



Introductory remarks of Dr. Gerard W. Clum, Director, The Octagon at Life University

Good day ladies and gentlemen, my name is Dr. Gerry Clum. It is my pleasure to come to you today on behalf of Life University and Today's Chiropractic Leadership. In the next few minutes, we'll have a wonderful opportunity to discuss the circumstances of the chiropractic profession, the adjustment, and the care we provide in relationship to the current COVID-19 pandemic. I'm going to be accompanied by three colleagues, Dr. Heidi Haavik, the Director of Research at the New Zealand Centre for Chiropractic Research at the New Zealand College of Chiropractic in Auckland, Dr. Dan Murphy of Auburn, California, a very well-known and appreciated lecturer around the United States and in fact around the world and Dr. James Chestnut of Vancouver, British Columbia, one of the most well-known persons in the profession speaking on the subject of wellbeing and the role that the chiropractor can play in that process for our patients and for the population on a broader level.

We're going to take the next few minutes, and I'm going to ask each of them to respond to very similar questions. What we want to try and get at is, in their view, on April 2, in 2020 with what we know about the COVID-19 circumstances, what they know about the status of research and information about the profession, what is it that you and I as chiropractors can say without question, can say without concern, about the care that we provide, its implication for our patients and perhaps even more importantly, what shouldn't we be saying about the relationship between chiropractic care and the COVID-19 environment that we're in?

I'll be very candid with you, I've been involved in Chiropractic for almost 50 years. I've never seen a more critical moment than we're in right now. And it doesn't have to do with anything specifically about Chiropractic, but we're caught up in this moment where the anxiety, the fear, the frustration on the part of the consumer, on the part of the public at large, on the part of nations is so immense and is so critical that anything that can be misinterpreted will be, and anything that can be misunderstood will be misunderstood. Anything that we say today could very well be something that winds up defining us over the years and decades to come.

So the purpose and the function of this conversation, is to give you a firm grasp of what you can say, what you should say, and perhaps again, most importantly, what you shouldn't say in your office and far more importantly in public settings such as social media about the interface of chiropractic care to this problem that's before us. I hope you'll listen very, very carefully to our three presenters. They're brilliant, they're thoughtful, they're well studied, and they will try and parse the elements of this as carefully and as completely as possible so that you and I, when it's all said and done, will have a clearer understanding of the best way to relate our care to this moment in time. So, thank you very much for being with us. I'll look forward to joining you at the end of this discussion, following our three presenters with some concluding remarks. And in the meantime, I'd ask you to listen carefully, be a good student, and we'll speak again in a few minutes. Thank you.



A conversation between Dr. Heidi Haavik and Dr. Gerard Clum

completed on March 27, 2020

Dr. Clum:

Good afternoon. This is Dr. Gerry Clum again. And we're continuing our discussion with notable individuals in the chiropractic community, who can help inform us and give us perspective on where we are in relationship with COVID-19 circumstances in our respective countries and around the world. Today we have the good fortune of sitting down with Dr. Heidi Haavik from Auckland, New Zealand, the Director of Research at the Centre for Chiropractic Research at the New Zealand College of Chiropractic in Auckland, New Zealand as well as the founder and director of Haavik Research. Heidi, welcome and glad to have you with us this afternoon.

Dr. Haavik:

Thanks, Gerry. It's a pleasure to be here.

Dr. Clum:

Well, Heidi, I'm going to kind of cut to the chase on this thing. You know, we're all supportive of the World Health Organization's recommendations regarding sanitation and distancing and the common-sense measures that are going on, and we're obviously all acutely aware of the significance that this problem holds around the globe. But what I'd like to try and get from you are your thoughts as a chiropractic practitioner, as a neuroscientist, and a researcher about the status of information about chiropractic care and the defense systems of the body, and what is it that we can say and what should we be saying in our offices regarding the relationship that chiropractic care may hold for patients at this moment in time?

Dr. Haavik:

Yes. Well, I've spent the last wee while looking into this in detail and completing a big review on the topic. So, it's very interesting. We've actually got more research than I actually thought when it comes to Chiropractic and the immune system, and I must do a bit of a plug to CMCC on that note because they've done a bulk of these studies, which is really interesting. What we can say for sure in our offices to our patients is that there definitely is credible evidence for a link, a connection between chiropractic adjustments and immune system functions. But these studies are based on basic science studies, and what we're lacking, and what we've got to be very careful about, is translating that into clinical claims because we have no studies yet that look at 'Would chiropractic care prevent you from getting sick or would chiropractic care reduce the symptoms of being sick, or the frequency of getting sick?' Those studies haven't been done yet. So, all we really know for sure is that Chiropractic definitely influences the nervous system. And Chiropractic definitely influences the immune system, but we don't yet know what does that mean clinically for a patient in your practice. So, that's where we've got to be very, very careful.

Dr. Clum:

Great. So that being said, what would the conversation in an office be in the ideal sense in your mind, between the practitioner and their patient?

Dr. Haavik:

So, you could tell your patients that we definitely know that chiropractic adjustments can change neurochemicals in the body that are related to immune system function. We know we can increase things like substance P or oxytocin or neurotensin. We know we can change certain interleukin cytokine levels. So, we know we can have an immune system effect, but we don't know what that effect would mean for them just yet. So we don't know whether that would prevent you from getting coronavirus. We don't know if that would reduce your symptoms if

you have coronavirus. We don't know those bits yet. And this is the key difference between basic science studies and clinical trials, and it's the clinical trials that we are lacking because basic science studies really looks at 'How does something work?' and is there a connection?'. And those studies, we've actually got quite a few. So we know chiropractic care influences the nervous system, and in particular, very important parts of the nervous system that are known to influence the immune system. And there are direct studies that show that chiropractic adjustments change immune system functions. So the connection is for sure! Those basic science studies show the mechanisms. So we know that there is a connection, but we don't yet know whether that means that you will not get sick or be less sick or recover faster, because those clinical trials just simply haven't been done. It could be that we can help with that, but we just don't know, because those clinical trials haven't been done.

Dr. Clum:

Right. And unfortunately or fortunately, depending upon, I guess your point of view, is that they haven't been done successfully in medicine, either, no one has a handle on an appropriate treatment or a recommended treatment in relationship to this virus at this point in time.

Dr. Haavik:

There are obviously studies in the medical world that look at viruses in general, and there's quite a bit that's known about that. But obviously I'm assuming you're relating to COVID-19. No studies have been done on COVID-19, but I was thinking in general, basically with the immune system. I mean, obviously there are no studies at all on the connection between chiropractic and COVID-19, you know, full stop.

