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## Multiple Sclerosis Association of America **Webinar Transcript**

**Program Title:** “Finding Purpose in Life”

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**Presenter:** Adam Kaplin, MD, PhD

**MSAA Host:** Peter Damiri

Peter Damiri: Hello and welcome to the Multiple Sclerosis Association of America's live webinar, Finding Purpose in life. I am Peter Damiri, Senior Director of Content Development for MSAA, and your host for tonight's program. On behalf of MSAA and our guest presenter, Dr. Adam Kaplin, we thank you so much for joining us tonight and hope everyone is doing well and staying safe and we do apologize for the lateness and the technical issues we were experiencing. As you may have read in our recent announcements, March is recognized as MS Awareness month and MSAA's theme this year is Improving Mental Health and Wellness, a very important yet often overlooked topic in MS care, especially as we continue through this pandemic. Today's program kicks off a series of digital educational events which also includes a March 16th webinar on managing depression and anxiety in MS, a podcast on “Caring for the Care Partner,” articles that are on our community, blog posts and much more.

All of this great content and the webinar registration form can be found on our dedicated MS awareness hub at [mysaa.org](http://mysaa.org). Also tonight kicks off our new virtual display hall, which you might have seen in the chat box before the start of the program. This online resource details some of the products and patient assistance services offered by our selection of sponsors. MSAA would like to thank Biogen and Genentech for taking part in this new virtual opportunity. As you may know, MSAA is a national nonprofit organization dedicated to Improving Lives Today in the community.

Listed here are just some of the many three programs including our cooling, equipment and MRI programs along with our COVID 19 and MS on tool, which provides ongoing updates on the Corona virus as the recently approved vaccines. Also, please know, MSAA has extended our Helpline hours between Mondays and Thursdays. To learn more, please visit [mysaa.org](http://mysaa.org), or give us a call at 1-800-532-7667. And lastly, please note tonight's webinars will be archived on our website within a few days.

For the Q&A session, please type your question into the chat box on the screen and we'll address them at the end of the presentation. And if you're having any technical issues, as we certainly had tonight, please type your questions/concerns into the chat box as well. At this time, I am extremely honored to introduce our special guest Dr. Adam Kaplin. Dr. Kaplin is a neuropsychiatrist in Baltimore caring for patients with central nervous system neuroinflammatory diseases such as multiple sclerosis. He graduated magna cum laude from Yale University before earning his MD and PhD at Johns Hopkins where he now serves as adjunct faculty in the department of psychiatry and neurology at Johns Hopkins Hospital. He is also the chief scientific officer at MyMD Pharmaceuticals. Dr. Kaplin thank you so much for being here tonight and presenting on this truly fascinating concept of purpose in life.

Dr. Adam Kaplin: Thank you so much Peter and thank you everyone for hanging in there. It's the life we lead here dealing with technology and the like. But just looking at it we've been able to retain the vast majority of you guys, which is wonderful. And again I have about 30 slides, which anybody who's heard me talk knows it's not much. So I tend to get through these in time to be able to leave time for questions and answers and having a discussion because this is a very personal topic that relates to everybody. What I intend to do tonight is talk about this concept of purpose in life, which has been around since 1940's, but really has kind of reborn in the past 10 ten years as it relates to people's health. We are starting to do some work specifically in MS looking but this general applicability and no time more importantly, I think that now, given what's going on with COVID and the like. So not to be a downer here but the good news is that the vaccines here, all the predictions are that certainly by the fall we'll all be vaccinated and have this virus under control.

But just from having gone through this and coming out the other side, it's not like it just stops on a dime. Everybody's going to be trying to recover from a once in 100-year kind of experience. So I thought I'd start off tonight with a joke, just a little levity before we dive into the meaning of life and purpose in life. So a man goes to his rabbi and says, rabbi, I was really upset today because I found out my son, who I raised in the Jewish tradition left home and now has converted to Christianity. Rabi says, funny that you've mentioned it, I too have a son who converted to Christianity. Man says to rabbi, you, what did you do? Rabbi said, well, like Job before me, I asked God to come to me and explain how this fits into the fabric of the universe.

