Introduction and Dr. Beaberu2019s Background

Dr. Brandon Beaber, thank you so much for being part of the MS and neuroimmune Summit. I'm going to read your bio. and then let's get started. Brandon's a board certified neurologist with subspecialty training in multiple sclerosis and other immunologic diseases of the nervous system.

and he post videos about MS every Wednesday on his YouTube channel. And he's got a great book, resilience in the Face of Multiple Sclerosis, which is free on Amazon.

It's about five people with our MS who live incredible lives. and I think it's important for everyone who's listening to know that just because you have MS It's not a death sentence.

You can still have a really great life. And he has, many publications on MS And you could also follow him on Twitter. so, Brandon, is everything that I missed in all of this?

That's about everything. I appreciate that, and thank you for inviting me. You know, let's talk a little bit first. I know that you're prescribing plenty of disease modifying treatments, for your patients, but beyond the dots, what are you doing for them?

Well, we strongly believe that MS likely has something to do with changes in modern lifestyle for a lot of reasons. One, because MS is definitely becoming more prevalent in some countries, like in Syria and India and Mexico. MS used to be quite rare, and it's now becoming much more common.

We also know there's tremendous variability in the prevalence of MS throughout the world in Cuenca, Ecuador. The risk is only 1 in 25,000.

Lifestyle Factors and Smoking Cessation

But in Syracuse, New York, it's 1 in 222, a roughly 100 fold difference. And we strongly suspect something is going on and that we're changing our diet.

We're becoming more sedentary. We may be more exposed to certain environmental toxins. We're getting less sunlight exposure. We have more vitamin D deficiency.

Maybe we're too clean. We're not seeing parasites when we're young. Now some things obviously we can't change. We're probably not going to go back to walking around barefoot and drinking contaminated water.

But we can definitely change our diet and our lifestyle. So one thing would be, if you're smoking with M. S., you should stop smoking. There's clear evidence that smoking increases the risk of getting MS and also worsens the prognosis of MS by a modest amount.

Let's stop a bit, on the smoking issue. How many of your patients are smokers? I would say the minority just kind of demographics of where I am in Los Angeles, maybe 10% or less.

Many have quit smoking after getting a diagnosis of MS, though. If so, if they didn't quit and they're still smoking. what do you do to help them stop?

Well, as George Jelinek points out in his book Overcoming Multiple Sclerosis, the most common successful method of quitting smoking is just quitting. So you pick a quit date.

You tell all your family and friends, I'm going to quit smoking on this day, February 10th. Why not? And then you

get rid of all of your lighters and cigarets, and then you just quit.

Now, of course, that doesn't work for everyone. And so if you're really struggling, you've relapsed multiple times. there are aides that can help people, such as the gum and the patch, just to help with the physical symptoms of addiction.

But of course, the number one thing is being very dedicated to quitting. Okay. So everyone who's listening. So, stop smoking. super, super, super important for you, your neurologist.

I'm curious, do you prescribe any of those things for your patients, or do you send them to primary care to get prescriptions for those things? You know, I'll prescribe the patch.

people, if you also have. Well, depression, the antidepressant B propionate Wellbutrin can be helpful. It's kind of an activating antidepressant. Also used in MS And, you know, there's some newer things that I'm not as knowledgeable about, but I will prescribe basic things.

If people are struggling to quit. So absolutely everyone listening. Talk to your neurologist. they'll be supportive. And if for some reason you can't get in to see your neurologist because there aren't enough of you around.

then go make an appointment with your primary care provider. because they also can help you, quit smoking. so, no, I'm not, ask you about diet.

Diet Patterns in MS: Vegan, Paleo, and Keto

how many of your patients, when they come see you or have already made some diet changes? I would say a lot. You know, I'm a subspecialists. So a lot of my patients were diagnosed by someone else.

And even faced with any serious disease, whether it be a stroke or multiple sclerosis or anything. You know, people are thinking more about their health and they're very motivated.

They may not be doing something specific, maybe just exercising a little bit more, avoiding processed food. But a lot of people make some changes. The challenge is sustaining it over a long period of time.

And what are the most common, diet changes that you see your patients making? Well, Dr. Wahls, as you're very well known out here, so many people, you know, follow the Wahls protocol.

Some more strictly than others. veganism is pretty popular where I am in Los Angeles. the ketogenic diet and intermittent fasting is becoming more popular, I would say.