Dr. Clum:

Absolutely. Absolutely. We're on the same page on that for sure. Okay. So Heidi, what I'd also like to talk about in a related sense ... you've written a great about stress in your work and the relationship of sympathetic tone or parasympathetic suppression and its effect upon the patient and their circumstances. I don't know what it's like in New Zealand, but it is wall-to-wall 24/7 radio, TV streaming, everything. Can you speak to the issue in general? Stress in relationship to immune function.

Dr. Haavik:

It's really quite sad. And because not only their stress in relation to getting this virus and then what does that mean, but also a lot of people are losing their jobs, so there's massive amounts of financial stress. People are losing their homes, because they suddenly can't pay their rent. So, stress at the moment is going to skyrocket. And that's something that I think we chiropractors need to be acutely aware of because that stress is so incredibly detrimental for our brain function and for our immune system function. We know that stress will turn off the rational reasoning part of our brain called the prefrontal cortex and we also know that it activates the limbic systems, the panic systems in our brains, the danger warning signals, they get elevated or heightened. We know that this also activates our sympathetic nervous system, and we also know that it activates our hypothalamic-pituitary-adrenal axis, and both of these, the autonomic nervous system and the hypothalamic-pituitary-adrenal axis, are both highly involved in the neuro-immune connection. Because the way the brain operates or the way the body operates is that it has these little clusters of immune cells, nerve cells and glial cells that are called neuro-immune-cell-units or cell clusters, and they're scattered throughout the body to sense what's going on in your body. If there's some invading pathogen or stress or trauma, if they detect anything like that, they will signal this to the brain in two main ways. One direct way by the afferent fibers and the Vagus nerve, so that parasympathetic nervous system. It's really a massive sensory system for the brain to figure out what's going on in the body. But these little cytokines that are released, if there is a pathogen or a local

inflammatory process somewhere, can also go via the circulation up to these middle centers (the circumventricular centers), these little parts of the brain where it can cross the blood brain barrier, and again the brain is notified that there is inflammation happening in the body. What the brain then will do is activate two main systems. One is the sympathetic nervous system, so it can directly activate the sympathetic nervous system and releases norepinephrine, and this influences the local immune response. You can also activate the parasympathetic nervous system. So these are both the divisions of the autonomic nervous system and the parasympathetic nervous system, this is the efferent fibers of the vagus nerve. And this is known as our cholinergic anti-inflammatory system. So again, it keeps things in balance, but the brain also has an endocrine response, and it can activate the hypothalamus, pituitary adrenal axis and release cortisol, and the sympathetic nervous system could also directly activate that adrenal gland and help release adrenaline. So these are the ways that the nervous system balances out the immune response that happens in the body. And the key here is balance and keeping this all under an appropriate response because you don't actually want too much inflammation, but you also don't want too little inflammation because too little inflammation can make you more susceptible to diseases and cancers and a whole host of things. But we also know that too much inflammation is associated with a whole host of chronic diseases today, which I've talked a lot about before. So it's very, very important this balance. And what's really interesting is that prefrontal cortex, this part just behind our forehead, is extremely important in balancing the autonomic nervous system and in controlling that hypothalamus, pituitary adrenal axis of the immune system. We know therefore that it's vitally involved in our immune system, full stop. And stress turns that part of the brain off. So this is where we think a lot of neuroimmune problems originally arise from. So if you think of the rising stress that's driving these inflammatory processes in the body, turning off the anti-inflammatory systems in the body and turning off your major controller, the prefrontal cortex that would balance out these systems, you can see where this just heads one-way, and this is where again, we've got direct-evidence that stress increases your susceptibility to getting sick. It prolongs you being sick, and it usually worsens your symptoms. So this is not a good thing at the moment.

Dr. Clum:

That's an understatement of all time; that's for sure. So, thank you for that discussion. I'm going to ask the same question I've asked you before, but in reverse. If you had to answer the question, give me two, three or four things that you hope you wouldn't hear from a chiropractor at this time, about this problem, relative to COVID-19, what would they be?

Dr. Haavik:

Okay. I would, I would not want to hear a chiropractor saying that chiropractic care can prevent you from getting coronavirus.

I would not want to hear a chiropractor saying that we have evidence that chiropractic care would improve your symptoms if you've got coronavirus.

I wouldn't want to hear those kinds of claims that we could prevent it, reduce the symptoms, and speed up the healing process.

We just don't have...those studies haven't been done. The links are there, and it's really up to us as a profession now to do these studies. The onus is for us to support the research and fund the research where we actually test those questions. You know, we know there's a strong link now, so does then chiropractic care prevent infections, does it speed up recovery times? Does it reduce the frequency of you getting sick? Those studies haven't been done...so, we literally don't know.



I would prefer it if the chiropractic profession didn't go say those things because we do not have the evidence. And like you said before, right now we're under a lot of scrutiny, and it's really, really important that as primary healthcare professionals, what we say is accurate and is up to date according to the latest scientific evidence.

Dr. Clum:

Thank you. I appreciate it. And I think that's great counsel for people in their offices, great counsel certainly for their social media activities and things of that nature. So we appreciate it very much. Is there anything you had hoped we would chat about today that we haven't gotten to?

Dr. Haavik:

I'd probably like to just add in again that, you know, there are clear connections now between chiropractic care and the nervous system and the way it works, that chiropractic care certainly seems to enable the brain and body to be more accurately aware of what's going on. And there is, you know, there is a little bit of evidence showing that we can improve its ability to adapt. And we know now that there are clear connections with the immune system as well. So, it makes sense that chiropractic care would be a wonderful thing at this time. And it's really sad, because here in New Zealand, we're literally banned from seeing patients. And I mean, that to me is heartbreaking because you know the model is there that shows that we probably would help people in this situation. But I'd be extremely careful with making those clinical claims because it's those clinical claims that we just don't have (the evidence for). And other than that, I'm very happy. There are a lot more resources available. I know we're going to include some links for those that are interested in learning more about these connections. We will be adding those to the end of this talk, if I understand you correctly.

Dr. Clum:

Absolutely. Be happy to add any information that you feel is important to this discussion and you're willing to share, and we'll be happy to make sure that they're added to this posting. Well, Heidi, I thank you very much. I wish you all the best and for you and your family and all of our friends in New Zealand. I understand that you're under a quarantine or a shelter in place order for, I think your government has said, four weeks?

Dr. Haavik:

Nationwide lockdown for at least four weeks. Looks like that's probably a little bit longer.