And the man says, rabbi did God come? Yes, the rabbi says, God came to me in the middle of the night and after I was done explaining what had happened with my son, he stared at me in all of his fiery glory, He said, funny that you should mention it, I too have a son who left home and converted to Christianity. And I think it's just sort of proof that the goals we have for ourselves and our loved ones may diverge but that doesn't mean that they're not going to be even more important than we would have anticipated. So what is happiness and how does happiness and purpose sort of dovetail? We know from the Declaration of Independence that life, liberty and the pursuit of happiness is right in there in our original declaration, and something that we are entitled to. Then there are some other people – Epictetus said, the only one way to happiness is to cease worrying about things which are beyond our power.

So it's kind of be happy with what you have. Frederick Keonig said: We tend to forget that happiness doesn't come as a result of getting something but rather recognizing and appreciating what we do have. And gratitude turns out to be, there are positive psychology studies that have been done that if you just think one time a day, say before you go to bed, about one thing you're grateful for, that actually improves people's mental health and helps them keep a positive attitude. Buddhist said 1,000 candles can be lighted from a single candle and the life of the candle will not be shortened. Happiness never decreases by being shared. So again, these are all sort of different views of happiness. But this is sort of more getting to what we're going to be talking about tonight.

Ralph Waldo Emerson said the purpose of life is not to be happy, that's just too shortsighted - a looking at the whole sort of goals that we have. It is to be useful, to be honorable, to be compassionate, to have it make some difference that you lived and lived well. This kind of gets closer to the point. While happiness is an emotion felt in the here and now, it ultimately fades. And just as do all emotions. Meaning on the other hand, is endured. It connects to the past and the present and the future. And I think, again, that's sort of, we'll be getting into this, how this sort of dovetails with some of the concepts of purpose in life. And then finally he who has a Why to live for can bear almost any How. So let's just sort of review somewhat going back to Aristotle.

So the Aristotelian philosophy was that there's two types of people, those who are hedonistic and derive happiness from things that make them personally happy and then eudaimonic, those people who derive meaning from helping others or for having a purpose in life. And so again eudaimonic derives from eu meaning good, daimon means talent or potential. Goes all the way back to Aristotle. And again, what we're talking about tonight is purpose in life and we'll get into this in more detail. But it's a concept that is defined as a sense that life has meaning, that **your** life has meaning. It's not like an independent committee gets together and says your life has a meaning. It's your belief that your life has meaning and purpose, direction and intentionality and that this sense plays a guiding role in establishing your goals and the decisions you make.

Adults, just as a characteristic of people who have purpose in life when they do these scores, are people that tend to have a goal, a sense of direction. They feel that their past and their current life is meaningful. They have beliefs that give their lives meaning, sort of informs what they do and they have desires and goals that are worth living for. And I'm just going to cut over this a little bit. This is just the UN report from 2019 saying that happiness, the things that correlated with happiness included things like how the government treated the people who were governed. I'm not getting into politics now but one can see how this would have an impact as we're sort of changing administrations here. We'll see how things go. The second is generosity per social behaviors, people helping other people. This promotes happiness and then information technology actually decreases happiness.

So again, I'm not going to get into this right now in great detail, but I will tell you that if you look globally, the rate of negative affect has been going up and positive affect have been going down. So this just shows that over the time, starting really in 2006, there's been a decrease in happiness overall. And during this time there's been an increased number of internet hours spent, sleep has been going down and this unfortunately correlates with, again, around 2006, this is all ages. This shows different age groups. And you can see that even though the suicide rates were going down, particularly among young people where suicide between the ages of 15 and 35 is the second leading cause of death, even though it was coming down for many people, it then sort of turned here.

And again, we're not going to discuss this tonight. But a lot of this relates to the impact of technology. And I'm sure some people were depressed about what was going on with the technology earlier in the evening. So here is Victor Frankl. He really got the story going. Victor Frankl was a Viennese neurologist and psychiatrist. He was trained in both and he survived the Holocaust - meaning in large part because he wanted to get through the Holocaust in order to share with humanity the philosophy he had, where he said the will to meaning is a primary motivational force for survival. What did he mean? Well, just like we have inborn into us an instinct, if you will, or a drive to reproduce, to save ourselves, to love our family and children, the parental instincts and the like, he said that there is this inborn motivation to will for meaning, to have a purpose.

