



Multiple Sclerosis
Association of America **Webinar Transcript**

Program Title: “What You Need to Know About COVID-19 and MS: Program 4”
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Presenters: Barry Hendin, MD and Carrie Hersh, DO, MSC
MSAA Host: Peter Damiri

Peter Damiri: Hello and welcome to the Multiple Sclerosis Association of America's live webinar, What You Need to Know About COVID-19 and MS, Program 4. I am Peter Damiri, Vice President and Services for MSAA and your host for tonight's program.

This fourth webinar is part of an ongoing series designated to help you stay as informed and updated as possible on the constantly changing news around COVID-19 and how best to manage your MS. On behalf of MSAA and our presenters, we greatly appreciate the opportunity to continue providing you with timely and urgently information on this constantly changing situation. Also, please know that we continue to send our very best wishes to the entire MS community and hope you and your families stay safe and healthy in these uncertain times.

MSAA is extremely honored to welcome back our two MS expert advisors who will update us about the coronavirus pandemic and its impact on MS and answer your questions during our expanded Q and A session at the end of this program.

At this time, I would like to introduce our special guest presenters, Dr. Barry Hendin and Dr. Carrie Hersh. Dr. Barry Hendin is MSAA's Chief Medical Officer and a practicing neurologist at Phoenix Neurological Associates. He is also the director of the Multiple Sclerosis Clinic at Banner University Medical Center and Clinical Professor of Neurology at the University of Arizona's Medical School.

Dr. Carrie Hersh is the chair of MSAA's Healthcare Advisory Council. She is a practicing neurologist and assistant professor of neurology for the Cleveland Clinic Lou Ruvo Center for Brain Health in Las Vegas, Nevada. Thank you both again so much for being back here tonight and keeping us updated on this very important issue.

Dr. Hendin: Peter, I want to just say a word of how grateful I am to be able to work again with Dr. Hersh and you and with MSAA to continue to present what we all agree is an important subject for the entire community but also particularly for the MS community.

Peter Damiri: Thank you, Dr. Hendin. I appreciate that. So before we begin, I want to start off by thanking our supporters, Bristol Myers Squibb, EMD Serono, Genentech, and Sanofi Genzyme. Also, please know our next COVID-19 webinar will be this week, on Thursday May 14th at 8:00 pm Eastern.

This new webinar will address the impact of COVID-19 and MS on the African American and Hispanic American communities and will feature MS neurologist, Dr. Mitzi Joi Williams. You can register for this program starting tomorrow by visiting [MyMSAA.org](https://www.mysaa.org).

Also, as many of you may know, MSAA is a national nonprofit organization, dedicated to improving lives today for the MS community. In fact, this year marks our 50th anniversary as an MS organization. Listed here are just some of our many free programs available to people living with MS across the country, along with our ongoing, updated information on COVID-19. Also, please know we have extended our helpline hours to 8:00 pm Eastern between Monday and Friday. Please visit [MyMSAA.org](https://www.mysaa.org) or call us at 1-800-532-7667 to learn more.

And lastly, tonight's webinar is being recorded and will be archived to our website, joining the other three programs. As with the other programs and our new town-hall style, tonight's webinar will feature an expanded Q and A session. We invite you to ask your questions by using the chat box on your screen. I will ask your questions to the presenters at the end once the Q and A session starts.

When typing your questions, please try to make them as general as possible so they can apply to the larger MS community. Also, if you are experiencing any technical issues with the webinar, please type those concerns into the chat box as well.

And since we have covered a significant amount of information on COVID-19 during the past three programs, we have shortened the overview section tonight to allow for more time for viewer questions. We invite you to go back and watch those earlier programs if you're seeking more details about COVID-19 and MS. So with all of that now said, I am once again honored to introduce our presenter, Dr. Barry Hendin, who will start off tonight's program.

Dr. Hendin: Thank you, Peter. I - we've shortened the designated slides so that we have more time for questions and answers. And after I finish with the first slide, Dr. Hersh and I will go over some of the questions that were previously asked, that we never had time to answer in full. So there'll be some questions that have already been asked in the past that we'll go over that I think are very important. And then we'll open it up to your live questions, which I think are so important.