I would say those would be the three most common patterns that I see. Some kind of paleo type diet, a whole foods plant based diet and a ketogenic diet.

And of course, you know, we want more evidence as to which is the best, which is why I think your research is very important. You know, it's difficult to prove these things.

And the better data we have. Yeah, you know, the better advice we can give to our patients. So I appreciate everything that you're doing with that. Thank you.

I really appreciate that too. Let's talk about the vegan vegetarian diet because people don't hear me talk about that. very often in your patients who are doing that.

Can you tell us a little bit more what that that looks like? Well, the basis of this is from an epidemiologic perspective. There seems to be a link between dairy consumption and saturated fat consumption and the risk of illness.

Now, there are many confounding factors. This isn't the best type of evidence, but it's certainly something, you know, a lot of people know about Dr. Roy Swank in the late 1940s.

He looked at the rate of abs in different areas of Norway and in the more inland areas where people consume more milk and beef. There were higher rates of MS.

In the more coastal areas where people eat more fish, there was less air mass. And so that's kind of the basis of this. He did a study where he told all of his patients to go on a low saturated fat diet, and he found that the people who were compliant with the diet tended to do better.

Now, of course, there are biases in this because he didn't understand how to measure saturated fat at the time. So we now know that all natural foods have a combination of saturated and unsaturated fats.

So he wasn't quite measuring it properly. And of course, there's a tendency for people who are doing well to stick with a diet, maybe people who are doing poorly to come off of it.

But he was able to document a difference, and he certainly had many people who legitimately had M. S. and had it for a long time and were doing well. Now he's not alive anymore, but I've actually met some of his colleagues.

For instance, Dr. Dennis Burdette, who is long time chair of neurology at Oregon Health Sciences University. And he told me, he said, hey, Dr. Swank was a little bit of a weird guy, but some of his patients really, legitimately had Ms.

and were doing very well. I don't have a lot of patients who are strictly. I do have a few. It's hard for me to say from personal experience. I have one patient who's a long time vegan and she has relapsing MS and she's had relapses, but she seems to recover well from them and has low disability.

but I don't have a lot of patients who are vegan or strictly plant based. you have some people, doing the ketogenic diet. What? are they doing modified Atkins or.

a hero, do you know? Well, I think ketogenic diet has become really popular for weight loss. so I have some patients who are doing it more for that than a treatment of MS I think many people wouldn't call it the Atkins diet any more just because, you know, he passed away a long time ago.

He's not popular anymore, but a lot of people, you know, are keeping a quite strict ketogenic diet with very low carbohydrate consumption and also doing an intermittent fasting, some of them even using the urine keto strips.

And, you know, certainly some people have great results in terms of weight loss control, type two diabetes, you know. Yes. You know, in in my clinical practice, we do have people, some who are vegetarian.

Pregnancy, Breastfeeding, and Family Planning

So yes, we support them and we have people, particularly, folks who are overweight, insulin resistance, type two diabetes, who are interested in doing the keto diet.

And I, certainly support that as well. so, now I have another interesting question, sort of nutrition related. breastfeeding, do you have patients who've been pregnant, and, who've elected to breastfeed afterwards?

have you how do you help your patients navigate when they get pregnant, being pregnant? And then, what they how they decide to feed their infant afterwards?

Yeah. I mean, this is a common issue. The average age of diagnosis of MS is 30. And, you know, there are a lot of young women who get diagnosed and they want to have children, doctors.

Back in the day, they used to say, don't get pregnant. It's bad for MS but that's totally untrue. It turns out naturally

there's a reduction in the risk of relapses during pregnancy.

This is true of many autoimmune diseases. We think it's sort of a natural for regulation of the immune system, because the fetus is sort of a foreign organism with different antigens than you.

And then after delivery, there is a temporary increased risk of relapses, but the overall risk of relapses throughout the year, nine months of pregnancy and three months afterwards is about the same.

It turns out that women with MS who have children actually have slightly less disability on average, probably just due to reverse causation that women who are doing worse choose not to have kids because they're already struggling and stressed out enough.

But certainly women can have kids in terms of breastfeeding. there's actually a study done by my former fellowship mentor, doctor Anita Langer Gould, and she found that women who were exclusively breastfeeding, the only source of nutrition to the infant is breast milk.

