

SO LONG COVID

Episode 3: Science Fiction

Reading version of the English subtitles

You're listening to the third of six episodes of the podcast "SO LONG COVID." The six episodes build upon each other. If you haven't listened to the first one yet, it's best to start there. I'm on the outskirts of Bern, visiting Jasna, the doctor from the first episode. I'll just ask Zita if she's compensated. Are you compensated? What does that mean? When is someone compensated? Jasna and her roommate are joking around. They greet me with a question that I definitely have never been greeted with in my whole life. Are you compensated?

We speak of a compensated illness when a chronic condition is under control. For example, if someone has heart failure, which is a chronic condition because their heart isn't functioning very well anymore, but medication can be given to compensate, then it's considered compensated. And if the illness decompensates, if something else comes up, like if you also get the flu or something, and then suddenly the illness decompensates and with heart failure, for example, you retain fluid. And then, for example, you are hospitalised for recompensation. And we kind of use that among ourselves to ask, "Do you have everything under control?" When we say, "Are you compensated?"

Jasna and I both haven't been sleeping much. So we're compensating for our lack of sleep first. Would you like a coffee? Oh yes, I'd love one. And then we go behind the house. Jasna wants to show me something. As you can see, an old VW bus, a bit kitschy. But in a beautiful green colour. Yes, what is it? Petrol... They call it Caribbean green.

A very beautiful colour. It could almost be my new favourite colour. But I said as a child that you shouldn't change your favourite colour. In case my sister hears this. She changed her favourite colour every single day. And I thought you could only have one favourite colour. That's why you have to stick with red now. Although you're actually starting to get a little weak in the knees at Caribbean green.

With this Caribbean green van, Jasna, with her favourite colour red, spends every free minute in nature. Going on high-altitude tours, hiking, and climbing. So you're super sporty? Yes, sometimes I say "used to be." Sporty. In recent years, her van has often stayed parked behind the house. Used to be sporty. I just went to work and then home to bed. I went to work and then home to bed.

For a long time, Jasna was still able to somehow... compensate for her symptoms, to come back to that expression. But work is the only thing she has left. Yes, but I knew if that's gone now, then I'm nothing. It's different when you're 70, maybe, and you have a heart attack where you get a stent inserted, like a bridge, and then you're fine again.

So, if you are told at 30: yes, you have chronic fatigue, learn to live with it - that is not the same thing. And I... in my mind, chronic is synonymous with incurable. Even the doctors treating me didn't really know what to do next. They couldn't offer Jasna much hope. I could be in the doctor's shoes myself, right? And I couldn't do it any differently than they did for me.

But as a patient, that is devastating. because all our hope lies in medicine when we ourselves don't know what to do. For Long Covid, there is still no effective medication or recognised treatment. Jasna has been suffering from exercise intolerance, fatigue, headaches, brain fog, dizziness, and other symptoms for a year and a half. She doesn't really want to go on working anymore. But Jasna didn't want to take full sick leave because she had no plan for what would happen next.

And then I was in a sea of: you are sick, chronically sick, and we can't do anything for you. Until that one day that changed everything. That was December 3rd. On that December 3rd, 2024, Jasna went to work at the hospital, like every day. She gave a presentation for her team as part of their continuing education. A publication about metamizole. Metamizole is a powerful painkiller.

She shared the latest findings on it with her team. But I already knew and realised then, okay, it's basically over for me. I can't go on. I'm so tired, I'm so exhausted. I gave that presentation. I was in a brain fog. I almost didn't

understand the questions my boss asked me. I was really so out of sorts. After work, she had an appointment with her psychotherapist.

I was a complete wreck. I couldn't go on. I was so exhausted. Then she somehow asked me if I had seen the SRF documentary with Marlen Reusser. That same evening, she watched the SRF documentary about Marlen Reusser, the Swiss professional cyclist. My own goal, or rather my guiding principle, is to be the best version of myself I can be this year. Marlen... I saw so much of myself in her.