So this is just an overview. Slide one is kind of what we talked about in the previous session. First is, why is the COVID-19 such a big deal? We've had viruses before. I think the answer is pretty clear to all of us and that is the coronavirus is a virus that targets the respiratory system, but not exclusively.

And you'll hear that there are people who present nausea or changes in their sense of smell or taste or other gastrointestinal symptoms, etc. There's even now representation of COVID toes. So you know, be aware that although this is a respiratory target, it is not the exclusive presentation of COVID-19, Coronavirus disease 2019.

So the question that I'm asked in my practice more than any other is, "Does my MS in and of itself place me at greater risk for having COVID-19?" The answer's no. For most people with MS, having the MS is not

specifically an increased risk factor. But that isn't always true and obviously, if you have MS and have very significant disability in terms of not being able to clear secretions well, not being able to breathe as well, those things do create risks.

And then the same risks exist for people with MS that exist in the general population. The biggest risk factor appears to be age. Over age 60, even more so over age 70, even more so over age 80, especially if you've got what we call comorbidity, and that means heart problems, lung problems, uncontrolled diabetes, cancer, smoking - and I want to emphasize smoking.

It's clear that those are things that we ought to be watching. And if people say, "What can I do to reduce my risk?" It is to stop smoking, to keep your medical health optimal. That means your diabetes, your hypertension, your heart, your lungs, et cetera. And obviously, stop smoking, start exercising, et cetera.

In the very beginning, different people groups in Italy and England and the US tried to set up guidelines for what we thought for the risks of the various disease-modifying therapy compared to each other. Each of those guidelines have been of interest but they're all inconsistent with each other.

And the happy news is that in Italy and in England and so far in the United States, it appears that people with MS, on a wide variety of disease-modifying therapies, are doing about the same as the general population. That means that it wasn't the medicine by in large that determined how they - how they fared, it was the other comorbidities. So MS counts, the medications count - but much more so, age and general health.

There are things - so there are things that we do consistently say and that is, if you're on a disease-modifying therapy, don't stop it because of COVID. Don't change it, certainly, without speaking to your healthcare provider. It doesn't mean you can't change or stop a medication but that should not be done independently because of COVID, rather in a careful discussion with your clinician.

The second issue there is that stopping some medications -- particularly fingolimod or what we call the S1P modulators that go by multiple names -- stopping those suddenly can actually increase the risk of a more severe, what we call, rebound in MS. So rules are stay on your medication unless there's another reason to change after discussing it with your clinician.

Don't stop it. And then I think we should say what remains true in everybody's guidelines, it's about hand washing and social distancing and not touching face, etc. -- about wearing a mask to protect others. And so the kernels of truth you keep hearing over and over again remain true.

With that, I will turn to the questions that were presented in our previous several programs that we didn't get a chance to answer. I hope this will be followed by the new questions that will come from you, our very large audience. So the first question was, "If I'm on an immune modulator, am I more protected against COVID-19?" It's an interesting one.

So most of the discussions you'll hear are - really are the other way around and that is, "Am I at an increased risk of COVID-19 because I'm on a - because I'm on a particular disease-modifying therapy, particularly a lymphocyte-depleting therapy or the immunosuppressive therapy?"

I gave an answer to that already and that is, the risks in MS or across a wide variety of interests appear to be about the same or are similar to the general population. People with MS appeared to be doing as well as the general population. But this one takes a twist and that is, are there protections associated with being on an immunomodulator? The answer is really - perhaps.

Don't really have a clear-cut answer yet. But there has been a study that queries whether interferon or antiviral (inaudible) added to antiviral agents produces some benefits or whether teriflunomide might produce some antiviral benefits or whether the S1P modulators will produce some benefits.

If there were, the mechanism would be that once you get COVID-19, it's not the COVID-19 inflammatory, initially inflammatory events in the lungs that is so tragically - so tragic and such a - so severe. But sometimes, it's hyperimmune response that we call a cytokine storm that affects the lungs with a very large inflammatory response that's immunologically based, one could hypothesize that perhaps, being on an immunomodulator would protect against the - that cytokine storm, that hyperimmune response. It's still uncertain, it's still a question.

