



# PODCAST

## *Intermittent Fasting and MS*

Episode 170 – Podcast Transcript

[(0:00)] [Intro music playing]

Stephanie Buxhoeveden: Welcome to the Can Do MS podcast. I'm your host, Stephanie Buxhoeveden. I live with MS, and I'm also a clinician and MS researcher. This is episode number 170. Today, we're excited to welcome our guest, Dr. Samantha Roman, who's an MS neuroimmunology fellow at Johns Hopkins. Sam also lives with MS, and you can find her on social media, @thatmsdoc, welcome Sam. We're so excited to have you here today.

Dr. Samantha Roman: Thanks. I'm happy to be here.

Stephanie: So, some of our listeners may already know you from social media, but can you tell everyone a little bit about yourself and your connection to MS?

Samantha: Sure. So when I was a medical student, um, at Johns Hopkins, I've been there for all of my medical training. I was in the third year, kind of deciding what I wanted to do, and I liked a lot of different areas of medicine. I did like neurology. I thought it was really cool, you know, that the brain kind of just controls everything, and during that year, I also started to have symptoms, um, and it took about a year, but I ultimately was diagnosed with MS, and I had elected to take some time to do research... a diet research with Dr. Maria at Hopkins, and that's kind of when I decided that this was the area of medicine that I wanted to practice; and so that was kind of... that's-that's the beginning and the end, and I'm so... I was, you know, really personally connected to the area of neuroimmunology and MS, and I'm still really passionate about the field. Nothing has really changed if anything, I've gotten more interested in over the years.

Stephanie: That's awesome, and I mean, I also specialized in MS because I was diagnosed in the middle of graduate school and was already specialized [(2:00)] in neurology, so very similar, um, and it's really such an honor to have you here to share your perspective and hear about this area that you're so passionate about, and I know you and I have talked about this briefly, but we both know firsthand that lifestyle has a huge impact on our overall wellness living with MS and so today, we specifically wanted to talk about diet and... and intermittent fasting; but first, can you tell us a little bit about the gut-brain connection and why it matters in MS?

Samantha: Sure, so there's a lot of immune tissue essentially in the gut, and we've just in the last decade, I feel like, really are scratching the surface of that connection. Um, we know that... that basically the bacteria in our gut kind of educates our immune system. Basically, telling our immune system like, what is and isn't safe, what should be attacked and what shouldn't be.

Uh, we know that, you know, for example, obesity in childhood increases the risk of MS, and that obesity, in general, is associated with different gut bacteria than people who aren't obese, and so there's just... there's a lot of complexities but there's clearly a connection there between gut health, gut bacteria, and immune system regulation; and one thing I thought was really interesting actually I just got back from the ACTRIMS conference last week, um, which as you know is one of the biggest MS-specific medical conferences in the country; and, um, you know there was a study that had read but kind of...

They jogged my memory when they were speaking about it in one of the talks, there was a really interesting study where they took gut bacteria from MS patients, they put them in mice who didn't have any kind of gut bacteria at all and saw that it made the EAE or the mouse model of MS worse. So there's something about the bacteria itself in the gut of MS patients, that's somehow triggering that autoimmunity. So, really interesting connection there and I think we're still at the, like beginning of understanding all of it.

Stephanie: Yeah. It's such [(4:00)] an exciting new field of medicine that's really growing really rapidly, and I know we found that this gut imbalance seems to be part of the prodrome or like, the pre-MS phase where you see insurance claims for GI issues and GI symptoms really spike 5 years before diagnosis. So, there's no denying there's absolutely a connection, and we're learning more about that every day, and in fact, in the last few years, as there's been more and more research into diet, uh, intermittent fasting, in general, has gotten a lot of that attention. So, can you tell us what is intermittent fasting?

Samantha: Sure, uh, so intermittent fasting is kind of, there's a few different ways to do it but essentially it's restricting the time that you're eating, and the time that you're taking food into your body, and so there's... I think the most popular version is called time-restricted feeding, um, and that involves kind of fasting for a 12 to 16-hour period each-each day, and then eating within an 8 to 12 or maybe 6 to 12-hour period. Um, and so that usually looks like, you know, eating from maybe 12 p.m. to 8 p.m. and then fasting overnight.