Dr. Clum:

We are probably in the same boat here in the States for sure. In California, we are 10 days into that lockdown, and it's certainly different around here. It is certainly different, and thankfully, everyone in our family that we know of is in good shape. I wish you the best and, continued health and wellbeing for you and yours. And, I'll look forward to the next time we have to be together.

Dr. Haavik:

Thanks, Gerry. Same to you.

Links to resources provided by Dr. Haavik:

www.drheidi.net

www.therealitycheck.com



A conversation between Dr. James Chestnut and Dr. Gerard Clum

completed on March 30, 2020

Dr. Clum:

Good morning ladies and gentlemen. It's my pleasure to be with James Chestnut from Victoria, British Columbia. And if you're a chiropractor, or if you're even remotely involved around the edges of the chiropractic community, you know Dr. Chestnut. You know about his activities throughout the years in terms of wellness and wellbeing and health promotion. You know about his academic capacity. You know about his research acumen and you know the kind of information that James brings forward to us.

Today's Chiropractic Leadership is very pleased to welcome Dr. Chestnut to this conversation.

Dr. Chestnut:

I think a lot of people are hung up on this concept of a novel virus is what we're dealing with right now. But I think it's important everyone understands that the immune system is perfectly set up to deal with novel viruses. So, there are two parts of the immune system. There's the innate immune system, which is really the phagocytosis, the phagocytes, which really identify non-self. They identify a pathogen like a virus, and then they either engulf the cell with the virus, they engulf the virus itself where they reduce, reduce (RELEASE) some like, you know, reactive oxygen species. And basically they kill it; they attack it and kill it. They're kind of the first frontline soldiers of the immune system.

And then the other part of the immune system, which is much more specific and much more organized, is the humoral or adaptive or the antibody system, as they sometimes call it, but that involves the T cells. And the B cells are the ones that actually produce the specific antibodies to the specific antigen or pathogen. And so that's really more of the more specific, more robust, that's the whole, that's the whole military coming in to attack this thing. But generally what happens, what's really important about this particular conversation is that because viruses like the cold virus, the rhino virus, the Corona virus, the flu viruses like influenza virus, they have a different strain usually every year, which is why people say if you've got the flu last year, you're not going to be protected from the flu this year. And that's because we don't use our antibody system.

We don't use our adaptive immune system to deal with viruses like the cold and the flu because the virus changes all the time. So, an antibody to last year's virus isn't specific to this year's virus. So, it doesn't matter. What that means for this discussion is that it's really the function of our innate immune system that is used to deal with viruses like influenza and cold, the Corona, rhino and coronaviruses because it's going to be new. So, the thing that really protects us, the thing that we count on, the reason why people don't get sick every year from the flu, even though it's different every year, is because they have this innate immune response, which is able to, to either attack and kill or reduce the number of those viruses in the body so quickly that it doesn't get a chance to take hold.

So when we're talking about seasonal illness, we're always really talking about our innate immune system, not our antibody system. The T cells of the adaptive system are very important as well because they're part of the quick response, but they don't make antibodies. The antibodies are something that helps us for future immunity much more than they do for that acute crisis. And so I think that it's important for people to understand that because I think people get nervous about novel, you know, they put the term novel in front of it, but we're absolutely very well equipped to deal with a novel virus, which is why the vast, vast majority of people who get infected with this coronavirus are absolutely fine. It's because our innate immune systems are functioning as they should be. They don't have any antibodies when they're first exposed to this virus. They don't have any

antibodies to it. It's their innate immune system. And in fact, the innate immune system is very important, very important for tagging this virus and creating politically, you know, putting antigens so that the, the actual and that's what the T cells are going to recognize. And it's also what the antibodies are going to be produced for. So the two systems work very closely together, but the whole thing is initiated by the innate immune system.

There are two things about an immune response that are incredibly important. One is can we upregulate it to attack this virus very quickly or attack whatever it is very quickly. So we want, we want to sort of upregulate it to try and kill that virus. The other thing that's equally as important, and this is really important for what we're talking about here, is can we then make sure it's called in the literature it would be called tolerogenic, are we making sure that we don't have a huge over hyperactive response or do we, do we produce too much inflammation? Do we create an autoimmune response; do we create atopic disorders and allergies down the line and the type of cells that are the most important in terms of regulating the response up-regulate when we're supposed to, but making sure it's not a hyper response. We also need to remember that the thing that people end up dying from, whether it's from influenza induced pneumonia or Corona induced pneumonia, is a hyper-inflammatory response in the lungs. And so one of the most important parts of immunity isn't just this idea that we think of that we have to upregulate it all the time. It's also to make sure that we control and regulate it properly so that we don't overdo it, which is really the thing that harms us. And so it's the T regulators, regulatory cells called Tregs or T regulatory cells that are important parts in terms of regulating the proper immune response. And we're going to talk about that later, but those are some of the things that are really mostly or are at our most vulnerable to deficiencies in Vitamin D, Omega-3 and Vitamin A because those, those immune cells actually epigenetically up-regulate the receptors for those essential nutrients because those essential nutrients are required to epigenetically change what those regulatory cells can do in order to properly function. So, if you're deficient in the nutrients that those T reg cells require, you're deficient in immunity, and you and your immune response or at least dysfunctional.

Dr. Clum:

Great. Thank you. Thank you. Very helpful. And I look forward to coming back to that in the conversation later on. And that's a great segue to the next area that I wanted to chat with you about is that obviously we've got a situation where we're dealing with a virus that mankind has not seen before. And we are in the early stages of the response that you had talked about. And there's a few constants. The virus itself stays the same across space and time. And the other factors.

Dr. Chestnut:

This year. It stays the same this year.

Dr. Clum:

Thank you. Stays the same in, in this window of time that we're in right now. So, so the idea that it's presence is one thing. And then we look at how we're responding. We acknowledge that unfortunately in the world today, there is no treatment for this virus. There is no cure for the virus. There is no vaccine for the virus. There is no known standard of care and dealing with this virus to kill the virus so to speak. But it's supportive care, the patient and, and so on. And that, that brings us to the point that you, that you were starting to discuss, the things that we can do as individuals to make sure that we our as prepared as we can possibly be to confront this virus. It appears from the conversations and to be ultimately going to be a ubiquitous virus with a high level of contagiousness to it. And therefore the variable as I see it is that we've got to strengthen ourselves in relationship to the virus for our own protection and wellbeing. That being said, can you begin some conversation about the steps you would encourage people to take to maintain that wellbeing?