I always caution that we're in the first five months of a - of a pandemic and we're learning all the time. We really are still learning. Don't forget that. How are we trying to find the answers? We're trying to find the answers through registries. So there's an American registry called COViMS or COVIN, out of Washington University, Saint Louis, Dr. Pierse Somoni (sp) in Italy produced a registry with 250, onward of 500 patients. There's an English registry. We're learning all the time from the world neurologic community and the world MS community. Stay tuned. Doctor Hersh, would you take question number two?

Dr. Hersh: Certainly. Thank you so much. And I would also like to take the opportunity to thank the MSAA for providing us such a wonderful platform to discuss such an important topic, not only for patients who are living with MS but really for everyone worldwide. And it is an absolutely pleasure to co-moderate with Dr. Hendin.

So to address the second question, "Is it safe for me to access medical care, such as going to the doctor, getting MRIs, blood work, infusions, etc.?" So at this point, what Dr. Hendin has been emphasizing is that the long term care for MS continues to be very important, with or without the advent of this COVID-19 virus. And we as healthcare providers need to practice with as much evidence-based medicine as we possibly have in order to take care of our patients.

Now with that being said, multiple sclerosis is here to stay and we want to make sure that everyone who has MS is getting adequate care. And that not only includes continuing disease-modifying therapies unless otherwise specified by the healthcare provider but making sure that the individual undergoes the proper

screening and monitoring processes that are required to ensure safety on those disease-modifying therapies.

Currently, healthcare providers are using telemedicine much more abundantly than before and this is actually an exciting time for the healthcare profession in being able to utilize remote visits with a healthcare provider, either through telephone or through virtual visit platforms. Because these visits are predominately being conducted through virtual means, there is currently a significant component for safety if a person is nervous about going into a busy doctor's office.

Now as we have been able to start utilizing some different safety methodologies in order to decrease or minimize the risk of transmission of this virus -- such as healthcare providers and patients wearing masks, certainly employing social distancing, using frequent hand washing -- even an in-person doctor's visit can be done safely if these things are certainly being employed.

Now other questions have certainly come up in regards to the safety of going to an outside imaging center or to a lab facility to get blood work done. A lot of facilities are currently engaging in proper screening techniques for anyone who is entering the building, such as doing fever checks or screening questions at the door before folks can even walk into the building.

And there are certain private labs that are able to operate on appointment basis alone, so that way when the person comes in to get blood work, they're able to sign in quickly, go to the (inaudible), get their blood work done and then leave without having to sit in a busy waiting room.

If however these methods are not available, simply employing social distancing, wearing a facial covering to protect other people and vice versa -- other people will wear facial coverings to protect you -- and frequent hand washing will also help improve upon the minimization of transmission of this virus.

And of course, a lot of questions have come up in regards to safety of going to an infusion facility, not necessarily the disease-modifying therapy itself but simply the act of going into an infusion facility, sitting in a chair for hours at a time and then going home. And a lot of these questions are certainly very important, because our patients may also be getting infusions with immunosuppressive therapy.

A lot of the infusion centers are also abiding by proper screenings at the door -- either fever checks and or screening questions -- and this is probably happening several - at several time points while you are actually in the building. And there are certainly facilities that are distancing infusion chairs, so that way you are sitting at least six feet away from someone else who is getting an infusion.

And all nursing staff and ancillary staff should be wearing facial coverings when working in an infusion facility. So there are certainly methods that are being put into effect in order to minimize that transmission. Now if for whatever reason you are concerned about lack of procedures that are being done, this would be a very good time to follow up, give you healthcare provider, your MS healthcare provider, a call and notify them of the concerns that you have, so that way your MS can continue to be monitored safely.

The next question. "How do I stay safe if I or a family member returns to work?" So this is also becoming a very relevant question as businesses start to open back up and folks are being asked to return to work. So we are generally making the recommendations again that have been put out by the CDC on ensuring social distancing, frequent hand washing while they're at work.

And then when the individual returns to the home, of - if they are working in a location where there is concern about someone either being tested possible for COVID-19 or if there are any other concerns about transmission, to come home, remove the clothes from work, take a shower and then wash those clothes.