They have a reduced risk of relapses. Now, this is difficult to do in the modern era if women are trying to go back to work, unless they're pumping a lot of breast milk and basically after breast feed enough to suppress ovulation, and this may be beneficial in Ms..

So typically, if a woman is stable and doing well and hasn't had recent relapses or MRI activity, we usually don't tell women to stop breastfeeding just to start disease modifying therapy.

Our, personal experiences with some of the stronger medications like the B cell depleting drugs Rotax and Adrienne V seem to okay. This, a lot of people seem to have this prolonged benefit where they may not need medication even for a few years.

And so it's certainly safe to get pregnant, breastfeed and worry about medication later afterwards. okay. So this is really fabulous. And, branded, by the way, we did a special project on breastfeeding, in Ms., asking, what the attitudes were by the neurologist.

primary care, family medicine, obesity, etc.. and we'll be presenting that, I believe, at and the consortium Ms.. Centers. And then we did a survey, to patients and patients, young women who are wanting to conceive.

They really want to have this information. So I'm, glad that you're, on top of supporting, breastfeeding, for these moms and everyone who's listening, I, this was a really important message that, yes, you can still, if you want to have kids, it's still possible, and that, it's possible then after delivery, to breastfeed.

So. Yeah. And most of my patients who have children, you know, even if they do have, you know, some amount of disability from Ms.. They're happy that they had children.

You know, people generally don't regret having kids if that's their personal desire. Of course, from the perspective of the doctor, you know, we're concerned about the risk of birth defects with certain medications.

You know, particularly some of the oral medications in particular. Abajo you know, it can be to the genic, cause birth defects, you know, so we don't want people to get pregnant on accident, you know?

So definitely discuss it with your doctor and come up with a plan in advance. So I think that's a very important message. So everyone listening, it's possible to get pregnant, but talk to your neurologist, your specialist who's managing your disease modifying treatments and explain that you you're you would like to have kids.

So, why don't we talk about, dads, potential dads, you know, is the fertility of the man impacted? but one first by having Ms.. And then second, if they're if they are taking disease modifying treatments.

Generally speaking, no, for both, women and men, you know, we don't think Ms. reduces fertility and nor does it

cause a specific problem during pregnancy.

I mean, this is a very common question. You know, women always ask, can I get epidural anesthesia if I want? The answer is yes. Do I have to have a C-section rather than a vaginal delivery just because I have Ms..

The answer is no. So generally speaking, you know, there are no special considerations. Of course, if you've received an immunosuppressant medication, you should tell your gynecologist.

For men, of course, there are even fewer issues because there isn't really the risk of birth defects. There is one exception to that the drug, a Baggio, actually can get into rat semen.

And so there's some concern that if your wife is pregnant, can you have sex with her without a condom while taking a Baggio? And there's some preliminary data that this may be okay, you know, but definitely talk to your own provider. There may be potential risks there.

But for men, you know, there should be no reduction in fertility. There are some exceptions. You know, there are some medications that aren't routinely used for Ms., such as cyclophosphamide or a strong immunosuppressant medication, or the conditioning regimens with, hematopoietic stem cell transplant.

Certainly there are risks of infertility with these types of medications, but most standard disease modifying therapies should not cause infertility. Now, everyone who's listening, there's another area that I want to, draw your attention to.

and we discovered this during a clinical trial. As people improve their diets, fertility improves. So we did find that, we had some some of our participants improve their diet, in our clinical trials.

And they had been told that they were infertile, so they were not using any contraception. And then they have to notify us. Well, I got pregnant. and so, fortunately for us and for them, they were thrilled.

but that did mean that we revised our consent, because that happened to us three times to say, even if you've been told that you were infertile while you're in our clinical trial, please use contraception.

So everyone who's listening, if you've been told you were infertile and you're inspired by, what doctor B was saying and what you're learning from everyone else, that you want to improve your diet and you actually go out there and improve your diet.

Please use contraception. and, and if you want to have kids, talk to your, specialist, because what I don't want to have happen is that you're taking a great DMT that's doing a good job by you, but you didn't realize is associated with, with risk for birth defects.

So do improve your diet. If you've been told you're infertile and you want to have kids, still go talk to your neurologist or specialist and say, you know, I'm improving my diet.