You can see she's such a powerhouse. She took on everything. She even says you can achieve anything. And she's so positive in that documentary. And then comes the part where she just bursts into tears, shows her emotions of despair and how ill she is. I had already had to give up on the World Championships. I had to give up the whole season.

I had to give up training or doing anything at all. The focus is now much more on my health. And on getting healthy again. And then it really all came crashing down on me. I see my life reflected in that. Sure, I'm not a professional racing cyclist, but I had also run my marathon, so to speak. Trying to get my specialist medical qualification, all those job changes, working during Covid.

It really felt to me like a Tour de Suisse. Just not in sports, but in my professional life. And then, of course, I wanted to know: Okay, how is she doing now? Jasna takes out her phone, goes on Instagram, and searches for the profile Marlen Reusser. This video is for everyone who is suffering from Post Covid or ME/CFS, or knows someone who is.

You see Marlen Reusser in selfie mode. She's walking along the edge of the forest and talking about her experience with long-term Covid. I myself was affected by it and am still impressed by the power or force of this illness. And I'm extremely happy that I'm feeling better now. And because I'm so convinced of the steps I was able to take, I wanted to share them.

The video is about seven minutes long. Marlen Reusser explains what helped her to recover. She said it was important to share this because this knowledge is not widely known in Switzerland. She signed the post "Marlen 2.0." Before Marlen Reusser became a professional cyclist, she studied medicine, like Jasna. And Jasna knows this and that's why she pricks up her ears. And suddenly she remembers Jann, whom she knew from before.

That's why they also speak the same dialect. A childhood friend of mine, Jann, also became very ill with Post Covid. And I picked up on it a bit from the sidelines, because we weren't in contact at the time. But it still affected me because I suddenly found myself in that situation too. I did wonder how he was doing. A while ago, she got news from her mother. "Hey, Jann is healthy.

Here's what he did. Look, does this ring a bell? And I was like: yes, yes, my mom is sending me something again. Brain reprogramming and all that, that you can reprogram your brain... He'd reprogrammed his brain and stuff. Sorry, Mom. And then - this was in September - I thought to myself: No, that's not it. I have a problem with my immune system.

I was so convinced of it. Maybe Jann... he had headaches and light sensitivity or whatever. But that's not me. But now, a few months later, Jasna watches Marlen Reusser's video on Instagram and has her aha moment. Suddenly she sees parallels between Marlen Reusser, Jann, and herself. And yes, it's incredible. That gives hope, confidence? So much hope, so much hope. And then you dig a little deeper.

You don't really believe it right away. Hey, can that really be? Can you reprogram your brain? It sounds a bit like science fiction. But yes, I increasingly realised that it really is like that. That we can do that. This is the podcast "SO LONG COVID." The third episode, "Science Fiction." My name is Zita Bauer. Jann, Jasna's childhood friend, is my partner. He fell ill with Long Covid three years ago, in spring 2024, as we heard in the previous episodes.

There were months when his severe symptoms kept him practically confined to bed. At some point, I started wondering what this meant for him in the long run. And for us, too. Would we ever be able to do things together again? Like we used to? But then I came across the article in The Guardian. And with it, a new understanding of the illness.

It suggests that the chronic symptoms of Long Covid are learned by the brain and nervous system and can therefore be unlearned. Based on this explanation, Marlen Reusser, Jann, Jasna, and many others have overcome Long Covid. Understanding the neuroscientific basis of this explanation is the first important step toward recovery. And that's why this episode is the focus. How can the brain actually learn symptoms?

Okay, and now things are about to get a little nerdy, but also incredibly fascinating. The brain is one of the most complex organs in our body. I mentioned that I felt the same way as Jasna, that I was somewhat skeptical about reprogramming the brain and all that. But once I really delved into the topic, I quickly realised: This approach is scientifically sound and comes from research on chronic pain.