If for whatever reason there is an individual in the household where there is concerns about them potentially having COVID-19 symptoms, then this would be the time to not only notify the individual's healthcare

provider or primary care physician in terms of whether or not they need COVID-19 testing but also to make sure that there is a strategy to isolate that individual, either in a room or a part of the house.

So that way they are unable to minimally able to transmit the infection to someone else who is living in the household. If there needs to be some form of contact, making sure that you are wearing a face covering and of course practicing frequent hand washing will also help to reduce the transmission. So Dr. Hendin, I will leave the third question to you.

Dr. Hendin: Thank you, Dr. Hersh. So the next question is, "Will it be safe for people with MS to take a COVID-19 treatment or vaccine once these are developed?" So I'll take this. Let me speak first about the treatment. Well there are a number of possible treatments, including remdesivir, that are being explored as possible treatments for MS, hoping that it will reduce the severity or the impact of MS -- I'm sorry -- of COVID-19. There does not appear to be, at least of those which are currently being tested, a specific contra-indication in MS.

The more interesting question maybe about a vaccine. People are racing to try to find a non-live vaccine for COVID-19. I think at the soonest we will see it this year or early next year. (Inaudible), remember that it is likely to be a non-live virus and therefore safe for people with MS.

The problem isn't going to be the safety of the vaccine but rather whether it will be effective in people who are on some of the disease-modifying therapies. So some of the disease-modifying therapies, particularly ones which deplete lymphocytes on a continuous basis, there may not be the ability to mount a proper immune response.

So some of the agents that you currently use will not interfere with the ability to receive an effective, non-live vaccination. Some may reduce the ability to really achieve a successful vaccination. It's not that it creates risk -- a risk of disease -- but rather whether it reduces the success of that - of that vaccine.

So the answer will be, it will depend in part upon the agent. I think the old injectable agent -- the agents which don't deplete lymphocytes or the ones that don't deplete lymphocytes permanently or on an ongoing basis -- will allow for vaccination and probably successful vaccination. Much of this remains to be seen. Dr. Hersh?

Dr. Hersh: Thank you. So the next question is certainly a relevant question, as we are starting to enter into warmer months across the country, is whether or not we feel that COVID-19 will go away during the summer but then return again in the fall. So there have been a lot of questions that have come up whether or not COVID-19 is going to have a similar seasonal trend like the influenza virus that causes the seasonal flu.

And as we are currently seeing, it does seem that the COVID-19 does behave differently than the seasonal flu and that we anticipate that there will continue to be transmission over the summer and then maybe some peak occurrences during the fall. Now we currently don't have a good idea of whether or not we're going to see a complete lull over the summer but certainly, we are seeing in other countries that despite the warmer weather, we are still seeing outbreaks in certain communities.

So likely the virus will not quote, unquote, go away during the summer. We may see lower numbers compared to earlier during the outbreak but a lot of this may also be related to the fact that much of the country has been undergoing either lockdown orders or social distancing.

So it's questionable at this time which of these factors will really play in terms of the number of transmitted viruses over the next few months but I do expect that there will continue to be a viral transmission, even during the hotter months.

The issue with the fall is not necessarily just the advent of COVID-19 itself but in the fall we are then going to be in a situation where there's going to be our seasonal influenza and a lot of the symptoms - maybe not all symptoms, since there is quite a variety of symptoms that do occur with COVID-19 that, as Dr. Hendin has mentioned, does involve other organ systems besides the respiratory system.

But there is a lot of overlap with more common symptoms of COVID-19 and influenza and that includes fever, cough, shortness of breath and body aches and pains. And with that being said, there will be some complexity in being able to determine whether or not someone is presenting with seasonal flu versus COVID-19 and this is where testing is going to be very important.

What I would mention to not just the MS community but the entire community, that when appropriate, getting the seasonal flu vaccine will be even more important here, especially as we will likely be dealing with two different epidemics, slash pandemics, at the same time. And so it will be important to talk with your healthcare provider in terms of getting the seasonal flu vaccine.