I am hoping to have, kids, and make whatever adjustments, should be made. into that end. What what kind of doubts? If someone came to you and said, you know, I really am wanting to have, children and I'm going to work on really improving my diet, doing all the great self-care things that you want me to do.

Doctor Bieber. what kind of suggestions would you have for them in terms of the DMT? Well, this is a controversial issue and an individual issue, so people definitely have to talk to their own doctors.

but, you know, many of the disease modifying therapies, they either are known to cause birth defects or they are not adequately studied. And so we really try to avoid them.

For instance, just recently I saw an accidental pregnancy registry of the drug pon bori, and they didn't show an increased rate of birth defects compared to the general population.

But there were like 70 pregnancies, you know, so we just don't know, you know, so many of these medications, you know, doctors are very conservative. We on the side of caution. Yeah.

The the medication Caterham or Copaxone, the top the older injectable medication is definitely safe in pregnancy.

Returning to DMT After Breastfeeding

It has very good data, but it's not a very effective medication. So it's not the best option for many people. One strategy that's been used is using the B-cell depleting drugs, such as Rotax and AB vis.

These medications, even though they have a short half life, the half life of vertex in that is three weeks for OTC visits, four weeks. However, they have this prolonged effect and the idea is that it takes a long time for the bone marrow to regenerate the B lymphocytes.

And so they seem to protect people from many months or even years in some cases. You know. So some doctors will recommend take this drug, wait a little bit just in case.

Even though these are large molecules that generally don't cross the placenta early in embryonic development and then try to get pregnant and then just hold off on medication.

And we find these medications don't have a rebound effect and anecdotally seem to prevent attacks during pregnancy and even during the postpartum period, even though the effects should have worn off.

And even if the B lymphocytes have come back. So, I've sort of summarize, what I think I'm hearing is improve your diet, your self care. If you wanted to, have kids, talk to your neurologist.

whether a B cell depleting medication is appropriate for you, and then negotiate what is the correct, time that you should wait to start trying to conceive?

yeah. And there's a lot of data on these drugs. And similar strategies have been used with other drugs, such as Maven, Clara and Trotta. But there are definitely other options, like, generally speaking, you know, a young woman who wants to have children can find a way that's going to work out without causing a major risk of an Ms.

relapse. Okay. Well, this has been really, really wonderful. And thank you so much for joining us today. I hope you found our conversation insightful and engaging.

Now, if you're a summit purchaser, stay right here because we're going to dive even deeper into this wonderful conversation. And if not, click on the button below or to the side.

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And let's dive right in. Okay, so, the young woman was successful. She had her, infant. She's breastfeeding, and at what time should she get back on her DMT?

From your point of view. Well, there are some women where maybe I'm concerned about them. Maybe they have very aggressive Ms.. Where I would want them to start earlier.

You know, and it is possible to give certain disease modifying therapies while breastfeeding. It depends on the individual agent. But I would say for most people, you know, maybe they they've been stable for a period.

Exercise, Recovery, and Prognosis

It's okay to breastfeed for a period. So I would say the most common recommendation I would give is just to continue breastfeeding. There are other benefits for breastfeeding.

You lose the pregnancy weight, good for the infant, good for bonding, you know, and that probably outweighs the need to start on a medication right away.

So the most common recommendation would be to just not take disease modifying therapy and wait until you're done breastfeeding. And for most women, that's something like 3 to 12 months.

Obviously, if you're a woman who wants to breastfeed for 3 to 4 years, then, you know, maybe it's a little bit different. But I would say generally it's safe to breastfeed for a sort of typical period of time.

So 3 to 12 months, sounds great. and if they want to go beyond that, you know, just talk to you a well, just, I'm sure this depends in part on what's going on in terms of relapses, symptoms, and if as long as there have been no relapses, you're probably doing surveillance MRI during that time period.

Yeah. And, you know, we try to avoid gadolinium dye and women who are pregnant or breastfeeding, you know, but it's considered to be safe certainly to do an MRI without contrast.

And a woman who's breastfeeding usually we don't do it during the pregnancy just because the rate of new lesions and relapses is fairly low. Okay. Well, this has been, really a great, conversation. So, multiple kids are probably an okay thing, too.

So if someone decides, you know, I have one. That was so much fun. I want to come back and have another one right away. has that ever happened to you?

That that's happened to me? I mean, it's sometimes, you know, between kids, that's a good time to maybe receive treatment, particularly if it's like a longer acting treatment.

You know, that has a prolonged effect. Most people don't want kids back to back just because it's so overwhelming to have an infant. But, yeah, I've had some patients who are treated for a while.

They've had 2 or 3 kids and they've done okay and gone back on treat. And, you know, because people want their kids to be closer in age. Sure, sure. So, let's move on to exercise.

Do you have, thoughts about, exercise for your patients? And, how do you encourage that? Well, back in the day, doctors used to think that exercise is bad for Ms..

And the reason is because some people with exercise can experience a temporary worsening of symptoms. This is known as Utah's phenomenon. Worsening of symptoms in demyelinating diseases due to increase in body temperature.

But we know that no new damage is occurring. We believe that people have old scar tissue, and it's just more difficult to get information through that damaged tissue temporarily.

When the body temperature is higher. In the long run, exercise is good. And there is there is a lot of research on this, a lot of different types of exercise, practically speaking.

Probably the best is whatever exercise you like doing and that you're going to sustain on a regular basis. You know, if you hate running, you know, it's probably not going to be a good form of exercise for you.

And if you like swimming or cycling on a stationary bike, that may be better. Some people like swimming just because you stay cool. You know, I live in Los Angeles may not be practical in some areas, and some people like cycling on a stationary bike in an air conditioned gym just in case they have like some subtle balance problems.

They're a little bit more stable there, but really, whatever you enjoy doing and you can do several times a week is probably the best for you. I have one patient who had very aggressive relapsing Ms.

and was actually using a walker and managed to recover all the way to the point where they actually beat me in the Los Angeles Marathon. They ran a faster time than me.

We weren't running the same race, so they didn't go by me, but they ran a faster time on the same course. So incredible recoveries are possible. And, this is certainly one example.

I want to dig into that story just a little bit more. So Lydia Walker managed to recover. Can you give us a little bit more detail as to what this person was doing in terms of maybe their DMT, their self-care, and why do you think they were so successful?

Well, this person I, I don't want to get too many details because it gets a little bit identifying Iris, but, this is a younger person, and they had very aggressive relapsing Ms..

And, you know, on an MRI scan, we give gadolinium dye. And when there are active lesions, the dye can get in and cause the lesions to light up and enhance.

And, you know, many people may have 1 or 2 enhancing lesions. And this person had something like 50 enhancing lesions. Just incredibly obsessive. Ms.. And, you know, they were treated with steroids.

They improved somewhat. But by the time they saw me in the outpatient setting, they really were very embarrassed. That had a significant amount of weakness, had a lot of problems.

And this is not the typical person we see with Ms.. You know, who's young, a lot of people, their first symptom is not that severe. You know, I might see someone who had optic neuritis and they had 20 vision, 20, 30 vision in the right eye.

And they're improving. And, you know, but the MRI scans showed they had that. So it's it's not so common to have really aggressive Ms.. they were treated with a very strong disease modifying therapy.

They were treated with cyclophosphamide, which I mentioned earlier, which is not a standard treatment because it's very toxic. It can cause infections and hemorrhagic cystitis, inflammation of the bladder and even infected with but they had a great response and they sort of slowly improved.

And then, you know, they started exercising. And this is someone who is fairly healthy overall. And they eventually got to the point where they took up running.

And this happened very slowly over several years. You know, even after 12 months of diagnosis, I would say they still had some significant problems. so a lot of it really wasn't the medicine.

It was just the training free exercise. They were able to only improve. So I'm curious, really, do you have an idea what you're eating? I can't imagine is the standard American diet.

They were probably my a healthier diet choice. Yes. I mean, this person was not keeping a highly specific diet, but definitely trying to eat like, you know.

Much healthier diet. Hamburgers and avoid processed food. But they did not have like some specific regimen. Okay, everyone who's listening and. People do improve from attacks all the time.

You know, certainly there are many people who have dramatic improvements. And this was just unusual because usually people don't run marathons after they've been walking with the walker.