Um, the alternative way to do it would be alternate... something called alternative day fasting, which is where people will... the most extreme version, every other day, they take in 25% of their necessary calories, it's about 500 calories. So, every other day they're taking in 500 calories, and the other days they're eating kind of whatever they want. Um, and then a more common version of that is the 5 and 2, where you do 2 days a week that aren't in a row but like 2 days separated by at least one day of normal eating, where you only eat 500 calories.

So, people can do intermittent fasting either of those ways. Um, I think most people that I've talked to, who do follow the diet tend to do the time-restricted feeding because it tends to be a little, uh, easier to do with like a regular social schedule and regular work and family, you know...

Stephanie: Absolutely.

Samantha: ...responsibilities and things like that. [(6:00)]

Stephanie: Yep, yeah, and I know I've tried it in the past, and sometimes even year to year or month to month. Different ways of intermittent fasting fit different lifestyles. So, you can either stick

to a daily window like you mentioned or have certain days of the week that you're fasting. So, is there any convincing evidence that intermittent fasting has a positive impact on MS disease activity or symptoms?

Samantha: So, um, yes and no. [chuckle] So, I guess I'll back up and say, like, for the general population, right, f-for even including people without MS, the intermittent fasting diet has a lot of metabolic advantages, and that, uh, it improves your... them how your body processes sugar, um, reduces obesity, it reduces the fat distribution in the body, um, and kind of how your body is using energy, and so, those benefits also extend to people with MS. Um, including weight loss as well because a lot of people kind of snack at night, so when they do the time-restricted feeding, they tend to eat a little bit less, even though they can eat whatever they want and that eat in our interval.

Or, the way intermittent fasting works is that when you're fasting for more than 12 hours, your body starts to use energy from fat instead of glucose from the sugar and food, basically. So, it's using the fat and in a process called ketosis, and ketosis does a lot of really cool and amazing things in the body, and you know... I could also get into the theory of evolutionarily why, you know, our brain should be working at peak performance or not eating.

So we could find our next meal, but, uh, there is [inaudible] not in MS patients, but, um, in both people and in mice, showing an increase of something called brain-derived neurotrophic factor or BDNF, and BDNF is implicated in kind of neuroplasticity, which is basically like new nerve cells grow... uh, growing and developing, which is involved in learning and memory, which I think is really interesting considering so many people with MS have cognitive symptoms as part of their disease.

There are even [(8:00)] mouse studies showing kind of intermittent fasting leads to an increase in hippocampus volumes, and the hippocampus is the memory center of the brain. So, I think that you know, although we don't have any direct studies in MS patients, it's really interesting to think about potentially intermittent fasting as a way to also kind of reverse or improve some of the cognitive changes, and like the memory changes that people with MS experience.

Now, for MS specifically, everyone got really excited around the time I was doing my project with Dr. Maria, which gosh, [chuckle] which was before I graduated medical school. So, I was like probably 6 years ago... 7 years ago now. Uh, there was a really interesting study that came in the mouse model of MS, showing that when mice, and of course, it's a very controlled setting, but mice in a lab.

When they were fed every other day, and kind of every other day they were not fed, their EAE or the mouse model of MS symptoms were reduced, and in some mice, kind of went away completely, and that was super exciting for a lot of people in the MS world, and-and specifically people interested in diet and lifestyle changes. But we know we're not... we're not exactly mouse... mice, [chuckle] and... and people obviously have free will.

So people aren't going to be able to be in rigorous studies like that, but a lot of people are interested in making dietary changes, and so we, uh, started looking at if we could put people on diets of various types like the 5 and 2 or the time-restrictive feeding or even calorie restriction. Which is kind of a bit different, but we're not really talking about that today. You know, what...

Would their disease be improved? Would their quality of life be improved? And in general, there've been not a whole ton of studies, but the ones that have been done have showed improvements in quality of life measures.

So patients reported outcomes on things like fatigue and depression, um, and while there hasn't been any convincing evidence of like reduced relapses, reduced lesion load, like are the outcomes that are used typically in medication trials, um, there have been trials [(10:00)] showing improvements in the inflammatory markers in the blood. So for example, people...people... humans following a diet, uh, of intermittent fasting have fewer inflammatory markers like TNF alpha and interferon beta. Those are the things that we know kind of can exacerbate MS inflammation, those were actually reduced., and there are also studies showing that the T cells and B cells, which are like the immune cells involved in MS, kind of improve or plateau, and people who are having a relapse when they're put on an intermittent fasting diet.