The seasonal flu vaccine is a killed vaccine, it is not a live vaccine and it is considered safe in patients who have MS and who are treated with disease-modifying therapy. The timing in certain individuals who are on certain disease-modifying therapy such as the immunosuppressive therapies that deplete or decrease the B cells, that timing is going to be important in terms of when to get the seasonal flu vaccine.

The reason for that is because folks who are on these types of disease-modifying therapies may not be able to mount the proper immune response to a seasonal flu vaccine and maybe even a COVID-19 vaccine if they are given too close together.

And that's because of the decrease in the number of B cells that are the cells that are creating antibodies to mount the appropriate immune responses to vaccination. So these will be good times to discuss vaccines with your MS healthcare provider as we get closer to the flu season.

So I wanted to take an opportunity before we open it to questions from the live audience on some more helpful topics. You know, we're talking a lot about viruses and symptoms and illnesses but I do want to at least end the content portion of the presentation with a positive note and that has to do with health and wellness.

And I really do preface this because health and wellness is not just something that folks with MS should be incorporating into their daily lifestyle but this really is a global way for us to stay healthy and emotionally well. And it has been the - one of the priorities of the MSAA -- and certainly folks in my practice and Dr. Hendin's practice -- on the importance of health and wellness and the complementary treatment of long-term multiple sclerosis.

And there are a lot of studies that have shown that eating well and getting adequate sleep, and exercising daily, not smoking, having appropriate Vitamin D levels, all of these have been shown to have benefits in patients that have MS in reducing the risk of disease progression and inflammatory disease.

And, you know, I would preface that especially nowadays with a global pandemic that continuing these healthy lifestyle measures are even more important. And it provides more fuel to the fire, so to speak. So, again, getting plenty of sleep, being physically active, managing stress, drinking plenty of fluids, staying well hydrated especially as it starts to get hotter and eating a nutritious, well-balanced diet certainly will be helpful in this scenario.

You know, we talk about physical health but mental health is also very important. A lot of us have been, you know, locked-in at home for weeks on end. And, you know, it certainly start to feel very isolating. So, going out and taking a walk outside, of course, while continuing to abide by the social distancing recommendations that have been put out by the CDC, you know, can certainly help with this.

It's a great way to get outside. Get fresh air, be physically active. And, it's certainly not only important for staying physically well but emotionally well in addition to that. And it's important to note that social distancing does not equal social disengagement. And fortunately, we live in a time period where we have technical advances that support virtual platforms where we can actually see our loved ones and see our family members. So virtual chats are a great way to remain connected with friends and loved ones in a safe way.

I know that we all just celebrated Mother's Day weekend. And even though I could not be with my own family, we did use a virtual chat platform and it was a lot of fun. We were able to all get together and see one another during the holiday. So, I certainly recommend looking into some of these platforms if you have not already in order to remain socially engaged.

And, as I had mentioned before, mental health is extremely important. If you feel that you are struggling, especially with stress management, certain measures such as medication, guided imagery, self-reflection, deep breathing, and mindfulness have all been shown to greatly help to manage stress. And there are certainly, online materials that are available.

The MSAA has been an incredible supporter of mental health. And if there is social work or health psychology counselors who are part of your MS team, it's also important to touch base with them to see if there are any resources they can provide to you in a virtual format.

The Cleveland Clinic Lou Ruvo Center, we have an amazing social work team that has implemented virtual yoga and virtual support groups that I've heard incredible feedback on. So this is a time for us to come together, support each other, and be creative during a difficult time. And now I will hand it off to Peter for our question and answer period.

Peter Damiri: Great, thank you so much Dr. Hersh and thank you as well Dr. Hendin and excellent presentation as always and excellent to really get a lot of those frequently asked questions that we had in the past out there as well. I know a lot of people during tonight's program kind of echoed some of those questions.

So I'm glad we had the opportunity to get those answers as well. We did have quite a lot of questions that came through so that's excellent. And I'll start off by asking Dr. Hendin this question. If I were to contact COVID-19, could that cause an MS exacerbation?

Dr. Hendin: So there are two answers to that and the first is true exacerbation and the second is about pseudo exacerbation. As most of you know, if you have an illness, an infectious illness, particularly one that raises your body temperature, it may create even feign appearance as an actual exacerbation.