So this was is this was. That's really unusual, very unusual. But everyone who's listening, I, take a lot of hope from the story that it took a long time.

he didn't have a particular specific diet plan. He just worked on improving his diet and improving his exercise and

understood that it's, a long, long journey.

and to that end, Brandon, I want to tell you that I am jogging on my treadmill now, too. I'm not ready to do a marathon yet, but, you know, I am. I am so excited that I can jog again.

who knows? perhaps it had been my dream when I was young doing marathons. I want to be the white haired grandma passing the youngsters, doing marathons.

and my kids say, you know, mom, you should not give up on that dream. So, you know, maybe I need to up my my game here a little bit. Yeah, well, I can't run marathons anymore either, so I need to get back into shape, too.

So you're not the only one. okay. Well, I feel a little bit better now, so, let's let's, explain how you decide. someone has a, a mild, not so alarming MRI and an aggressive, alarming MRI.

So I'm going to really do my best to convince them to take a more aggressive, treatment plan. Well, the truth is, we can't predict the future. in general, on the average people with MS who have optic neuritis as their first symptoms tend to do better than people who have transverse myelitis, inflammation of the spinal cord.

So people who have a lot of bladder problems and weakness of the limbs tend to have a worse prognosis. You know, people who have progressive MS on the average do worse than people who have relapsing MS You know, progressive MS is the form where people have kind of a gradual, insidious worsening of symptoms over time.

MRI Findings, Risk, and Key Takeaways

It's known that when people have MRI scans, if they have a lot of atrophy or shrinkage of the brain, that tends to be worse. Or if people have a lot of what are called black holes, which is on T1 sequences of the MRI, the lesions appear dark.

That's more correlated with damage to the axons or underlying nerve fibers. Correlating with autopsy studies, we know that if the spinal cord is shrunken, that's generally a bad sign, and lesions in certain areas, such as high up in the cervical spine and at the cervical medullary junction, the junction between the brain and the spine tend to be associated with worse disability.

But these are just averages. and we also know if people who acquire sort of a moderate amount of disability earlier in the disease, like, for instance, it's hard to walk long distances, they're more likely to have major disability later in the disease.

But there's quite a bit of variation from person to person. Okay. So, I think neuritis sounds like that's a good thing. As opposed to transverse myelitis, spinal cord damage, is a problem.

location, gives you some clues. is there anything about the numbers of, lesions? So when the doc, puts up the MRI, does it matter? Is it five? The magic number? Ten.

The magic number that really makes you concerned? three. Not really. Not really. Okay. Lesions are most visible on T2 sequences. And, you know, people have looked at like the number of T2 lesions, and it doesn't correlate that strongly with disability.

And the reason is probably because you can have a lot of T2 lesions. But there's a lot of re myelination and not a lot of atrophy, not a lot of black holes.

And people sort of recover and they do okay. So there's not a very strong correlation. Now, my personal experience is when someone has a very low number of lesions and nothing in the spinal cord, you know, they often do better.

So I saw a patient, I believe, yesterday who, I don't remember exactly, but had some kind of, like, brainstem

relapse with double vision, but really just has, like, three lesions on the MRI of the brain.

Very small. Nothing in the spinal cord. You know, my experience is those people tend to do better, but I can't really predict is that is the true thing?

I would say, okay. Brandon, this is really been marvelous. you are, Just wonderful. I could chat all day, but, Well, what would you say is the most important thing you'd like people to take from our conversation?

Well, I think it's important to be optimistic. And I think it's a realistic optimism because, as you said, many people with MS live a great life. You know, there are people with MS living a better life than you and I or I should say than me.

and, you know, also, you know, lifestyle can make a difference. You know, even if you don't have, like, a specific plan, you know, it's almost certain that trying to make positive changes in your lifestyle will reduce your risk of other diseases, will give you better energy and overall better lifestyle satisfaction.

And it requires like time and effort. And, you know, periodically you have to sit down and think about it like, what is my diet plan? What is my exercise plan?

If I'm smoking, what is my plan to quit smoking? And you have to go back to it because it's so easy to, you know, have good habits and then go back to your old habits and not think about it.

So you have to periodically remind yourself. Okay, Brandon, how do people find you, your YouTube channel and all of your social media stuff? well, I'm on YouTube.

I make informative videos about MS Once a week, you just search my name and I post about MS Research on Twitter. Same thing. My handle is my name. Okay.

Well, this is just been excellent. Thank you so much for all that you do. And I will let you know when we cross the 156. So we have all of our, people enrolled.

Thank you for having me. And I look forward to seeing those results.