And so he sort of had this philosophy it lead to logo therapy which is a type of therapy to help people get in touch with what their purpose is. And then Crumbaugh and Maholick in the 60s and 70s came up with the 20-question questionnaire. You can find this if you look up Crumbaugh and Maholick in 20 questions on purpose in life, you'll pull the 20-question questionnaire off the internet. I'll show you many of the questions in just a moment. But they operationalize things. And basically in fact there modeling, these 20 questions factor in the three main areas. One was, do you think that there's meaning in existence? Second, do you think that you have freedom to create meaning from what's going on? And the third is, do you personally have the will to find meaning? So just as an example of what some of these are like.

So here's some examples. I am usually – and it goes from one being the minimal score, seven being the highest. I'm usually completely bored all the way up to enthusiastic and exuberant. In life I have no goals all the way up clear goals. In achieving life goals I've made no progress or completely progressed to fulfillment. So these are an example. Freedom to create meaning. Concerning man's freedom to make choices, I believe man is absolutely free or completely bound by limitations in heredity. Here are examples of finding meaning. Life to me seems always exciting to completely routine. After retiring I would like to do something exciting I've always wanted to do or loath completely the rest of my life. You can kind if get a sense – it covers a large range. And then here's what's interesting - this kind of was in the literature. People discover that people with higher purpose in life have easier times recovery from addiction, for instance, and it had positive outcomes in a lot of ways. But this is one of the landmark studies that came out 10 years or 11 years ago now that really changed the way we think about purpose in life.

What do I mean by that? Well, this is a study that looked at people who had what's called mild cognitive impairment, which means that they had what we would now consider pre-Alzheimer's. Not everybody with mild cognitive impairment will progress to Alzheimer's, but they have early indications that they're having some word finding problems and the like that are out of proportion to the normal aging. And then at time zero they checked their purpose in life. And we followed them perspective for six years and what they found was really dramatic. Which is to say your chance of having Alzheimer's disease at six years was 2.4 times greater if you had a low purpose in life than if you had a high purpose in life. And I just wanted to pause for a second and tell you, we have no good treatments for Alzheimer's disease right now. So the best we have are Aricept and the like, which basically decreases the rate of progression of Alzheimer's disease by three months in what is a 10 year course generally.

So if this is causative, and it's by no means been shown that it's cause instead of a correlation, but I just want to pause and say, if this is causative, this is the best treatment known to mankind for Alzheimer's disease. So this is a huge, huge impact. But of course you could say, well, maybe people who have good brains less likely to already be on of their way to Alzheimer's disease are

more likely to have a high purpose in life. And so this same group said something very interesting, which is that they then went and looked in people again, this is over years and they had people who they scored and then observed for six, 10 years later and found those people died and then they looked in their brains. Now, normal brains have these neurons, obviously looking very happy, and if they have Alzheimer's they have what we call tangled proteins inside the neurons that ultimately kill them or plaques, kind of gum like substance in the brain and either is associated with Alzheimer's disease.

But what's interesting here, this shows you as you go down. This means worse cognition, losing positive function, losing memory. And if you out here. This is increased number of plaques and tangles. And what is interesting here is you can see that whether or not the same number of plaques and tangles in your brain - here's a high number of plaques and tangles, whether or not you end up on the line of people who have cognitive impairment or not had more to do with whether you had a high purpose in life or a low purpose in life. Again, suggesting this is not just a correlation that having a high purpose in life seems to be associated with whether or not the same burden of injury to the brain is going to manifest itself or not. And that's a rather good start, at trying to assess, is this something that is just a correlation or not?

Also people have gone on and showed that when you look at specific reasons that people die such as strokes, heart attacks and all-cause mortality, there's a dramatic decrease if people have high purpose in life versus a low purpose in life. And in fact, this is the most recent study that came out a couple of years ago, which is again, very dramatic, came out of JAMA, the Journal of the American Medical Association, considered the preeminent medical journal. And what they did here was they measured people's purpose in life and then they followed them for years afterwards. And again, what they found is that here as you go down, these little steps are people dying just over the age of 50 and as time goes on, if you have a low purpose in life, you're somewhere between a two and a half to three-fold increase risk if you have a low purpose in life, which puts you on this curve of dying as compared to people at a high purpose of life.