Dr. Chestnut:

Sure. And I think that's such a great learning opportunity right now to understand why, especially our chiropractic paradigm about this idea of baseline health or baseline immune function, if you like, is so important at all times. And so the idea of health promotion in a sense right now is almost the same as harm reduction because as you said, there's really no other harm reduction strategies available to us. And I think the most important thing here is to understand that the variable, the variable determining that the level of, of effect, or burden or consequence of this pandemic is not the number of people who will be infected; it's the number of people who get infected who will become seriously ill. And so that's the main variable here. Everybody will agree. Now we have to determine what's the main variable determining whether or not somebody who gets infected will become seriously ill, require hospitalization and maybe require a ventilator because that's the thing that's causing all this overburden and over taxing of the healthcare system, the financial system.

So that's the most important question right now, which is what, what's the difference between people who become seriously ill and require hospitalization and ventilator versus those who are immuno competent enough that they can deal with this virus on their own without the need for any medical care and so on. By the way, that's the vast majority of people. Most won't require anything other than staying at home and you know, resting and all the kinds of stuff that we talk about.

So one of the things that we have to look at, there's two variables now. One is what, what is the thing that is making people immunocompromised? And so if we look at our culture, there's a lots of things, immuno-compromising corticosteroid medication is one of those things. Lack of proper healthy lifestyle is one of those things, improper nutrition, not enough exercise, too much emotional stress.

These are all the things that we can talk about that can downregulate immunity. And then some of the other things we'd have to discuss are what are the things that our immune system requires in order to function properly in order to express our immune potential. So, I think what's really important is most of the things that compromise our immune system, we're not going to be able to change in an acute crisis. So I'm going to leave those aside for now, but I want everybody to understand that there are some things that can literally create dysfunction of our immune system, but we're not going to fix those quickly.

But there are some things that we can do that can really help to restore proper function of our immune system that can make us more immunocompetent that we can do quite quickly. Certainly, one of those would be exercise, but it takes some time to come physically fit. But no matter what, if you start right away and just start getting out and going for a walk and exercising, we know if you start eating better foods, there's no doubt about it, meaning you are going to put less toxic food into you as well. We also know that if we, we start dealing with our emotional stress, that right away can make a difference for sure.

I would like to discuss something that's more clinically related, which is making sure that people are sufficient in their intake of the essential nutrients, about which the literature is unequivocal. This is an evidence based discussion we're having now because the literature is very clear that things like Vitamin D especially, but also Omega-3 fatty acids and Vitamin A, are incredibly important nutrients in terms of our immune system, that our immune systems literally cannot operate or function properly unless they have sufficient access to these nutrients, and these nutrients are called essential.

Biochemically what that means is that our bodies require them, our cells require them, but we cannot make them. Therefore, we have to ingest them, or get them through sunlight with Vitamin D, or ingest it. And so what the literature says, which is incredible, is that not only just the basic science info about how this affects immune cells, that's basic science research, but there's actual randomized clinical trials on intervention studies with



supplementing with Vitamin D and actually decreasing not only the incidence of, but the severity of respiratory illnesses like cold and flu. So there's a lot of evidence out there and even systematic reviews summarizing all the stuff they are showing. And then in the British Medical Journal, a public health recommendation that makes sure people get sufficient D.

I try to explain to people let's not say that these essential nutrients can cure the Corona virus or prevent it; that's not it. What we're saying is, is that what these essential nutrients treat is a deficiency in these essential nutrients. However, what we can say with certainty is that a deficient intake of these essential nutrients producing a deficient supply of these essential nutrients for your immune cells makes you immunocompromised. There's no doubt about it. So if you're deficient, and vast majority of the population is deficient in Vitamin D, they are deficient in, especially the proper ratio of Vitamin D and Vitamin A. And they're definitely deficient in Omega-3 fatty acids because it's just not readily available in our diet anymore without supplementation. It's really simple to correct it and relatively inexpensive, and it's something that can make a difference immediately. And so I, I just think that that's one of the things on top of just a general healthy lifestyle. That's one very specific thing to do with immunity that chiropractors can be talking about and should be talking about my opinion.

Dr. Clum:

Great advice. Great counsel. James, from your perspective, if, if I were your patient in your office in Victoria and I had just gotten my adjustment and, and we were talking about my concerns and fears about this whole milieu, what would your advice be? What would your counsel be to me as a patient? And what do you recommend to the guy or gal working over an adjusting table; what's the conversation they should be having with their patients about this entire situation?

Dr. Chestnut:

I think the most important thing is to focus on things they can control. So there are things that are going to be out of their control. And you know, the definition of stress really is focusing on things that you can't control. So what I would say is what are the things you can control? And there are some really common-sense things at the CDC people are putting out--wash your hands, social distancing for the time being. You know, all those things make perfect sense. But nobody's really talking to them about how to increase their own baseline health and wellbeing. And I think that's a really important role for a chiropractor. And so I think those are the, and it's also a great time to have that discussion which is to say, look, the most important thing determining, you know the course of this whole thing, whether it's individually or for society, is your level of baseline health and immunity. Your level of immuno- competence which really is in an indissoluble union with your baseline overall health. They're the same, right? They're part of the same piece puzzle or the same circle, I guess parts of the same whole.

So what I would say to them are the things that I've been telling you since you started here, there's all this focus on the importance of making sure that your body, the intelligence of your body, that your, that your genes get these proper inputs so that they can express health for you. Because you know, your genes are great. They just need the proper ingredients, right? So you know, you've got the great blueprint if you'd like, and you just need the proper building materials. But you've got the great recipe.

What I can tell you is that what you put in matters. And so, and that's something that we can control. Positive thoughts, healthy exercise input, movement input, proper movement of all parts of our body, including our spine, of course, and proper nutrition - that matters.

And then trying to block out the things that are that are going to harm you. It's all based on two things. It's based on toxicity, right? So limiting the amount of negative things that go in, whether that's a thought or a bad food or

sedentary living, whatever it is, toxicity. And the other one is deficiency. So we have to remove toxicities and we have to get rid of deficiencies by creating sufficiency. So the conversation is “what are you doing that is going to help you have the greatest level of baseline health and immuno-competence possible?” Are you taking those supplements? Are you exercising? Probably properly. Are you eating well? Are you making sure you don't have a lot of physical stressors? Are you making sure you don't have a lot of emotional stressors?

And that's the conversation. But, but interesting, Dr. Clum, that's the conversation I have with my patients every day. Because there's nothing different about the importance of being immunocompetent now than there was before this virus showed up. Because baseline health and immuno-competence have an effect on every illness – heart disease, obesity, diabetes, chronic inflammatory diseases, ulcerative colitis, I mean, whatever you want to talk about, right. What we put into our body, whether it's bad or whether we put in enough good is always going to be a huge factor in our level of baseline health, immunity, quality of life, wellbeing, enjoyment. It's important all the time. So that's the conversation I'd have.

Dr. Clum:

Wonderful. Thank you. Let me ask another question, and perhaps as we get to a close here, from the opposite perspective. What are a few things that you would like never to hear a chiropractor say about this situation and circumstance at this moment?

Dr. Chestnut:

I am adamant that a chiropractor should never say in any environment, but especially now, that Chiropractic is a treatment for infectious disease or that it could prevent coronavirus or that Chiropractic has clinical evidence that it can boost immunity.

I have lectured for many years as you know, and I can show with irrefutable evidence the biological plausibility of the relationship between a segmental problem in the spine, increase nociception, changes in sympathetic activity changes, that are going to lead to hypothalamic pituitary adrenal and increased cortisol that could absolutely have a relationship to down-regulated immunity and down-regulated overall health. The biological plausibility argument, it has been won. What has not been won is the clinical evidence argument. And I think now more than ever, it's important to make that distinction between biological plausibility.

And by the way, a decrease in proprioception also causes the same problems. The literature is full of material that says even increased pain changes sympathetics and the neuroendocrine system and autonomic balance. And if you look at Bruce McEwen's work, who is literally a founder on allostatic load, who I have spoken to personally via email, who says, absolutely a problem in the spine can represent an allostatic load, which can change autonomics and lead to all these issues. I went to the world's leading expert to check. So I'm just telling you, there's no doubt on the biological plausibility, but biological plausibility is not the same as clinical evidence. And so clinical evidence means that we have evidence that if we do a, this is the health benefit, that we get a measured health benefits. So Chiropractic was, has never been about treating infectious illnesses or treating any illness.

The clinical indicator for a chiropractic adjustment is, is a spinal finding. That's what determines whether or not we should adjust somebody. So, we would never say you have Corona virus. That's an indication that you need a chiropractic adjustment. You have heart disease. That's, we would never do that anyway. It doesn't matter what side of the spectrum we're on.

Both of those extremes, you know, would agree on one thing, and that is that the clinical, the legal and peer reviewed, clinical indicator determining whether or not a patient should get a chiropractic adjustment or Chiropractic. SMT is a spinal finding, not an infectious disease. So my point is this, is that it's the wrong question to ask if a chiropractic



adjustment can cure or prevent an infectious illness. The right question is, can the problem in the spine, that's a clinical indicator for chiropractic adjustment, can that be related to overall health or overall immune competence? Biologically, yes. If we want to determine if there's a clinical connection between people who get regular chiropractic care and people who are less susceptible to respiratory illnesses or heart disease or diabetes or emotional problems, then we're going to have to do some clinical studies asking that specific question.

And those studies haven't been done. So, as I say to people when you're talking to a patient in your office there is reasonable and you've probably had, most chiropractors have had a lot of clinical experience with seeing people change their overall health and immune status, less colds, less flus. I get it. So that's a conversation you'd have in your office and explain that indirect relationship with people. But it's not an evidence-based matter, it hasn't gained that level of evidence yet. So that means we shouldn't be making public claims about it. So a public claim requires evidence, clinical evidence. An explanation inside your office to your patient requires biological plausibility. That's my thing. And I think in this case we're going to do nothing but harm to ourselves and to our cultural authority and, and to our reputation if we make false claims. And that's how I feel about it.

Dr. Clum:

Great. Well thank you my friend. Well, listen, I can't tell you how much I appreciate you taking time out of your busy schedule. I know that we've all have had our, our lives and circumstances upended and, and turned around. And I don't know about you, but I've canceled dozens of flights and I've got, I've got enough credits with the airlines to be able to fly any place I want to fly for a long time.

Dr. Chestnut:

Maybe we can meet in Tahiti when this is all done, Dr. Clum?

Dr. Clum:

That's a deal. Thank you, my friend. We appreciate the information, appreciate the insight and the clarity with which you've spoken on these issues. And we, we thank you for, for all the work you do and you continue to do. We wish you well and take care of yourself and your family, and as they tell you, getting on those airplanes, put your oxygen mask on first, and we'll go from there.

Dr. Chestnut:

And I just, I would like to just say to all the chiropractors I understand how hard this is for the practitioner. That's not lost on me in any of this. We're having an academic discussion. The truth is, is that this has an enormous impact on offices and individual chiropractors as well. And, I really feel for them. Honestly. I do. And so I hope this helps. Thank you.

Dr. Clum:

Take care of yourself.

Dr. Chestnut:

Okay. You too. Thank you.

Links to resources provided by Dr. Chestnut:

www.TheWellnessPractice.com



A conversation between Dr. Daniel Murphy and Dr. Gerard Clum

completed on March 31, 2020

Dr. Clum:

Good morning ladies and gentlemen. My name is Dr. Gerry Clum, and it's my pleasure to be with you on behalf of Life University and Today's Chiropractic Leadership. And we are continuing our discussion with notable persons in the profession about the current situation regarding the Corona virus pandemic, and its implications to the practicing chiropractor in the United States, in North America in general and beyond. Our guest this morning that is joining this conversation along with our other colleagues is Dr. Dan Murphy. If you're involved in Chiropractic and you don't know the name Dan Murphy, then you're not involved in Chiropractic, pure and simple. Dan is internationally known for his academic acumen, his research and his ability to collect, integrate and synthesize data as a teacher. He's the master of metaphors, and hopefully he'll share some of those thoughts with us today regarding the, the Corona situation. So, Dan welcome to you and thank you very much for taking time out of your schedule to be with us today.

Dr. Murphy:

Hi everyone and thank you, Gerry.

Dr. Clum:

Dan, I'm going to jump right into it. We are obviously all dealing with this. We both live in the greater San Francisco Bay area. And we're under a shelter in place order from the state of California. Everything gets disrupted. And one of the things that we're very grateful for is that chiropractors in California, at this point and in many locations across the country and around the world, have been recognized as providers of essential services and as such are continuing their practice. One of the areas of concern that has come up in the profession is what should a guy or a gal in their office be talking about, sharing with patients about the Corona virus circumstance? Obviously, the basics that have been put out in terms of washing your hands, distancing, all the common-sense recommendations those are pretty obvious. But for you and I as chiropractors, we have our element to add to this conversation. I'm wondering if you'd be willing to share your thoughts about where we are and what that conversation would ideally look like to you.