So it's not an approach that only emerged with Long Covid. There are doctors and pain therapists who have been working with it for over 20 years. One of them is Howard Schubiner. Act 2: The basics He's one of the leading experts in this field. Thank you so much for agreeing to give this interview. We're delighted to have you with us. Thank you.

I don't think I know many people in Switzerland who are doing this work. There are not many. Howard Schubiner is a board-certified internist and a professor at Michigan State University, in the College of Human Medicine. And I have been working in this Mind Body space for about 22 years now. You're talking about the "Mind Body space"? Let's clarify terminology, because it can be a bit confusing.

There are so many terms. I know. The term "mind body" means so many things, different things to different people. What I do specifically is help people who have symptoms or conditions that are caused not by physical damage in their body, but by learned neurocircuits in their brain. And we are now calling these neuroplastic symptoms. Neuroplastic symptoms - that's what we call symptoms that aren't caused by physical damage, but are learned by the brain.

Howard Schubiner used to talk about mind-body syndrome. He said he'd moved away from that term because it was misleading. There are so many offerings under that name that mean completely different things. The term "neuroplastic symptoms" has become established. This is derived from neuroplasticity, the term for the brain's ability to learn, change, and reshape itself. Children learn how to ride a bike, how to talk, how to walk.

That's because of neuroplasticity. But we can also learn pain. We can learn fatigue. We can learn anxiety. Walking, talking, riding a bike - we learn all of this because of this neuronal plasticity. And not just as children; we can learn throughout our lives. And that includes pain and symptoms. The neural circuits in the brain can turn on, they can turn off. You can learn pain, and you can unlearn pain.

And that's been the focus of the work that I've been doing for over two decades. In more than 20 years of research and practical experience in this field, Howard Schubiner and his team have repeatedly seen that the brain can unconsciously learn symptoms, but also unlearn them. Chronic back pain, fatigue, migraines, tinnitus, and so on, usually fall into this category: neuroplastic symptoms that can be unlearned, that are curable.

That's hard to believe. Especially if you've only ever heard that there's nothing you can do and that you just have to learn to live with it. It almost sounds a bit like science fiction, right? Yeah, the reversals that we have seen seem too good to be true. And when you tell people about it, most of the people who hear it for the first time don't believe it.

They think you're fooling yourself or it's just hocus pocus or science fiction or woo-woo. But that's what we've seen. So, no science fiction. No hocus-pocus. Just science and years of experience. It helped me to hear it all explained in German. That's why I also called Antje Kallweit. Hello. Antje Kallweit, physician and therapist for chronic pain. She, who listened to a podcast while weeding and learned about the neuroplastic approach, I don't go to cocktail parties anymore.

I don't go to cocktail parties either. No idea what corner of my brain that idea came from. I want to understand even better how pain works. And I'm saying pain now, and so is Antje Kallweit. But the mechanism can be applied to all sorts of symptoms. You can only begin with this sentence: All pain originates in the brain. Even the pain of the gallbladder or the broken bone doesn't originate where the bone is broken, so to speak.

Rather, that's where nociception originates. That's where the stimuli are generated. And they travel towards the spinal cord and then to the brain. And only in the brain does the actual pain arise. And that's the case with all

types of pain. There is no pain without the brain. You have to understand that first. The brain plays the crucial role in the development of pain.

But not only that. Actually, in all our perception, as Howard Schubiner explains. Our brains literally generate, literally create what we experience. This is not some kind of a woo-woo, new-age kind of idea. It doesn't mean that if we think we're going to be rich, we become rich. What it means is that we don't see with our eyes. It means that light comes in through our eyes.

But our brains, the visual cortex, part of the brain, create the images that we see. Which is why sometimes your brain will see things that aren't there. And why your brain can see when you sleep, because we are dreaming. We don't see with our eyes. This might sound a bit strange, but that's how it is, says Howard Schubiner. Light enters our eyes.

And these signals then travel to the brain, to the visual cortex. The finished image, however, doesn't arise solely from these light signals, but from the interplay of many other neural pathways that bring information from other brain regions to the visual cortex. For example, from an area where memories and experiences are stored. And from networks where expectations of what reality should look like are processed.