So, I think there's some evidence that could be helpful, um, but again these studies are really hard to do for a variety of reasons; and so, I don't know if we'll ever have like really good slam-dunk evidence, for intermittent fasting, and I mean some of the some of the... some of our limitations are the fact that our-our group... our study population is going to be inherently biased, right?

The people that are interested in a diet study, and willing to do a diet study are likely to be different, and potentially more interested in health than others. Um, people are not always going to stick to their diets, that was a big problem with the study that we had done, um, that I had done with Dr. Maria, that a lot of the patients, you know, joined with the best of intentions, but like life is hectic and can't always follow the diet; and so, you know, it's hard to see out-outcomes change when half the people aren't actually following the diet. So...

Stephanie: Mm-hmm.

Samantha: ...I think that there is a good... a lot of good evidence, anecdotally as well, that people feel better when they're following these diets, but like big study data is still lacking for a variety of reasons.

Stephanie: Sure, sure, so definitely some hope for maybe helping manage symptoms, and preventing comorbidities, right? So, promoting your overall health, stopping...

Samantha: Right.

Stephanie: ...as much as possible the development of like cardiac disease or diabetes, you know, all of these things can accelerate MS, and the best way to keep those things from impacting your MS disease course is to prevent them in the first place. So, a lot of, [(12:00)] like you said, a lot of mixed messages around diet and lifestyle in general. Um, but is there any circumstance in which intermittent fasting is unsafe or anything, uh, that tells you someone with MS might not want to try one of these diets?

Samantha: So, for most people with MS, it's going to be a safe diet, and that's actually one of the main outcomes I was looking at in my study, just to... because it was one of the earliest ones, looking at intermittent fasting and MS patients, is it safe? We didn't have any negative outcomes, but we did exclude patients who had diabetes, specifically type 1 diabetics, because if people are

administering insulin and they're fasting, that could be dangerous. Um, we excluded pregnant women, or breastfeeding women because their metabolic needs are higher, um, during that period of time, and then o-obviously like children who have a higher metabolic need.

Now, I think i-if, for example, a pregnant wom... so a woman who's doing intermittent fasting, becomes pregnant, wants to continue on that, it could be safe, just making sure that you're getting adequate nutrition in the feeding interval. Um, but that's something that would have to be kind of monitored with a physician.

Stephanie: For sure. I always used to tell my patients too who wanted to try inter-intermittent fasting but they would report, you know, they didn't have diabetes, but they would report like they're very cranky when they don't eat, or for lack of a better term th-they get angry, [chuckle] and so, I said you know maybe intermittent fasting is not the diet for you. Like if you do not feel good if you're skipping meals, or if you're restricting the time that you're eating, maybe not... maybe this isn't the intervention that you want to go for. [laughter]

Samantha: Although I will say, I, uh, personally, I do get hungry [laughter] but I also have had success doing intermittent fasting. So [laughter] [crosstalk] ...

Stephanie: Well, that's important.

Samantha: Yeah, and I think it's also important for-for people who do tell me that to say, you know, it does take a few weeks for your body to get accustomed...

Stephanie: Mm-hmm.

Samantha: ... to it, and, uh, and honestly some of eating and hunger is habit-based.

Stephanie: Mm-hmm.

Samantha: Some, if you wake up every day and immediately start eating, then your [(14:00)] body's going to expect that, and so in... When you push your feeding interval to, for exa... for example, noon and you're used to eating at eight, yeah, for a few weeks you are going to probably be a little grumpy in the morning [chuckle] but it's better, and if people can stick with it, they end up feeling better overall, and reporting that hey, like I actually do feel good until noon now. I'm not having those cravings, I'm not getting hungry [chuckle] like I used to, but it does take a few weeks. So...

Stephanie: Yeah, yeah, definitely. Um, so we've already touched on this and alluded to it, but the biggest obstacle is being able to stick with something. So, what is the best advice? You've done it, you've tried it yourself, I've tried it myself. What advice would you give others in getting started?

Samatha: I would say, um, a food-tracking app is very helpful. I think that may be more helpful for calorie restriction, but it can still be helpful in intermittent fasting, to make sure you're getting adequate nutrition during your feeding interval. Um, which is not as much a concern for some people as others, but, um, just to kind of get an idea of how many calories you're intake... you're taking in, and, um, some apps also have like macro-nutrient breakdowns that people can follow. So, I think that could be helpful.