Dr. Murphy:

Sure. The first thing is I would agree with all you just listed, the things we're hearing from the authoritative agencies. It's this stuff, I won't even repeat it because we all, you know, like wash your hands. The conversation though in a chiropractic office I think has a lot more history and nuance. Even your typical chiropractor understands as Nancy Appleton wrote back in 1999 where she profiles two individuals. Claude Bernard and Louis Pasteur. They were both French physicians, top guys that have very different perspectives on infectious diseases. And I think that that is the conversation that we (chiropractors) are having in our offices. In fact, my wife Michelle is having one right now in this office where you are taping me.

If you look at the people that are dying of the coronavirus or just people that get it, not everyone dies. Some die, some survive. In fact, some don't even appear to get sick. What is the difference between these individuals? That is the topic of Nancy Appleton's book, and she points out that Claude Bernard said that just being exposed is not the entire issue. The other half of the equation is host health, and if you are a healthier host, you tend to survive or have minimum symptoms. When they look at the people that are dying of the coronavirus, there are people who are unhealthy.

So the argument in Chiropractic is let's look at everything we can do to not to be exposed, but if we are exposed, what can we do to enhance host health? And there's a slew of things that we can do, and that's kind of what we integrate into our clinical discussions on these things. I think that potentially the most important of all studies on this topic was published in the New England Journal of Medicine back in 1991. I refer to it as the Cohen study, and it came out of Carnegie Mellon University in Pittsburgh, and what they did is, they took 394 humans and dripped viruses into their noses that were associated with the common cold; everyone had the exact same exposure. Did everyone come down with the cold? No, and just like the coronavirus, people that are exposed, some get sick and die, some have almost no symptoms at all.

I recover relatively quickly. What are the factors that allow people to recover quickly? Well, according to the Cohen study in the number one medical journal in the world, they say it is their stress level, the stress level as measured by looking at catecholamine, epinephrine and norepinephrine. They say that those that have higher levels epinephrine and norepinephrine, those are the individuals that were immunocompromised and were more likely to get sick.

Now, this brings us back to the chiropractic connection. Particularly. If we look at studies, I know you're, you are well aware of the Ogura studies, even though Ogura is only the first author in one of the studies. But in both studies, I think they were able to prove beyond any argument that what chiropractic adjusting does, is it reduces the levels of those stress chemicals, specifically primarily norepinephrine.

They did this by injecting people with radioactive glucose, pre- and post-adjustments while looking at the conversion of that glucose into adenosine triphosphate with PET scans, Positron Emission Tomography, while measuring levels of salivary amylase, which are good measures of levels of catecholamine, norepinephrine. Their conclusion was that the chiropractic adjustment is inhibiting catecholamine, norepinephrine. Well, if the Cohen study is right, this would mean that that approach (the chiropractic adjustment) is, in fact, an important approach to enhance host health.

The chiropractic profession is a profession that primarily looks at things mechanically and delivers mechanical care to people, improving the way they live, exist and function in gravity. There is historically another profession that has said the same thing, and that is osteopathy. And I would encourage anyone that is into these topics to read Journal of the American Osteopathic Association, May 2000. There's an article by the editor of JAOA, Michael Patterson, Ph.D., and what he does is he goes back into the osteopathic literature associated with the 1918 flu pandemic, and he talks about how osteopathic mechanical care made significant improvements in host health and resulted in significant improvement in host survivability. Because of my unique skillset, I can do a 12-hour class just on what we will do very briefly today. There are so many studies, that are not clinical trials, but are studies that support the chiropractic anecdotal observation that people that have certain illnesses including infections tend to do better under chiropractic care. And it's not that we're curing things. It's that I think we are, we are improving host health. I remember my very first year as a full-time clinician, and this is my 42nd year, I had a, a nice lady, her name was Paula. She said, "You know Dan, before I came to see you, I had gotten pneumonia every year. This is the first year I have not been saddled with a bout of pneumonia. For some reason, I'm different." The more you're in clinical practice, in terms of number of years, you see more and more people tell you similar stories. Then when you have associate doctors (I have had 70 associates!) and their patients are telling you that, and you hear these anecdotes – and that's what they are, anecdotes – not science, you wonder what is the scientific basis? I have come to appreciate that there are plausible explanations for this in the scientific literature.

What is lacking are the clinical trials. And that's just because chiropractic research has been pretty much self-funded. We don't have the money that other disciplines might have, but in a nutshell, that's how I would start this discussion.



Dr. Clum:

Great. Thank you. I appreciate that perspective and appreciate the distinction between matters of biological plausibility and clinical trials and the fact that they are not equal, and that they are different approaches and different data sets. We need to be candid and honest and say that we don't have the clinical trials. It doesn't mean the evidence that you've talked about from Cohen forward, as well as back in history following Patterson's line of reasoning, doesn't exist that it isn't meaningful.

What do you think the, guy or gal in the office should not be saying relative to the coronavirus situation and claims that can be made or, or shouldn't be made relative to chiropractic care?

Dr. Murphy:

It's not fair to say that you are curing any disease, including specifically an infectious disease. I think a chiropractor should not say that. I mean, how many chiropractors say, "Yeah, I will cure you of your syphilis." I mean that's nonsensical.

I think that what helps you with infection is your own immunological responses. And I think chiropractic care has a part to play in that. But, there are so many other variables with the individual in their health that can supersede anything that a chiropractor would do, that you have to be really cautious of any claims that you would make in terms of telling people that you can cure them.

I think chiropractic care's greater benefit is not treating someone with a cold, but treating them before they get a cold so that they are less likely to get the cold and cold symptoms. I know that even though my voice is a little raspy today, I've been pretty much 100% healthy my entire adult life, as are my children. I have 55 years worth of children now, and my children are pretty much completely healthy too. Yeah. We don't treat people so much for diseases, but we treat them to make sure they're as healthy as they can be so that their immune system is as good as it can be dealing with anything that they would come into contact with that is potentially disease producing.

Dr. Clum:

Over the years, I have heard you lecture many times having the good fortune to sit in on your classes when you were at Life West over the decades that we spent together. You've always had an orientation and an emphasis on the nutritional needs of the patient and the nutritional needs of healthy living. While we've talked about the mechanical issues associated with the spine, the skeleton, the human in gravity, as you say, what about the other nonpharmacological, non-mechanical approaches you might consider?