So all-cause mortality. This is really at the very least telling us that people who have a low purpose in life are at least at the prognostic indicator saying you should be worried about this person. It doesn't mean necessarily that if you can fix their purpose in life that you reversed it, but at the very least, it says that it has significant implications for some of the overall health. And this is just some of the data from Hopkins. This shows you when people come and see me, they're generally depressed. MS has a 50% rate of depression at some point during people's lives, the highest rate of depression of any medical, neurological or surgical disease. And what has been known outside of MS, as it shows here, which is that the higher your depression score, the more likely you are to have a decreased purpose in life.

So essentially what it's telling us is that depression reversibly causes a decreased purpose in life and that correlation is very high. And that's been known. But it is a temporary and reversible cause. So once people's depressions are improved, they go on, they have good return to their purpose in life wherever they are. And a lot of people say, well, maybe it's all religion. And this study actually nicely showed that group people into people who had a low sense of self-concept clarity. So some people are adrift in life and they don't have any connection and the like. For those people, religiosity does help them. So if they have a low self-concept, a low concept of what is important to them, what's going on in their life, that can bring them back up to a baseline. But it's important to know is that for the majority of people who have a solid sense of who they are and the like, a good self-concept, whether or not religiosity is involved or not, doesn't affect your purpose.

So it can bring you up if you're someone who leans toward religion to providing a philosophical framework that adds meaning and organization to your life and that's great. But it doesn't ultimately end up changing your purpose in life for those people who have the sense of self-concept and the like. So it's not due to depression that leads to a reversal cause, it's not due to religion per se, because for people who have a sense of self concept it really doesn't affect whether they're religious or not. So the question is what could be leaking to test purpose in life and how might this affect people's biology that has such profound effects on people's health? Well, the first thing is, I think

this is a useful study. This studies the number of markers of wellbeing. Life satisfaction which is closer to what we think would be happiness.

Optimism. How optimistic are you about the future? Mastery. How much do you think you're in control of your life? Purpose in life and then a positive affect. And what's interesting is that when they then look at what correlated with that chance of progressing to dementia, and remember, that's the big signal here. That was two and a half times more likely to progress to dementia if you had a low purpose in life. Optimism hung in there initially but once you then include in your analysis, whether they were depressed or not, which has a big impact to those people who are optimistic are not depressed. And once you've got beyond that, really only purpose in life is the one that correlated. Meaning it's not just are you satisfied with your life? Do you have a general positive outlook? It's whether you have a belief that your life has a purpose. That's where the money is. By the way, there's nothing wrong with being happy.

I'm not against happiness and I'm not trying to suggest people shouldn't be happy. I'm just trying to suggest for the health consequences. It really is specific to purpose in life. And so what do I think is going on? I'm going to try and persuade you that a lot of this relates to the biology of how the immune system is regulated. So many people know cortisol as the stress hormone, but I will tell you no one's ever gone to the pharmacy to get a cortisol like drug for stress. People, especially people on the phone on this conference, have gone to the pharmacy to get prednisone or hydrocortisone or some cortisol derivative to quiet the immune system down, to bring inflammation down. And so this just showed, when they looked at people's purpose in life, it correlated with those people who had higher levels of cortisol had lower purpose in life and lower level cortisol had higher purpose in life.

Well, what could that be related to? And this kind of shows you the theory, if you will, and I'll show you some more data on this, which is that people who have chronic stress or depression, for instance, that ends up releasing a number of regulators from the brain that go to the adrenal gland that increases cortisol, which is the brake of the immune system. But if you're constantly depressed or anxious, it's like riding that emergency brake and now those cells in your immune system are

going to stop listening. So whereas cortisol was the brake and therefore put people into a state where they were not likely to have the overly [inaudible] response to their immune system, when infected or Epstein Barr virus has been implicated in causing MS by hiding and looking like myelin, well, if your immune system is already primed because it's no longer got the emergency brake of cortisol, you're at an increased risk of getting MS for instance. And we now know there are studies that have shown that depression is a risk factor for getting MS as it is for Lupus and inflammatory bowel disease, and rheumatoid arthritis.