The brain combines all of this and creates an image. In neuroscience, this is called predictive processing. So we see with our brain. That's why we can also see images in our dreams, even though our eyes are closed. And it's the same with bodily sensations and pain. We don't feel with our body. So weird, but it's true. When you touch a hot stove, it's not your finger causing pain.

It's actually the brain. And we know that because many, many people, this has been recorded for many years, can have an injury and not have any pain. When I place my finger on a hot stove, the nerves send signals to the brain. The pain itself, therefore, originates in the brain. The brain decides whether and how intensely I feel pain. And that's why it makes sense that painkillers often act in the brain.

Opioids, such as morphine or fentanyl, act in the brain and spinal cord. This is the basis for understanding neuroplastic symptoms: that every pain and every symptom ultimately originates in the brain. And just like the images we see when we dream, it's also possible for pain to arise without a signal from the body, without structural damage, as Antje Kallweit explains. This is what pain science is increasingly confirming: there is pain that doesn't arise from a physical injury. Pain that doesn't arise because a gallstone is making its way through or because some nerve has been damaged, and yet it's just as real.

So that's the great discovery, so to speak. That's why phantom pain exists: pain in a body part that is no longer there. So, all pain and all symptoms are produced in the brain, but that doesn't mean they're imagined. On the contrary. That's normal. There's nothing else. Every pain originates in the brain, and it's no less real, no less intense. It's just as real as any other pain.

Often, there might be an infection or an injury at the beginning, but then it subsides or heals, and you can't find any clearly identifiable structural damage in the body. But the pain and the symptoms remain. Real pain, real symptoms. Without physical damage, without nerve injury. We need to let that sink in. It reminds me a bit of the film "The Matrix," where the main character, Neo, learns that reality comes about completely differently than he thought.

In the film, it's through a simulation, a computer-generated dream world. In real life, the Matrix is our brain. We don't know anything else. That's our reality. Symptoms such as fatigue, muscle pain, backache, migraines, urinary urgency, irritable bowel syndrome, and so on can be learned by the brain. And all these things can be debilitating and disabling and have a life of their own and still not be caused by a specific disease or tissue injury or pathologic process in the body.

This is precisely where Howard Schubiner, Antje Kallweit, and their colleagues come in. We help people change their brain in order to reverse these neuroplastic symptoms. They support patients in unlearning these symptoms by helping them rewire the brain. And now you are saying that Long Covid or Post Covid too is a neuroplastic condition? Yes, we've studied that extensively. And I write about this in my new book in great detail.

Everyone deserves a careful evaluation. So just because someone says they're diagnosed with fibromyalgia or migraine or Long Covid, we're not going to assume that it's neuroplastic without an evaluation. You can't just

assume that every person with Long Covid or ME/CFS has neuroplastic symptoms. Every case needs a thorough evaluation. But researchers, doctors and pain therapists like Howard Schubiner and Antje Kallweit come to the conclusion: these new findings about the neuroplastic origin of chronic symptoms also apply to symptoms attributed to Long Covid.

And because the brain is neuroplastic and capable of learning, these symptoms can, in principle, be unlearned. That's the great potential. I think this approach to both pain and ME/CFS is a real shift in perspective. And it offers incredible potential. But how can you be sure that your symptoms are truly neuroplastic and that something else isn't being overlooked? Jasna asked herself these same questions.

I know of so many rare things that could be the cause. And that's been on my mind a bit. Rare diseases are rare. But there are so many rare diseases that having something rare is almost not rare anymore. How can you know if these debilitating, severe symptoms and unbearable pain aren't still a warning sign of physical damage that needs to be treated with medication or other therapy?

A key point for me was getting a medical check-up. Because I needed that reassurance. Like: There's really nothing wrong with my heart. There's really nothing wrong with my lungs. There's nothing wrong with my brain. And there's nothing wrong with my abdomen. And that's what I needed. That's very important. First, everything else has to be ruled out. If structural damage is found, then the focus is on treating it.