Dr. Murphy:

There are a handful that I think are important. The most important one is the Sanchez study that came out. I was in high school in 1973. I graduated in the spring of '73. I think Sanchez came out in November of '73, number one nutrition journal in the world, The American Journal of Clinical Nutrition. This study is critically important. We make sure our patients know about it. What they did is they gave sugar to humans, looking at the human innate immunological response. They found that they could drop the innate response by the macrophages. They could drop the response by half by giving them sugar. In fact, what is interesting about that is one of the sugar drinks they gave them was a glass of orange juice. They found that a glass of orange juice collapsed the innate immune response for a minimum of five hours and for often as long as 12 hours in a meaningful way. So we tell people sugar is immunosuppressive in that it is more difficult for the body to deal with any infection if you're consuming things that are sugary, including orange juice. Vitamin C, orange juice, that's good for you, right? And they say no, it actually is not.

Other than that, we know that Vitamin D got the Nobel prize, and it did not get the Nobel prize for strong bones. It got the Nobel prize for infection. And that's because the innate immune response is controlled by Vitamin D. And consequently, when you just look around, even here in Northern California where you and I are from, if you look at your typical patient, they are way low in Vitamin D. In fact, the new standard for Vitamin D is 40 nanograms per milliliter, 40! And yet we find people routinely that are below 20. This means that they are immunologically not optimal. So we try to get people above 40. In fact, we think that people should ideally be above 50, and so this means that they got to get into the sun, which is difficult right now.

It's in the fifties. No one's going to go out into the sun in Northern California. So this puts us into the realm of supplementation. So we talk about supplementation. We just want to get it up into the optimal range for immunological reasons. We've also heard our entire lives, all healthcare providers, the link between zinc and immunity. Zinc is involved in many of the processes of the immunological cascade for protection, and zinc is a mineral that is notoriously low in humans. The result is supplementation with zinc at least for a short period of time is probably a worthwhile thing to do.

Again, we like to check people's zinc levels. When we're thinking about colds and flus and other things, we're thinking, okay, let's take a little bit of zinc for awhile to make sure that issue is covered. As you and I talked this morning off camera about how hospitals are now advocating Vitamin C, we've always heard about immunological responses and Vitamin C. Vitamin C is just one of a network of components of a healthy immunological cascade that would also include not only Vitamin C, but Vitamin E and alpha-lipoic acid.

Then of course we show them the book by Matthew Walker from UC Berkeley, "Why We Sleep." He is the world's leading authority on sleep. He flat out says if you don't get eight hours of sleep, you've dropped the efficiency of your immune system by 50%. The result is he says it is non-negotiable. When you are sick or trying to prevent sicknesses, you must get eight hours of sleep. It's non-negotiable, and you can never engage in what he refers to as sleep procrastination. You can't stay up late to see something or somebody on TV. You've got to get your eight hours and be in complete darkness so that you run the melatonin pathway, which can enhance the immunological response against everything including infectious diseases.

Dr. Clum:

Thank you. I think that the suggestions that you share with your patients and your community on an ongoing basis are easy to do and inexpensive, with no adverse effects. No downside to it. Whether you view it as something in the chicken soup category that "it can't hurt!" Whatever. The bottom line is you are suggesting something someone can do to begin to feel like they are participating in their defenses and participating in their recovery on a day in, day out basis. And that could certainly add to their mental health and wellbeing as well. So thank you very much.

Dr. Clum:

Great. Thank you. Are there any thoughts that you have, that you had hoped we would cover this morning, that I didn't get to chat with you about?

Dr. Murphy:

Well, you know, there is the argument that a lot of notoriety came to the chiropractic profession during the 1918 flu pandemic. And even though it is not as well documented in the chiropractic literature and history, as it is in osteopathy (chiropractic was still in its infancy in 1918 having just begun in 1895), there are some historical accountings. If you look in the Palmer Archives: The Flu and You, there's some pretty good information there. Again, it is clearly not saying that we are healing people, but that it enhanced host health in people who were able



to survive the infection better. I, of course, liked the book by Walter Rhodes, “The Official History of Chiropractic in the State of Texas.” I think it came out in 1978. It is a very good historical accounting and review of the historical literature of that time.

And then of course, the evidence of Chiropractic on the sympathetic nervous system. I like the Elenkov article from *Pharmacological Reviews* in 2000, the Nance study from UC Irvine, which came out in 2007. The Jiang study, detailing the connection between mechanical input and the sympathetic nervous system that came out in *Spine* in January 1997. I think you have to look at the incredible article from *Nature's Reviews in Immunology* that came out by Kevin Tracy in 2009. He has a graphic, and it shows you how the innate immune system works, which is what Chiropractic really works on and how it can make a difference, and he wires it to the nucleus tractus solitarius, which is the sensory nucleus for the Vagus Nerve. And then if you look at those three studies by Ian Edwards and colleagues out of Leeds University in the UK, out of the *Journal of Neuroscience* (2007), the *Journal of Chemical Neuroanatomy* (2009), and the *Journal of Brain Structure and Function* in 2014, it all increases the plausibility that sound mechanical or optimal mechanical care in a gravity environment does have influences on the immune system. It can help people with just about anything including, but not limited to, an infection.

Dr. Clum

Great. Right. Wonderful. Thank you very much, Dan. I appreciate it. We look forward to sharing this information with our colleagues around the world. And as you know, your thoughts will be merged with several other speakers, Dr. Chestnut of British Columbia and Dr. Haavik of New Zealand. We hope to give the listeners three very different presenters with three different emphases in the profession, all speaking about this subject area in general, and to a degree, on specific points.

So we thank you very much for taking the time. We wish you continued wellbeing and hope that all of those healthy years continue for you and your family as we transition and move through this very unique time and in our history as a profession and the history of the planet for that matter. So thank you very much, Dan. My best to Michelle and the family, and I look forward to seeing you again soon.

Dr. Murphy:

You're welcome, and bye everyone!

Links to resources provided by Dr. Murphy:

danmurphydc.com/free-stuff



Summation and closing remarks of Dr. Gerard Clum

I hope you've enjoyed the presentations of Drs. Haavik, Chestnut and Murphy. I know I did. I learned a great deal along the way as well. I promised you a little bit of a summary and an overview at the end of the presentation, and we're at that point. So if you'll give me a second here to see if I can work the technology and share my screen to bring up a PowerPoint presentation and ... here we go. We'll take it into full-screen mode and hopefully ... there we go. We're in great shape. Okay. So, let me just arrange my screen a little bit better for my sake.

The first and foremost thing I heard discussed was that we need to attend to matters of law. If you practice in a state or a province or a country where your government or your regulatory authority has issued demands of you relative to COVID-19, obviously you need to attend to those. The reality is the world is dealing with an infectious disease problem. You're dealing with an infectious disease problem. We don't need to translate that into a legal problem for you in your office, in your practice down the road, after this is all over with. So please respect and follow the recommendations, the requirements or the dictates of your regulatory authorities or your health authorities in your particular area or jurisdiction.