So what does this have to do with purpose in life? Well, people who have a purpose in life, as I'll show you next, how this could relate. In general, the hypothesis, and we have some data - not as much as I would like. People who have a high purpose in life generally their resting cortisol is lower because they have sort of a rock, a sense of gee, this is in my life, this is important to help guide me. And then if they do have something happen, some stress, they tend to return back to a normal resting cortisol easier than someone who doesn't. And the example I give is a couple of years ago I was driving home from the beach, a suicidal deer unfortunately jumped out in front of my car, totaled my car. Thank God myself, and my wife were fine. Terrible for this deer, unfortunately. And my big concern was, okay, once I was sure everybody was safe, I had to get back to Baltimore because I had patients that were waiting to see me, things I had to do during the day.

So I was able to find a car and get back to Baltimore. So it was a setback. I didn't enjoy it. I was glad to have survived it. But now imagine if my whole life was wrapped up in my car. I had one of those muscle cars. I loved it. I put all my money into it. I knew how to tune it. And now something happened to that car you can imagine how devastated I'd be. So again, I think that it's an extreme example of if you have other things, the best things in life are not things and if there are other things that are important and not just focused on something outside of the realm of having a purpose in life, you could see how that might affect your cortisol and stress. So this is an actual study that was done and this is caregivers of people who had chronic conditions. Think of this as maybe MS. This wasn't MS but this is applicable there. Caregivers had increased stress because it's stressful

to take care of people compared to controls who are not taking care of people who have chronic illnesses, stroke, MS, cancer, those types of things.

And these people also, the caregivers who had increased stress, also had increased cortisol levels in general during the day. That led to a decrease of the glucocorticoid receptors under immune cells. Their immune cells stopped listening to that and as a result they had increased markers of inflammation. And again, this goes back to that idea that without that emergency brake, when you have chronic stress and you don't have a higher purpose in life, it puts you in a proinflammatory condition and low and behold Alzheimer's is very susceptible to the immune system and inflammation as is stroke, as are heart attacks. So this is kind of the missing link, if you will. So what does it all mean?

Well, it is not that our lives must have an absolute or objective meaning or purpose, it's that we define such a purpose and work towards it and believe that it exists. That's the key and perhaps care providers are too quick, physicians and the like, to be pill pushers rather than PIL purpose and life promoters. So one of the things I do is talk to clinicians about, Hey, ask your patients how are they doing? What are they doing with their life? How are they adjusting to life under altered circumstances? And again, perhaps Frankle was right, perhaps there is this primary motivational force for survival. How did we survive as this naked ape out in the Savannah of East Africa when there were bigger and better creatures, saber-tooth tigers and the like? Perhaps it was because we had a need to get back to the group to help our fellow man and woman.

So perhaps this has been under-looked and underemphasized. So a dear friend of mine [inaudible] has talked about how do you adjust to life under altered circumstances? She has MS, a progressive form, and so she came up with the three A's. First it is accept. I think there's a universal question of why me, why did this happen to me? What did I do wrong? So part is just to accept that this happened. It's not your fault. You didn't do anything wrong. It's just a bolt of lightning came out of nowhere. Then adapt because once you accept your situation you can adapt and then you can achieve. And I think that a lot of what we all try to do is communicate with others and our

connections to others are what purpose in life is really about. Forgiveness is what connects us to ourselves.

I encourage everybody to go easy on yourself, especially during this time of COVID. People often come to me and say, I shouted that my kids or I was really short-tempered in the supermarket. You've got to give yourself a break. This is tough for everybody. Gratitude. We talked about that. It connects us to others and this purpose in life really connects others to us. So just three last things here, quotes. So doing nothing for others is undoing of ourselves, says Horace Mann. I couldn't find a quote so I butchered one here that had this which is really: our hunger for material cannot ultimately be sated meaning that you can't have enough money. There's always someone who has more money. You can't have a good enough car or a good enough house.