Um, I think also adjusting eating... the eating interval gradually. So you can, like jump right into it, but you can also like for example, if you're somebody who eats at eight o'clock every day, you know, for a week eat at nine, and the next week eat at ten, and like slowly just kind of condition your body to get used to eating later. Um, and then I also have found personally helpful, is using non-caloric drinks to kind of keep yourself feeling full when you do start to feel hungry. Um, so obviously water, like the best thing you could do is like, wake up and immediately drink like a glass or 2 of water, and that fills your stomach and actually can keep you satiated for a bit.

Um, I like doing black coffee and black tea; both of those can be consumed during your fasting interval, without breaking your fast. So, like you could get up and have your cup of coffee at eight or nine o'clock [(16:00)] you know, or 2 cups of coffee or whatever to get you through the n-noon time when you can have your first meal. So I think that that's very helpful [chuckle].

Stephanie: Yeah, and I think meal planning, if you can and you have the means to prep meals ahead of time, that's great, but even just planning if you're doing the every other day or 2 days a week where you're fasting. I would plan out ahead of time, like, these are my fasting day meals. I know the macros. I don't have to... the day off. You're hungry. You're busy. You are so tempted to just like eat whatever you can find. So planning ahead for sure helps me,

Samantha: Absolutely, and I would say like I-I personally haven't done the 5 and 2, because I don't think that I could do... [chuckle] I... It's a... it's a much harder, um, diet to stick... I think.

Stephanie: Yeah.

Samantha: ...but the one thing for people that were on that diet I heard was helpful, is choosing the 500-calorie days for days you're very busy...

Stephanie: Mm-hmm.

Samantha: ...like very busy at work, and sometimes the day just flies by, you don't realize [chuckle] that you really haven't eaten, or you know you're distracted and thinking about other things. Um, so that's kind of a-a little caveat that I haven't personally used, but I've heard, and I mean we've all been there when you're at work, and you've worked like, you're like "Oh it's like two o'clock and I haven't eaten yet so" [laughter]...

Stephanie: Yeah, yep.

Samantha: Just busy.

Stephanie: Absolutely.

Stephanie: ...uh, and then th-the last... the last tip was probably that you know like any... a-any diet you're not going to be 100% all the time, but if you're following a diet 75% of the time or more you're going to get the benefit from that diet. So I think that's important to remember, like if... for people who they have like a few slip-ups it's not the end of the world, like not to let that derail the whole diet.

Stephanie: Mm-hmm. Yeah, definitely. Um, the other thing I found helpful too, is one of the challenges of intermittent fasting is going from an empty stomach to that first lunch meal of the day. You just want to eat a whole bunch of food really, really fast and that can upset your stomach for sure. So, starting like not with a massive meal, the first thing you eat for the day. I found... uh, made it a lot easier [(18:00)] on my gut. So, are there any other types of dietary recommendations, research out there for MS patients?

Samantha: So, there are really a lot of diets that have been researched for MS. There's the ketogenic diet, the gluten-free diet, the low-fat or Swank diet, the Wahls diet; it's like a modified paleo, Mediterranean diet, obviously intermittent fasting and calorie restriction. Um, you know, there's no one specific diet that's recommended for MS, but I think there have been positive changes with all of these diets reported, and-and really the... the main thing they all have in common is removing excess and added sugars and processed foods.

I mean, it's pretty much in every single one of these diets, and so, really, you know, what I tell people in the clinic is, you know, make sure you're getting healthy whole foods. Um, make sure that you're limiting your sugar intake, your processed foods, like whenever possible, make foods at home. I mean, obviously, it's very challenging for some people, but as much as you're able to do that, it's going to be beneficial for you. Um, you know, there's some interest in probiotics.

I don't think there's any, again slam-dunk data, but, certainly, we know that gut microbiome is important and, you know, things like antibiotics, like unrelated to MS, but if you take antibiotics, like it actually takes over a year for your microbiome to recover from just one course of antibiotics. So, there's some interest in probiotics. Um, but again, it's-it's still in kind of the infancy of understanding like, what probiotics are helpful.