But if nothing is found - no virus, no inflammation, no damaged organ, no tissue damage, no nerve injury - then the next step in the diagnostic process involves looking for neuroplastic symptoms. Which is: looking very carefully at the characteristics of the symptoms. Do they come and go? Do they turn on and off? Do they get better when you're on vacation? We're looking for signs of neuroplastic symptoms.

Do the symptoms appear and then disappear again? Do they improve when you're on holiday? That was the case with Jasna, for example. And then, when I had to go back to work and was under a lot of stress, I felt worse again. Another indicator is when the symptoms migrate from one place to another in the body. It was always a very different kind of headache.

Sometimes it started in the neck, sometimes around the eyes, sometimes in the back of the head, sometimes in one spot, sometimes everywhere. Various changing, migrating, and inconsistent symptoms. These are the kinds of clues we then have to gather. There's a list, we call it a pain atlas, where you have to fill in your symptoms. And the more symptoms, the more locations of pain...

The more likely it is that a neuroplastic mechanism is at play. Looking very carefully at those patterns can make all the difference, because it comes back to having this aha- or the click-moment. Where people can realise: "Aha, I see what is going on there!" Now we can move in the direction of recovery. There it is again, the "aha" moment. That moment when patients understand what is happening in their bodies and how these neuroplastic symptoms arise.

For me, it was then so clear: the non-structural things, meaning the things where we physically find no cause, there are tons of those in medicine. I mean, we say so often: We don't know the cause of your pain or other symptoms. In the MRI, in the scans, or also in the laparoscopies or whatever, we see nothing. Or we see something, but it doesn't explain your pain because these are normal abnormalities, so to speak.

And then it really fell from my eyes like scales, ah, that's it! And then my path was truly clear. And I mean, it's incredible when someone suddenly says: It's not easy, but you can unlearn it. Understanding what's happening in the body is crucial for the further recovery process. It requires this fundamental trust that the body itself isn't broken. And achieving that isn't easy.

It's the exact opposite of what you usually hear. You remember. Usually, you're told that any worsening of symptoms has irreparable damage as a result, which is incredibly frightening. And then there's the fact that it's really hard to believe that such painful and debilitating symptoms can be learned by the brain. I mean, I knew that headaches could become chronic. But that a sore throat can become chronic?

That you can feel so sick that you can no longer tell whether this is a virus or your mind, so to speak? That was not within the realm of what I could understand at that point. Through evolution, we humans have learned to understand physical symptoms as expressions of physical damage. It was vital for survival to rest when in pain.

The idea that such debilitating symptoms could be learned by the brain and unlearned, that the brain has such power, is hard to believe.

Do you remember your first reaction when you heard about this, when someone told you about it? Especially with your background as a doctor, what did you think? I first had a lot of resistance. I was really quite stubborn. I felt I had something in the classical sense, some kind of infection or illness that simply hadn't been discovered yet. I went back to the hospital a hundred times and said: You simply have to find out what's wrong with me!

I meet Marlen in a video call. The professional cyclist is currently in Mallorca and comes straight from training. She tells me about the moment she learned about the new approach. Somehow, it took quite a lot of desperation, and I think my luck was also that it came to me from different people, through different channels, until at some point I thought: come on, it doesn't hurt, give it a try!

That's why I actually tried it. And it was the only thing I've ever tried that didn't drain even more energy from me. And I wasn't exhausted afterward; in fact, it actually felt good. And then I thought: okay, this is something completely new for me. A new experience after many months. Experiencing it firsthand really shook up my understanding of medicine as a trained physician.

Who can tell me where the boundary between body and mind lies? And so on. These are questions I had never asked myself before. I would have said: you're crazy, that's completely esoteric. But I think it's not esoteric at all, it's completely scientific. We just don't grasp it. It's much more complicated than we think. She herself is learning a great deal and asking herself questions about being human and health that she'd never considered before.