There's always someone who has a better house, a better car. So whereas the simple gratitude from helping another person is inherently rewarding in a way that leaves us feeling wholly satisfied. And then finally, maybe we feel good when we help others because some small part within us remembers and connects to the knowing that we are all one. And what is interesting, and I'll just close with this for people who have questions, that the reason why this rang true to me, is one of the ways we know how to increase purpose in life are the work that [inaudible] was doing with [inaudible] and his sort of treatments where the [inaudible] treatments that are now working on for depression and for people who have had cancer and the life.

And what's really interesting about these treatments is that they kind of often, and the majority of people experienced this, where they suddenly feel connected to the whole world if not the whole universe. And this kind of connection that they have is one way that people have had an increased purpose in life. So that is the sum total of what I wanted to talk about today. Happy to take questions. I think we have at least 10 minutes here despite the fact that you guys are great for hanging in there and making it through that far. So Peter, is there a next step here? How we might progress to having questions?

Peter Damiri: Yeah. And thank you again, Dr. Kaplin. Excellent presentation, a lot of great information.

We did have a number of questions that came in and I'll start with this one. What would be the first step someone would take in evaluating and finding their purpose in life?

Dr. Adam Kaplin: Yeah. So that's a great question. And of course, if I had the answer I'd be a guru, sitting on high and the like. But what I can tell you is this, that just to give you some idea. So the first thing is to tell you that what people have done to try to increase people's purpose in life has included things like, we've survived for millennia as a species by having language and passing down stories from person to person. So a lot of times just hearing from others or sharing your own experiences. So what's really interesting is that just the fact that everybody's shared now on this call puts you into a group of people who are at a significant advantage because the reason why those studies were done in Alzheimer's disease is because there was a huge protective factor that they saw for people who had certain characteristics.

They went to talk. They were connected in their communities. They weren't hermits living off by themselves. They were engaged in helping other people. So finding ways and what we tell you, lots of people need help these days. So finding ways to go out of your way and help your fellow person, fellow man and woman can really go a long way. Now everybody has to find out what their goals are. One thing I could tell you as well is that a lot of times people who have MS or other kinds of conditions that nobody asks for, sometimes it means sort of reshaping your goals. So for instance, one woman at a conference that I went to when I talked about purpose in life, she said, Dr. Kaplin, my purpose was I was going to travel once I was retired and I can't travel and walk up hills and mountains like I had planned. What am I supposed to do now?

And through talking to her, she sort of realized that one of the things she wanted to do was to travel still and instead of being able to climb mountains, what she could do is go out and figure out how to chart a course for other people. What places in Italy, she really wanted to go to Italy - are amenable to people who have disabilities, are accessible? So she went out and started writing a book about accessibility of various locations. The chances are that you have to kind of adjust to lie

under altered circumstances and sometimes realign your goals. So I don't have a secret answer but each person may have to find their own way of reaching out and making a difference for others.

Peter Damiri: That was very insightful. Thank you. Another question. What advice do you have for care partners and would you recommend PIL for care partners as well?

Dr. Adam Kaplin: Absolutely. I'm glad you asked this. I can tell you that without any question, one of the things that I do when I see people with MS is I always take, sometimes it only takes 10 minutes or 15 minutes, to check in with that care partner because it's hard to be up a creek. But if you use your paddle as you're up a creek you're in real trouble. So what do I mean by that? Well, what I mean is people who are the care partners almost universally have this survivors' guilt. Well, I'm the one who can walk around. I don't have any of these hidden symptoms. I'm in good shape. And so as a result of that they say, but I can't possibly go off with my girlfriends and go have a manicure, pedicure. I can't go off with my male friends and go drinking at the bar because I don't want to leave my loved one at home alone, that's cruel and unusual punishment.