I mean, generally, lactobacillus is considered helpful; you can get that in yogurt, you can get that in a probiotic, but you know, I think it's also very different depending on the person, where you live, 'cause your gut bacteria vary based on all of those factors. Uh, you know, so... I-I don't ... There's not one specific diet, but I think generally following a healthy diet, and I tell people whatever diet you're gonna be able to stick to, is the best diet for you.

Stephanie: Yeah.

Samantha: As long as you're limiting your processed foods and sugars.

Stephanie: Absolutely, something that fits in your lifestyle. [(20:00)] Uh, and if you're unsure of what fits in your lifestyle, what your body is going to respond positively or negatively to, I always try to encourage people to try something for a month. Like you said, it can take a few weeks to get over the hunger, or the lifestyle change, or just get into the routine of planning your meals right. So give everything at least a... a three to four-week trial run, and then ask yourself, number 1, do I feel any different? Is that difference good or bad? And does this fit into my lifestyle?

Samantha: Mm-hmm.

Stephanie: And you have said today that you've tried things in the past, and some things worked in some seasons of your life and not in others. Um, same with me, right? So, the 5 and 2 worked really well when I was traveling and flying like once or twice a week. I just wouldn't eat on the days that I

was flying, uh, right? And now I work from home and I could never do that [chuckle] So...

Samantha: [chuckle]

Stephanie: ...so things will... Your life changes, uh, kids, jobs, relationships. Um, everybody has different circumstances at different points, and I think it's okay, to say like this works for me now, but it doesn't work for me in the future, or-or kind of just flex your life and your diet around what works best for you.

Samantha: Yeah, exactly.

Stephanie: Awesome. Is there any other... I know you just came from ACTRIMS and you're at Johns Hopkins, doing lots of exciting research. Any other new and noteworthy research you want to share with us today?

Samantha: Um, I think one of the more interesting things, I've personally been interested in for a while is all the research going into, like how can you change the microbiome, or potentially make it less inflammatory? And again, it's still a very complicated issue because everyone... Even among the studies that have been done, they all find like different bacteria that are the ones that seem to be the problem, but, uh, there's a really interesting study, uh, that's actually based out of UCSF that I had heard about.

I mean, it's been ongoing for a while [(22:00)] but heard a little bit about it at ACTRIMS, and it's called the International MS Microbiome Study. Um, so they're recruiting 2000 MS patients and 2000 matched controls in the same household, So it's mostly spouses, but like somebody that lives with them to, kind of control for differences in their diet and geographic location, and their lifestyle, which I thought was super cool, and they're basically doing a whole bunch of stuff with these samples from these people.

Um, they're also... UCSF is doing some interesting work with fecal transplantation delivered via colonoscopy, but there's also, uh, some interest in doing, you know, via oral capsules, to see if you can kind of deliver healthy bacteria, to s-somebody with MS's gut and could that modulate their disease. So I think that that's like, a very exciting area of research, in terms of gut health and gut-brain connection.

Stephanie: Yeah, it just gives me a lot of hope that there's so much interesting data coming, and more studies in the future, and the more we learn, the better we can manage MS both for ourselves and for our patients, and I think it's just really cool. So thank you so much for joining us and sharing your perspectives today.

Samantha: Oh, you're very welcome, very happy to be here.

Stephanie: Thank you all for joining us for our episode today on intermittent fasting. I just want to say before we leave, that while health and diet and exercise all can have a tremendous positive benefit, we also want to stress the importance of having a healthy relationship with food. With listening to your body, and doing what you feel is right for you. So, nothing too extreme is ever recommended...



[Music starts playing in the background]

Stephanie: Just because fasting for 16 hours is good doesn't mean fasting for 20 hours is better. So, I just want to stress that having a good relationship with your body, and with food is always okay, and never to let that add to stress, or [(24:00)] have a negative detriment to your health in any way.

In the description of this podcast, you can find resources, programs, and more information on what we've talked about today. Please check out Sam's social media, which we've linked to in the description.

Thank you for listening to this episode, and if you've enjoyed what you heard, please leave us a rating and review on Apple Podcasts or Spotify. We really appreciate your feedback. Lastly, we'd like to thank all of our generous sponsors, for their support of this episode, of Can Do MS podcast. We couldn't do it without them. Until next time, be well and have a great day.

[Music fades]

[END]

This podcast is possible thanks to the generous support of the following sponsors:

