immune system is impacted anyway, the immune system is not working normally.

So unfortunately, it has been seen that, in these people, because the immune response isn't as good with the vaccine, they are protected for a period of time that may be less than the protection of people who do not have immune system problems. It has been seen that, if we administer boosters, yes, we give several doses of the vaccine, then we try to keep the immune system maintaining a healthy amount of antibody to prevent the disease.

And while they may not be protected in the same way as a person who has no immune system problems, they are still in some way protected and they may have a level of protection that is important to prevent the disease.

So vaccines work, especially if we have a person, for example, who has malignancies, that have had cancer, that are in remission, because those people can respond in a better way than a person who had chemotherapy yesterday, right? So it also depends on the person, it depends on the host, it depends on

the person who has the disease. Not all people respond in the same way. One responds less, one responds more. But it is important, that it is maintained, that we keep the vaccination schedule up to date and then try to maintain a healthy amount of antibodies.

Now, there are patients who have moderate to severe immunosuppression, as we talked about a moment ago, and you should ask your health care provider where you fall, because you can't say just you are moderate, mild, or severe as you may not know how to quantify that, but your health provider knows.

So those people can, in addition to the vaccine, also have monoclonal antibodies for example, or your health provider can give you the medicine to counteract COVID, so that you have it at home. If you have any problem with COVID, you start taking it immediately. We already have many strategies to prevent and treat COVID, even in immunocompromised patients. But the patients who are immunocompromised have to stay a little more informed and have to have a little more care on a personal level, because at the moment when society is right now with the mask and other mandates, that protected us previously, protected us all before, they are not being observed. And then, therefore, it becomes necessary that then you listen to us and your healthcare providers, and take action in the matter to protect yourself.

**Javier Macias:** Well, for those who are out there listening, Dr. Brito, lately there has been a lot of talk about protection, as well as talk about monoclonal antibodies. And there has been a lot of talk about the protection of vaccines versus a natural infection. How are the antibodies of vaccines different from the antibodies that develop from natural infections?

**Dr. Max Brito:** Well, it actually depends on which antibody, we're going to put it that way. Antibodies are produced as follows. If you have a coronavirus infection, you inhale the coronavirus, you breathe in the coronavirus, say from a person coughing in front of you. The coronavirus goes to your airways, then in the airways, the virus begins to reproduce and then the immune system, our immune system that are like little soldiers, some cells that walk through the blood, patrolling of any foreign element that enters our body says "Aha, here is an invader, there is an invading virus."

So, they instruct the cells of the immune system to produce antibodies that are the ones that are going to destroy the virus, the ones that are going to prevent the disease. Then you usually have the symptoms and a milder disease. That's how the immune system does its job and eliminates viruses and you regain health. In people who have a deficient immune system, when the virus penetrates, it enters the respiratory system, enters the blood, enters en masse, and is in contact with cells. Well, then the troops are a little decimated and they are not so equipped to produce an antibody response.

What we do with the vaccine is, we don't expect the virus to come in to call the troops, so we tell the cell to call the troops. We inject something into our body, which gives a prescription to our cells that tells you, this is what the coronavirus looks like. In this way, it has this eye color, this hair color, you will find it and kill it. And then antibodies are produced, even when the disease is not present.

So when you get COVID, because you went to a concert and someone coughed next to you and the coronavirus penetrates your airway and the soldiers walk through the blood, they know the invader, then they eliminate it before the disease occurs. So that's the difference. Antibodies, which are produced naturally, are produced after the virus penetrates the body. If there is no event that triggers it,

then no antibodies will be produced. Antibodies produced by vaccines are produced before the virus, are prophylactic, that is to prevent the disease from occurring.

Now, these antibodies are the same, that is, because the vaccines tell the cell how to produce the antibodies, but they are the antibodies, they are the same ones that are produced naturally, but we are stimulating the immune system to produce it without infection occurring, right?

So that's the difference, but the antibodies are the same. Now, monoclonal antibodies, which you talked about earlier, those that are injected to prevent diseases. They are created in the laboratory, so the scientists know what the antibodies that we have in the blood are like, the ones that we produce naturally, so they produce it in the laboratory to be injected, so those are different. But they are the same natural ones of the vaccine. What it does is just that, it stimulates the production of its antibodies.

**Javier Macias:** Very good. Well, we already know that the fourth and fifth boosters have been approved for immunocompromised patients. Once again, what can you say about this to patients who are unaware, what advice can you give them?

**Dr. Max Brito:** To patients who have a compromised immune system, who have a blood cancer, who have not had at least 4 coronavirus vaccines in the last year and a half, you need to talk to your health care provider to get another booster. Because this is the dosing schedule more or less, the schedule is, for example, Pfizer and Moderna, you get the first dose, then you give one at 3 weeks if it's Pfizer, or at 4 weeks if Moderna.

Then at 4 weeks after of the second, the third is given. Then at 4 months after the third, the fourth is given and then at 4 months after that, the fifth is given. So as you see in a year there are 12 months, you can have put 4 or almost 5 easily. And if we started vaccinating, if my mind doesn't fail me, we started vaccinating the general population in January 2021, the health personnel were vaccinated first in December and January and then the general population began to be vaccinated in February and March. If you are one of the people who had the first vaccine in February, March 2021 you should have 4 to 5 coronavirus vaccines already. If you don't have that number, then consult your health care provider immediately to catch up.

**Javier Macias:** Very good. It's best to listen to Dr. Brito, because it has been more than two years since this pandemic began, not only here in this country but worldwide, right? What important lessons have we learned from this pandemic?

**Dr. Max Brito:** We can talk for more than an hour about what I have learned about this pandemic. But from what the world has learned, science has learned, from what we have learned, we have learned many things. We have learned from what we spoke about before, to develop a vaccine in record time, following in the footsteps of science, following the correct steps of science, because none of those steps that happened were violated. Going through the creation of monoclonal antibodies in record time, creating treatment for a viral disease that are typically more difficult than treating bacterial diseases we have antibiotics for.

Understanding the genome of a virus, that is, knowing in record time what is causing the disease is a virus, and what the virus is, and that it was a new virus that we have never seen before. All that, we have learned in 24 months, you and I, you and all of us have learned. And because of that, everything that has been created, all the subcultures that have been recreated around the coronavirus has to do

with seeing, in real time, what usually happens in science. Scientists, they see it, but populations in general do not see it. So all of that has come into the public eye.

So, to have the scrutiny of the scientific process is, how a vaccine is created, what are the public health measures that are known and created to prevent a disease from spreading. Doing that in the eyes of the world, what happens every time a new virus comes out a new bacterium happens just the same. We do the same thing we are doing now. As I told you, we do it more quickly. But we do the same thing, but by doing that with the eyes of the world, then you produce a whole subculture, people who don't believe what is being done, people who have problems with the vaccine for valid reasons, as some of us who talk about the valid reasons.

Others because they simply believe in things that are totally false. So that culture that has been created around the vaccine, the origin of the virus, all those kind of things are created. All that kind of speculation and conspiracy, that has brought the things that humans should be less proud of.

The division between people, the division between people who believe one thing to people who believe another. The political divide, all that kind of division and all that kind of negativity, that's also a consequence of the coronavirus pandemic, and we've learned that we have problems in society, which we must heal.

Not all people believe in science, not all people believe that scientists are doing what they do of goodwill. And that has produced problems. They have produced a problem as we have all seen. We have seen how the use of a mask has been negativized as when at the beginning, when the pandemic began in 2020, we were all family and we were all in the fight for the same goal. And the doctors, the healthcare providers, were people who were doing the right thing. They were doing everything to help us, but today many people have been demonized for listening to science and following it.

So, we've learned a lot of good things and we've learned a lot of things that we need to work on because we always have to be optimistic. Things that we must work on, that we must correct, social problems that are a basic problem. We have seen how poverty, as inequality in our Hispanic community, for example, inequity for Latinos and African Americans. That is, access to vaccines, especially in Latino patients, access to information. We talked before about having access to culturally appropriate material in Spanish, which is not there.

In the beginning, we created a coalition here, the Latinx Taskforce Coalition with several consulates and other groups. We created an access, because Latinos didn't know where to go to get the vaccine, they didn't know where to go and they didn't know if our community members who didn't have documents, who are undocumented, they didn't know if they're going to show up at a hospital to get the vaccine and then get deported. That wasn't going to happen, it was misinformation. But it wasn't the right information. That is, correct and reliable information. There is a great level of division that disinformation can cause. That's a great lesson from this pandemic and those are things we need to work on for when the next one comes.

**Javier Macias:** Of course, and having you today educating us, sharing information, it is important so that our community can be informed of what is correct, isn't it? What science and professionals know. And it should also be noted that our blood cancer patients and most of our patients who have had bone marrow transplants have also learned to take precautions because their immune systems have been

compromised. And that most of them were already experts in these precautions before the general public had begun to take these precautions.

And so, with this pandemic, they also appreciated that others, including their family, their friends or co-workers began to take precautions, right? Very important. But to conclude, Dr. Brito, and I know that you have volunteered your time to speak to us today. What we can say to our patients and caregivers in these, often difficult, times?

**Dr. Max Brito:** I always like to close these things on an optimistic note, because pessimism should have no place here. The coronavirus disease, for the last 25 months has been an experience that no one who is alive today has ever lived through, although the pandemic of 1918 was a global pandemic, too. There are already very few, if any, people who were still alive at that time, because they do not remember. They were probably very young children, if they are still alive, because it is already many years ago.

So, this is an experience that we have all lived, and I think it is an experience that is no longer the same as it was in the beginning. That is to say, although it is true that things have not yet ended, we are much better than when we were in 2020.

For immunocompromised patients, we continue to be concerned, and it should be emphasized, as I see patients with cancers who have infections, but I specialize in patients with acquired immunodeficiency syndrome, which by definition are immunocompromised. And I also have a great affinity for, in addition to the personal ties that bind me to people with blood cancer. Those patients have carried heavier loads during this pandemic, because sometimes, it seems as if the world has already moved from the coronavirus pandemic. It has already passed to the next step, right?

They say that we are going to have to just live with the coronavirus, but you have to realize that cancer patients still cannot live with the coronavirus with the same type of freedoms. For those patients I tell you, there is light at the end of the tunnel. Be careful with the measures we have been talking about, when you can use the measure of distancing and utilizing masks and so on, it is never too much, it is always a good idea.

And it is very important to talk to your health care provider. Most of you probably have an oncologist because you have blood cancers. Talk to them about alternative ways to protect yourself, how monoclonal antibodies may work for you, and how to treat the disease early, if you have it at all. And then see how to stay healthy.

You have carried a heavy weight during this pandemic, but there is light at the end of the tunnel. It is not the same situation as in 2020, and if we work together, we work with our healthcare personnel, we are going to get out of this with success.

**Javier Macias:** Dr. Max Brito, it has been a pleasure for us to have you on *Cafecito Con LLS*: Talking about COVID. The message of hope he gave us, has filled us with a lot of energy and above all, the information you shared today has been of great importance, and will remain on our LLS website, available for patients, for their caregivers, so keep informing yourselves and continue to share this message that is very important.

As we mentioned before, information, and resources in the Spanish language may be difficult to find, but we are here for you with these types of programs, like *Cafecito Con LLS*. We thank you, Dr. Max

## **Cafecito Con LLS: Let's Talk About COVID (Translated from Spanish)**

**Speaker:** Max Brito, MD, MPH, FACP, FIDSA

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Brito, once again, and we hope to see you in some near future, to continue updating us on the subject of COVID-19. Have an excellent day, Dr. Brito.

**Dr. Max Brito:** Absolutely, a pleasure to be with you. You have a friend in me, an ally. Thank you very much for the invitation.

**Javier Macias:** And once again I would like to share with you information about LLS through our Information Resource Center where we have Information Specialists, who may answer questions you may have. There are several ways to contact us and please don't forget that we are here to help you.

Our organization also offers service in Spanish with up-to-date COVID-19 information. Do not forget to visit our website where we have resources and information on this topic. And to conclude, we want to thank you for joining us today and please do not forget to complete the program evaluation (evaluation in Spanish) by visiting [LLS.org/EncuestaCOVID](https://LLS.org/EncuestaCOVID).

Thank you very much and have a beautiful day.

**End of Podcast**