And what they need to understand is that you do have a purpose, you're helping somebody else. But just like when oxygen masks drop down and you're in a plane, you've got to put it on yourself first because you're no good anybody else if they pass out and you pass out and nobody makes it. But if you have enough oxygen you'll be able to make sure everybody gets along and does well. So absolutely for care partners. You're already in a situation where you are helping somebody in the family and helping organize things, but I really strongly recommend that you realize that you need to get out of there at least once a week and go get some oxygen. And that's not for yourself. That's for your loved one and for your family because if you're not recharging your engine you're going to be in a tough place. So really that's one of those cases where care partners need a little pendulum swinging in the other direction. You're getting plenty of points for taking care of your family, from your loved one but you're often not doing enough to take care of yourself.

Peter Damiri: Sure. Absolutely. Great advice too. There were a couple of questions about Alzheimer's, as you mentioned. The first question is do MS plaques that cause cognitive decline increase the risk of Alzheimer's?

Dr. Adam Kaplin: So that is again a great question. And here's what I can tell you. I mean, if there is a silver lining here, this is maybe a silver lining. Which is to say, I never say never or always in medicine, but it is extremely unlikely that people with MS will develop Alzheimer's disease. It doesn't mean by the way having MS can't affect people's cognition. And so it's not like, gee, this is a great thing that you'd want everybody to get as a protection from Alzheimer's. But having said that, many of the newest treatments being developed to enter the market are antibodies that bind to these plaques in the brain and ways of having an immune response to the plaques from Alzheimer's. And what's interesting is, and some people are just now starting to study this, as to why people with MS are so rarely in a position where they develop Alzheimer's disease and probably it's because having your brain have this immune system that's patrolling it and when active attacks various proteins in the brain, amongst them this immune system is probably helping to clear a lot of this Alzheimer's plaque away. So I can't say you have zero chance but the chances of getting Alzheimer's with MS is extremely low.

Peter Damiri: Well, that's great information. And second question around Alzheimer's is just generally how early do you need to exercise and practice purpose in life to avoid the signs of cognitive decline or Alzheimer's down the road?

Dr. Adam Kaplin: That's a great question. What I can tell you is if you look at that study. By the way, again, one of the things that MSAA is so great about is not just holding these opportunities to provide information for people but also getting it out in print. And so MSAA is going to be having a paper following this up, I don't know, perhaps in a month or two, a couple of months, Peter knows better than I, on the topic of purpose in life. So if you have questions or you say, gee, I can't remember this, that, or the other. It's coming to a Motivator magazine near you, sort of a synopsis of much of what we covered today. But it really is the case that from the study, it was six years, right? I mean that was a six year study of people who had mild cognitive impairment.

And as you can see, roughly 60, 70% of people six years into it developed Alzheimer's. So the earlier the better and now it turns out that we know that people who were doing Sudoku and engaging their brains from even a young age from studies done in nunneries by nuns who kept these elaborate entry books when they came into becoming nuns and then would look very much later what their chances were of Alzheimer's. So even from young ages it's a use it or lose it proposition. But certainly if you can intervene while people still have a significant amount of their cognition it's going to be much better possibility, assuming that this is a cause and not a correlation, than waiting until someone has, the further along they are the harder it is with any treatment to try to intervene with Alzheimer's.

Peter Damiri: Great. Thank you. So you've mentioned some of the activities in your responses, the lady climbing the mountain and traveling, and they sound great, but there were questions around people wondering when and how they could find the time to dedicate toward this and even whether they feel guilty having some self-care activities with so much going on in their life with work and family balance? Can you address some of those concerns as well?

Dr. Adam Kaplin: So these are different. I just want to make sure I don't fall into the category of apples and oranges. So what I'm talking about for care partners or care givers, it is to make sure you don't suffer this problem of thinking, oh, gee, I can't possibly go out and do the things that I'm able to that the person I've tied my wagon to can't because of fatigue or what have you. And I'm not saying, just run away, I'm saying, at least once a week make sure you go out and recharge your engine. And we know that the rates of depression among care partners are higher, that care partners don't take care of their own health. They don't get normal cancer screenings. They don't in general do those things. And again, the explanation is, gee, the reason why you hear at every single plane is when the oxygen mask drops down and you have to put it on yourself first is because truly you have to find the time for yourself because you're no good to anybody if you've exhausted your resiliency and your temper and your patience are frayed then you're no good to anybody.