Step by step, she's feeling better. Until she can eventually start training and racing again. Today, Marlen is fully recovered. In this video on Instagram, she talks about her journey. For Jasna, who also appears on our podcast, this video was truly a turning point. Today she's doing much better. I think... So wonderful. Yes, that's so cool. I had no idea what that would trigger or whether it would resonate somehow or interest anyone.

When I made that post, I mainly felt resistance, and very, very many people from this community, I would say, said: What are you saying? And that's not right, and that's not true, and you have no clue. And then, after all, so many people, privately, by the way - which is funny - all criticism is always public, but the good messages came privately through every channel - wrote that it had helped them too, whether because of my video or not.

That made me very happy, because I posted the video with the idea that if it helps even one person... For Marlen, Jasna, Jann, and also Paul and Patricia, whom we've already met, this new understanding of illness has been the key to recovery from Long Covid and chronic fatigue syndrome. And they are not isolated cases or exceptions. This is confirmed not only by Howard Schubiner from the USA and Antje Kallweit from Germany, but also by Silje Endresen Reme, Professor of Health Psychology at the University of Oslo.

She, too, has been working in this field for 20 years, as a researcher and therapist. And she says: "What we know from research is: that's not unique, luckily, to expect that recovery is completely possible. Previously, we used to teach the patient, you know, help them to cope and learn to live with the symptoms. But now, within the last five years, with the new neuroscience, with the new evidence, new clinical models and the new empirical results that we have, we now, to a much larger degree, talk about living without, completely recovering from symptoms.

Previously, the goal of therapy was to find ways to cope with chronic pain and symptoms and learn to live with them." But that has changed in the last five years, thanks to new insights from neuroscience. There's increasing talk of living symptom-free, even of a complete recovery. The human brain is still a great black box, but we're getting a better and better understanding of how pain and symptoms arise.

Whether they're structural or neuroplastic in origin, they always originate in the brain. And they're real. In the film "The Matrix," there's that legendary scene where the main character, Neo, is given the choice between the blue pill and the red pill. With the blue pill, he wakes up in his familiar reality. Life continues as before. With the red pill, he learns what's behind the Matrix.

And everything changes. Jasna chooses her favourite colour. And with that, I really had a plan, because I knew what I should do. Or what I could do. And that I could do something. That there really was a chance that I could be

cured. There was a chance that Jasna could go on adventures again in her Caribbean-green camper van. For me, it's simply freedom.

I can just go anywhere. I can go into nature. I can sleep there. That hope is not an illusion. It is not wishful thinking. It is actually founded and grounded in what we know from science and empirical evidence. And if we don't do that, I think we risk that we sort of give up, which is really, really dangerous. Hope isn't an illusion, but is based on scientific and empirical knowledge, says Silje Endresen Reme.

What's dangerous is losing hope. This is the podcast "SO LONG COVID." The third episode, "Science Fiction." And in the next episode, things will finally get concrete. What exactly can you do to reprogram your brain, to unlearn neuroplastic symptoms and get healthy again? I defied the clinic's recommendations and did the exact opposite of what the senior physician suggested. I didn't know if it was right.

I knew it was also a gamble, a risk, but it was also a decision. I also decided: I'm going to put 100% into this. And then it actually happened. When I could suddenly climb stairs again, that was mind-blowing. My feet are dying... Okay. One. Don't drop my phone into the water, okay? One. Two. Three. The podcast "SO LONG COVID" is an independent production by Jann Zosso and me, Zita Bauer.

If you enjoy the podcast and find the topic important, we'd be very happy if you recommended it. And a rating in the app helps us be found by others. The next episode will be released in one week, on Sunday, March 29, 2026. Original music: Janos Mijnsen and Moritz Widrig. Mastering, mixing and sound design: Christina Baron. Dramaturgical consulting: Franziska Engelhardt. Voice direction: Irene Müller.

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