The second point I heard talked about today by Drs. Haavik, Murphy and Chestnut was that we need to be aware and considerate of the advice and counsel of agencies such as WHO and CDC. We need to remember that our patients are going to be getting the majority of their information from these types of sites. And it behooves us and them for us to be as familiar with this information as possible so that we can help them interpret it, we can help them put it in context, and we can help them make the most use of it in their lives and how they deal with this moment in time.

The third consideration I recall people talking about in the presentations was we all need to practice and encourage the practice of the common-sense efforts such as the hand washing, social distancing and mask use. These are all cost-effective, simple, sometimes perhaps inconvenient, but not difficult things to do, and they're all steps that will help prevent the spread of any virus, let alone the COVID-19 virus. And, to the degree that we can implement them, we should and we should to the extent possible.

The next point I noted as we were going through these presentations was that we need to understand and appreciate the value and the difference between basic science and clinical science evidence. This is an important point to make sure that we have a full understanding of. Basic science evidence tells us how an intervention could work. Clinical science evidence directs us as to when and where it works. Clinical science evidence builds on basic science evidence and basic science evidence builds on clinical science evidence. They build on each other, but they provide different information and have different applications. We need to be aware of both. We need to also understand and appreciate the value and the difference between biological possibility and clinical implications. Basic science evidence helps create the case for biological plausibility of a given intervention or approach. Biological plausibility describes the mechanisms and the pathways associated with interventions of all kinds. However, biological plausibility does not get to describing the effectiveness of a given intervention. The clinical implications, the effectiveness of an intervention, are determined based on studies such as clinical trials.

The next step I remember from the presentation is that the need for clinical evidence does not reduce or eliminate the value of basic science evidence. This is a very important point, particularly for us at this moment. In the current conversation regarding chiropractic care and immuno-competency, there is important and valuable basic science evidence regarding the immune function implications associated with chiropractic care. The biological plausibility of a chiropractic contribution to immune health has been demonstrated. The clinical evidence, however, demonstrating this effect in patient populations associated with chiropractic care and immune enhancement has yet to be developed and completed.

It's a mistake to say there is no evidence of a potential relationship between chiropractic care and immune function. There is basic science evidence to this effect. It is also a mistake to say that chiropractic care will shorten, or lessen the severity of, of a given viral infection, COVID-19 or otherwise, as this evidence has yet to be developed.

The next point I remember taking from the information was that we need to be cautious about applying the experiences of other scenarios to the present moment. Dr. Murphy in particular talked about the Spanish flu epidemic of 1918, and if you look at Facebook and other postings around, you'll see many chiropractors are drawing considerable emphasis about this moment based upon what happened in the Spanish flu epidemic of 1918. And while the information from that time, that was experienced by chiropractors and osteopaths, is intriguing and it's suggestive, we simply cannot take those anecdotal reports of that day a century ago and make blanket assumptions that would apply to COVID-19 at this moment in time; we just simply can't do it. So, for those of you that that are intrigued as I am about the potential relationship that was written about following the Spanish flu, we need to provide research along those lines. But at this moment, we don't have that. We need to be very cautious about taking the information from that time and bringing it forward to this moment.

I also heard, I think, each of the speakers talk about the idea that we need to be very reserved and restrained in social media posts and conversations. This is a very critical time. The entire world is on edge over this COVID infection. As a result, anything that's said is being hyper-analyzed, being put through a hyper-critical lens, and we need to be extremely cautious about what we say at this moment in time. We also, at this time, perhaps more than any other in our history or in the history of social media, we need to make sure that when we offer our opinions that they're offered as opinions and not as facts. And we need to not conflate opinions as facts and make sure that we're very clear what we're talking about. The best advice and strategy that I could offer you is to minimize opinions relative to COVID-19 at this point as much as possible. Put as much factual information out there as you wish, but minimize the opinions to the greatest extent possible. A cousin to that argument is that we need to avoid speculation. We need to avoid speculation about what is working in terms of medicine, what isn't working, who's at fault, what the problems are, where this got started, what the implications of it are over time, et cetera. This just isn't the time to speculate. It isn't going to help us. It isn't going to help the situation, and we need to put our attention toward making sure we understand as much about the moment as we possibly can.

My hope and my request of you is to provide chiropractic care during the COVID-19 era, with appropriate precautions, as you did before this time and as you will after this time. The care your patients needed before the COVID-19 reality, during and after this situation, will not change much likely. Providing chiropractic care is a part of a patient's health recovery, and wellbeing strategy does not change in the presence of COVID-19, again, with the precautions that we talked about just a moment ago. Our care is not directed toward the management of COVID-19. It is simply our ongoing care in the era of COVID-19. And again coming back to how we might change, how we might be expected to change the activities in our offices in the presence of the COVID-19 environment as we need to employ the appropriate hygienic and screening protections for you as well as for your patients. In your office, you'll need to modify some procedures and practices in this COVID-19 era. You should be prepared with policies and practices in your offices that provide you and your patients with as much protection from possible transmission as you can. Cleaning tables and patient care area surfaces between patients is expected, as are hand washing and the screening of persons prior to any patient care areas for fever or other obvious illness.

This is also a time when you might want to consider offering more conversation to your patients about supportive care directed toward stress, sleep, diet, supplement use, exercise, and the need for connectedness and support. As each of these elements contributes toward the immuno-competency of each and every one of us. This counsel is not suggested as a treatment for a viral infection, let alone COVID 19, but it is suggested as practical, reasonable,

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well established steps that each of us can attend to for our overall health and wellbeing as each contributes to the immune capacity that we bring to the moment.

Finally, the last couple of bits of information are from me personally. Take care of yourself. I travel a great deal on behalf of Life University and the profession, and every time I get on an airplane, you remember those days, the first thing they tell you is 'put your oxygen mask on first'. It's not being selfish to take care of yourself. If you're not well, you can't be of much use to others. So be sure and take care of yourself. Do what's necessary for you to maintain your greatest capacity at this moment, and as the airlines would say, 'put your oxygen mask on first.'

Well ladies and gentlemen, on behalf of Life University and Today's Chiropractic Leadership, I'd like to thank you for participating in this discussion. I'd also like to thank Drs. Haavik, Murphy and Chestnut for their expertise, time and cooperation and making this presentation possible. I hope you will plan to make use of the resources that they are making available through the web locations that they have identified, and that we've provided during the presentation, and that you'll take this opportunity to stay on top of this issue. Learn as much as you can, and be as prepared as you can for yourself, your family, and your patients. Thank you very much for your time. We wish you the best. Be well.