So that's kind of one side of things. With regard to finding time. Finding time is one of those things where, as one of my patients says, you're either busy or you're dead and it is a matter of prioritizing.

But I can just tell you that as we learn more and more about purpose in life, that it's kind of like just trying to earn money when you're younger and not do anything with it, all because you're saving it for old age. And then you find out in old age you can't take it with you, and you get hit by a bus crossing the street. So you've got to make time and got to prioritize things as you're going through life. And one of those things that I would submit because it has such a potential profound impact on people's health is you got to make time for finding a purpose and having the belief that your life has meaning and purpose. And I know life can be incredibly busy, my life is incredibly busy. I'm not trying to be a hypocrite at all, but it is the case that for the things that are important, children, parents, our significant others, we find time no matter how busy we are. And this is just something I think we afford not to find time for.

Peter Damiri: Yeah, absolutely. And one last question, a person wrote in talking about how with MS they were unfortunately not able to work anymore and had other losses in their life and wanted you to speak to adapting our purpose with MS as such a progressive disease.

Dr. Adam Kaplin: Yeah. So again, thank you for bringing that up. This is one of the hardest topics because unfortunately for those of you who are in that situation, it's tough and I'll address that in one second. For those of you who are not yet in that situation, I will tell you that there is all too often encouragement to say, hey, you had an exacerbation, it's going to take a year to recover. You should really go on disability. And I just want people to be aware that disability is disabling. It's just very hard when you're being paid not to do any work to then say, I'm going to go start doing some work and lose all the money that I have. It's just a very difficult situation to be in. I do think that it is important to realize that for many people who literally it's the stress and they can't do what they're doing.

It's causing all sorts of negative health consequences. For sure there are plenty of situations where disability is advantageous but then you're going to find yourself in a position where you still have to find whether it's volunteering. One of the things that we began to do to look into this, and we didn't unfortunately have time to finish this up, but we did have some interesting initial findings before this website got taken down where we had people going to an MS support website and then we were

assigning people who had MS for a while to then mentor people who were newly diagnosed. And you'd be shocked at how much you know just from insurance and adjusting to life and dealing with all of the concerns about what medicines and all of this stuff. So sometimes it's as simple as going to a MS support group and just talking to some other people and realizing how much knowledge and wisdom you've accumulated and how much difference that can make to people who are newly diagnosed and terrified.

Peter Damiri: Yeah, absolutely. That's great advice. So that ends our question portion. Before we close with our thank you I first, again, want to thank Dr. Kaplin for his incredible information and insights and also ask Dr. Kaplin if you just wanted to provide a take-home message for the folks who on the line today.

Dr. Adam Kaplin: I think my take home message is this, which is that each person has to find their own purpose. But that doesn't mean you can't share it. So again, there are opportunities through MSAA, through the forum and the like, and my strong advice is as you find things that are helpful, as you share things as I see people are sharing things in this participant feedback, please help put that on the website, enter those into the MSAA website and the like and in response perhaps to this article that's coming out because any physician who is being honest with you will tell you that most of what we learn is from you guys and we just listen and we pass it on to other people. So thank you for your time tonight and I encourage you to share the wisdom that you've already had and listen to your fellow participants. So thanks you for your time.

Peter Damiri: Great. Thank you. Well, that does conclude tonight's webinar which, as a reminder, will be archived to our website in the next few days. Once again, I would like to thank Dr. Adam Kaplin for his time here tonight and helping us understand the truly fascinating topic that can make such a positive impact in all our lives. I also would like to thank Biogen and Genentech for supporting our new virtual display hall. As mentioned, MSAA has additional programs planned for the month of March. So please visit our MS awareness hub at [mymsaa.org](http://mymsaa.org) to learn more. And as Dr. Kaplin mentioned, our national magazine, The Motivator, is dedicating our cover story to purpose in life with interviews with Dr. Kaplin and other healthcare professionals and that probably will be out by

mid-April. So please keep an eye out for that, both in print and digital on our website. And finally, we asked you to take a very brief survey that is coming up next. Your feedback is very important to us and will secure funding for future programs. So on behalf of MSA and Dr. Kaplin, thank you so much for watching and please stay safe.