But it's not permanent and only exists while the fever or temperature elevation is going on. That's called a pseudo relapse and reflects increased body temperature and the worsening of MS symptoms that often accompanies overheating or fevers. So number one, pseudo exacerbations are - will be common with fever.

Number two, I suppose everybody with MS thinks frequently that when they're feeling ill in any other way, everything gets worse, I think, in a non-specific way they will feel worse. But the real question is will it or can it produce a true exacerbation or true relapse. It is still uncertain. But I will say that when you look at the literature as to what can produce an attack and that was work by Dr. William Sibley several decades ago at the University of Arizona.

The one thing that he found was productive of relapse not always but occasionally was an infectious illness. So the answer is number one, it may be able to produce a relapse though it would not be a one-to-one or a given. Number two, it would be likely if there was a fever to produce worsening of symptoms or a pseudo relapse. Thank you.

Peter Damiri: Great thank you for that. Next question for Dr. Hersh and there was actually a number of questions specifically on Vitamin D but this one also combined another question. So you can discuss the effect of blood thinners and Vitamin D on COVID-19?

Dr. Hersh: Yes, you know, we were actually expecting this question so, you know, thank you to who asked this. You know, just recently there have been some reports and media attention on the potential benefits of Vitamin D supplementation in possibly preventing or maybe even treating COVID-19. So right now, while there have been some studies that have been reporting a possible relationship, a possible benefit, there's still a lot of speculation in regards to causality of whether or not Vitamin D, itself, is truly beneficial.

Any time that we are studying a particular intervention, a drug, or a vitamin, or some other non-pharmaceutical intervention, the strength of the conclusions really does depend on the robustness of the study. How well was it conducted? Was it a randomized controlled trial? Was there a control group that either got nothing or an active comparator? Was there a decent sample size?

And currently the studies that have been reporting any potential benefit of Vitamin D there have been some questions on methodology. So I would say that there are no evidence-based studies to truly suggest that there is a direct benefit of Vitamin D on COVID-19.

However, Vitamin D supplementation generally speaking, not even just in the MS community but in all folks, we do see benefits in a number of other ways. So, you know, continuing Vitamin D supplementation or starting Vitamin D supplementation certainly with the assistance and the management of a primary care provider or an MS clinician, you know, would be recommended just for general health.

The question in terms of blood thinners, so this is coming from the fact we're now seeing that folks who become infected with COVID-19 may start to present with vascular symptoms as well as including an increased propensity to clotting which is one of the reasons why folks are developing what we call COVID toes. Essentially this is small clots that are forming in small arteries that are leading to vascular issues.

There have also been some cases of stroke and increased clotting in other parts of the body as well. It's not to say that everyone should start a blood thinner because there are some consequences of being on a long-term blood thinner as well. But aspirin as a potential treatment for folks who have COVID-19 who have truly tested positive and there is evidence of clotting, this is something that a blood thinner will be considered for use. Again, under the management of a healthcare provider.

Peter Damiri: Excellent, thank you so much for that. I know there's been a lot of discussion about safety precautions, and wearing masks, and social distancing. But in terms of wearing masks and as the country is moving into

late spring and early summer, obviously heat is a concern for people with MS and MSAA does have our cooling programs to try to help with this. But this question came in about what about increased body heat due to mask and glove use for protection against COVID and increase towards a relapse. I pose that to Dr. Hendin.

Dr. Hendin: Sure. So, gloves and masks are going to create a certain level of discomfort. But neither will markedly increase body temperature. And therefore it would be unlikely that they would increase the chance of a pseudo relapse. On the other hand, a lot of people are just uncomfortable with wearing the masks and gloves.

There had been real questions as to whether the gloves are actually very protective. And I think the advice has been more toward really careful handwashing than the use of gloves and wiping down surfaces. Masks, as we're using them right now, tend to be more for the protection of others. There are high-grade masks that really do reduce the likelihood of getting the virus ourselves.

But most of the masks and facial covering that we're using, we're really using as a way of protecting others if we cough, if we sneeze. If we have non-symptomatic or asymptomatic COVID-19 before symptoms have developed to protect others from those catching the virus from our exhalations. So the answer really in the simplest way is Number one, masks and gloves will probably not produce either relapse or pseudo relapse. But rather are a form of really community solidarity and protecting others.

Peter, I wanted to go back to what you said and that is during summer, I always think of the programs that MSAA has. MSAA has from its beginnings is a very patient-focused, community-focused organization. And one of the examples is the provision of cooling vests, cooling scarves, cooling hats to people with MS. Don't lose track of the fact that though it's summer, we still can mitigate the heat.

Peter Damiri: Great, well thank you for that. Yes, and people certainly go to our website at mymsaa.org and learn more. And we have an online application process as well. Next question for Dr. Hersh. Since there are carriers without signs or symptoms, how effective is taking temperature before entering a building?

Dr. Hersh: That's another excellent question. So, yes, if folks are pre-symptomatic or asymptomatic, checking for a fever is not going to be the only checkmark. It's a checkmark in a list of precautions that folks are taking especially with opening businesses including healthcare buildings.

So in addition to taking folks' temperatures which is just one of the safety measures and precautions that folks are taking, other potential safety precautions include a list of questions in terms of any known COVID-19 exposures. If there's been anyone sick in their home. Has there been any recent travel outside of that location on an airplane? And there's certainly a list of questions that can be asked to try to screen for any possibility of transmission.

But that's not to say that this then alleviates the need to social distance, engage in frequent hand washing and wearing a facial covering to protect others from potential transmission in someone who is asymptomatic. Those things are still important as well. So I'd say that a temperature check is a checkmark in the list of precautions but it's not the only checkmark.

Peter Damiri: Very good. Yes, certainly a lot of coverage on that in the news as well. Next question for Dr. Hendin. If you have hypertension that is controlled by medication and you have MS, will your chances of getting COVID-19 increase?

Dr. Hendin: The focus to date has been on people with uncontrolled comorbidities. So, for me the greatest factor in terms of outcome actually is age. The risks increase significantly probably about 5% as you go past age 60, probably 10% as you go past age 70, 15% as you go past 80. So age is the primary risk fact.

But, comorbidity has also become associated with age primarily uncontrolled. So uncontrolled hypertension, uncontrolled diabetes, uncontrolled obesity, uncontrolled cardiorespiratory disease. My guess is there may be a slight uptick in risk even with modestly or moderately controlled illness.

But the real risk factor has not been the entity but rather the poorly controlled entity. All the more reason for me to say there's a concept of kind of pre-habilitation, not rehabilitation but pre-habilitation. What would we do if we were in a pandemic to reduce the chance that if we got COVID-19 that it would be severe?

The answer is we'd start to pay attention to our weight and get it down to a proportionate amount. We'd eat healthy as Dr. Hersh discussed. We'd start to exercise even at home. We'd stop smoking and I'd repeat we'd stop smoking. And then we would try to take care of our mental health.

You can't help having diabetes, but you can try to get it under better control by diet and medications. The same with hypertension, the same with chronic respiratory or cardiac illness. It's a long answer but my point is controlled disease wouldn't produce the same kind of problem as uncontrolled comorbidity. And those are things that we can actually affect ourselves a lot.

Peter Damiri: Very good, thank you. Next question is for Dr. Hersh. And this one's a little tricky. I guess the general sense of the question is wondering since MS medications are produced not only in the United States but around the world and obviously this is a worldwide pandemic with other countries also being shut down and locked down and production issues. Is there any foreseeable shortage of DMTs arriving in the US for MS patients?

Dr. Hersh: I will answer this very quickly and shortly. As far as I'm aware, I have not heard of any disease-modifying therapy shortages.

Peter Damiri: Great, thank you so much. Next question for Dr. Hendin. If you do have COVID-19, is it safe to take ibuprofen or should I take Tylenol?

Dr. Hendin: There was a report and we'll call it anecdotal which is to say not scientifically based that perhaps non-steroid anti-inflammatories like ibuprofen might be associated with poorer results in COVID-19. But that has not been borne out. So I would say that it was as I've heard it, it's not based on rigorous scientific evidence. So that I would not advise against using a non-steroid anti-inflammatory. And on the other hand, if a person is worried, there's always Tylenol.

Peter Damiri: Excellent. And one last question for the evening before we get into our wrap-up and this will be to Dr. Hersh. There were a number of questions about different people's situations whether they feel safe going back to work. Some were working in pharmacies and other healthcare professions, possibly being exposed to patients who have COVID-19. And I know at times we have talked about, you know, taking all the necessary precautions. But just if you just touch again on especially if people are going into areas where they're going to be possibly exposed to people with the virus.

Dr. Hersh: Sure. No these are certainly highly relevant questions. And, you know, I thank everyone for they're highly feeling questions. These have been excellent and certainly relevant especially to my practice. You know, we answer these questions to the best of our ability all day long. And I'm certain that Dr. Hendin has been doing the same.

You know, it's a tricky situation. You know, especially when we are, you know, talking about individuals who have MS and they are healthcare providers as well. And it's the internal debate in their minds in terms of well, you know, I'm a healthcare provider and I want to help the public. But, you know, I'm also an individual who has a current condition on a medicine that may or may not increase my susceptibility and I'm scared. And I certainly don't want to put myself and my family at risk.

So these are internal debates that, you know, certainly our patients struggle with. And to the best of our ability, we try to help them along. I do want to preface this by saying that, you know, to date we do not have any firm evidence that MS increases the susceptibility of acquiring COVID-19 nor is there any sufficient

evidence showing that a particular disease-modifying therapy increases the susceptibility to getting the virus or the severity or mortality of COVID-19.

So right now, we really don't have any sufficient data to suggest that any of our disease-modifying therapies, immunomodulatory especially, are going to be potentially harmful. Some of the immunosuppressive therapies such as alemtuzumab otherwise known as Lemtrada or hematopoietic stem cell therapies, those are a little trickier and do require some more individualized counseling on the part of the healthcare provider. But other than those, we are not seeing any direct relationship with the potential susceptibility or severity of COVID-19. So I do want to preface that as some reassurance to our listeners.

In terms of returning back to work if they have not been at work and they're concerned about potential exposure to someone who has COVID-19, you know, again, I can't preface this enough, it really is going to be practicing the CDC recommendations, social distancing when you can.

If you are a healthcare provider and you are on the frontline or, even maybe on the second lines and there's a potential risk of exposure, wearing a facial mask is going to be important. Frequent hand washing, those are certainly things that can be done to help try to reduce transmission and spread.

If there is a more concern that goes beyond that, there is always the capability of speaking to human resources about any work accommodations that can be made. You know, maybe a working a little less directly with certain patient populations. And, of course, keeping in mind that when you come home, remove your work clothes. Maybe put them in a bag outside of the home. Come home, take a shower, change into clothes that are not work clothes to try to decrease the transmission to other folks who are living in the household.

But we certainly do appreciate, you know, the concern and the fear that is out there. And we really are trying to help support and accommodate our patients as much as possible. But, yes, just to understand

some reassurance that currently our patients who have MS fortunately with our registry data, we are not seeing increased rates of infection in our patient populations.

Peter Damiri: Great, thank you so much for that as well as to you Dr. Hendin for excellent responses for the Q& A that came in through earlier today. Well, we've reached the end of our program tonight. And I want to thank everyone for joining us. And again, especially Dr. Barry Hendin and Dr. Carrie Hersh for educating us about the coronavirus, its impact on MS, and ways for us to stay safe and healthy during this critically important time.

I also want to thank our funding partners, Bristol Myers Squibb, EMD Serono, Genentech, and Sanofi Genzyme for supporting this webinar series. As a reminder, our next webinar on COVID-19 is Thursday, May 14th at 8:00 pm Eastern with Dr. Mitzi Joi Williams.

The next webinar with Dr. Hendin and Dr. Hersh will be on Monday, June 8th. Registration information for these programs can be found at mymsaa.org. As mentioned, tonight's webinar will be archived to our websites very soon. And finally, we invite you to complete a very brief evaluation that is coming up next. So on behalf of MSA, Dr. Hendin, Dr. Hersh, and everyone that is listening, thank you so much for watching, and please stay safe.