



Dr. Joseph Schneider - 00:00

Hey, good afternoon. And it's summertime. We had a tough winter. It was cold, like really cold winter. And because my stroke and my brain traumas, I have aversion cold. I get cold really fast. I get cold to my core. And then I feel like my whole body starts to shut down. Not a good feeling. And then summer comes and gets warm and then the air conditioner starts to affect me. Crazy the way an injured brain works. But I learn about it every day and I take care of injured brains and I'm getting a lot of experience with all kinds of cases. And I mean, I thank God, you know, we have a faith based practice and it's kind of a gift. Finally realize that the source of your strength and the source of the success of the practice comes from Jesus Christ.



Dr. Joseph Schneider - 01:08

So let's talk about how God made us. And I like to go back to when I was an engineer. And as an engineer I worked on making simulators for power plants. So we would get a structure that looked like a control room and we would teach power plant operators how to operate a plant most efficiently as they could and know the procedures and how to turn things on, turn things off, what the meters meant and so forth and so on. So it was really great work. I mean, I really enjoyed it. And I had some really great people that I work with now. Charlie Kreisman was a PhD in physics. And we talked about how Charlie was our design mentor or guru, so to speak. He was just a really great man. He was in his 70s when I first started working with him.



Dr. Joseph Schneider - 02:22

When I was in my early 20s, I got out of Saint Judge University with a degree in engineering physics. And I worked and I went to work with Omnidata and I really got a lot of responsibilities there. And I designed some really great things. We were there. One of the best things we designed was a microprocessor based simulator. Because most simulators were being produced on mainframe computers, then mini computers, and then we did some parallel processing with microprocessors. So we actually went to Greg Laszinski tennis courts. When that, we just started hitting tennis balls back and forth, having fun. And then we go into a conference room, we start designing. So it was called the Inner Game of Design. Tim Galway was producing books. Inner Game of Tennis, Inner Game of Golf. Inner Game. The inner game of this inner game.



Dr. Joseph Schneider - 03:25

So it became the inner game. And I came to appreciate the inner game because the inner game was about flow. When something that you're doing is flowing, that means it Flows easily, it's precise, and it comes without a lot of thought, just comes to you. It's like some of the great athletes in the world, when they practice something over and over again, they get to the point where it becomes second nature to them. It's part of them. And. And most of the time, they're in flow until they challenge themselves at the top level of their game or activity. Okay, So I would say when you have a brain injury, you no longer in flow. All right? So all the things that you've done over the years to practice, to create good habits have changed.



Dr. Joseph Schneider - 04:29

And so you don't have a lot of precision in the way your brain communicates and thus in the way your brain communicates your body for you to perform in a good way. Now, we talk about the brain as a muscle system

control system, right? And it truly is. It truly is a muscle system control system. But it's more than that. You know, as a muscle contracts and releases, then it's going to ask for fuel. And when it asks for fuel, then the body has to send the precise amount of fuel to that. And then other organs in the body have to respond to make sure that the circulation is there, the oxygen is there. The micronutrients that you need, for example, either glucose or ketones are there to fuel the muscle or the mitochondria for energy.



Dr. Joseph Schneider - 05:35

So it's a very complex system of controls that depend on good nervous function. Okay, so there was a concept that we had in hysteresis in a control loop, a hardwired control loop in which, say you want to control it 10ft, the level of the tank of water, and you had a pump that's pumping water into the tank to maintain that level. And then you had water going out to the different functions you need to go out to. But say we had a tank, we need to control the level. Well, you weren't controlling it exactly at 10ft. There was an error to it. And so it may go up to 12ft before the pump stops. And then before the pump goes back on again, it may go down to 8ft for the.



Dr. Joseph Schneider - 06:37

So the hysteresis, or the amount of error there is plus or minus two around the. The 10, where you're kind of controlling. Right. So we find that with our physical systems. Okay, now our physical systems are not hardwired. We don't have one wire, so we have. Or we don't have a computer that's on it. Computer can analyze and change and become dynamic that way. But our system is dynamic. It's dynamic. So nerves become healthy when they fire on a regular basis. So you need activity in that certain part of the brain and certain part of the neurons that go to the body. You need good activity. And when you don't have activity, those systems can atrophy. When you have pathogens or you have inflammation or toxicity in your body or a physical trauma, then you don't have those nerves anymore until you start stimulating.



Dr. Joseph Schneider - 07:52

And you can wake up nerves that are still available, but you can't get dead ones back, but you can actually increase your interconnections. So there's kind of like a dynamic plasticity that's happening throughout life. And so let's talk about that. The error, okay, so when you're unhealthy and say you got a pump and say that the pump filling the tank is unhealthy, instead of stopping at 12, at the high point, it goes up to 15. Instead of stopping at 8, the low point it goes down to 5. And so you have like just fluctuations like that. Now we see that with our POTS cases or dysautonomia cases when it comes to heart rate. So sometimes when you put on exercise and then you stop, then the heart rate will start going down, then it'll start popping up again, going down and popping up again.



Dr. Joseph Schneider - 08:55

So there would be a great amount of hysteresis, a great amount of error in that system. And so it may not be defined medically as dysautonomia, but I don't know. I think I'm going to call it dysautonomia. All right, now why? Because it feels uncomfortable to have that much fluctuations in time in heart rate, in oxygen and in blood pressure. They're all flip flopping all over the place like this. Now what we really want is we want the average heart rate to be maybe 70 and not 72 to 68. That's not too bad. But 78 to 62, it's too much. And so we want to fine tune the nervous system with all the brain injury cases we have, okay?



Dr. Joseph Schneider - 09:52

We want to fine tune not only the physical aspects of the nervous system, like muscle function, not only the physical aspects of muscle function, but we also want to control the cognitive function too, and the mental emotional reactivity that we have. So if we don't have fine controls of our mental emotional activity, or we don't have fine controls over cognitive thought processes for language and math and other functions that we have, then you're not going to have A real stable system, and we want stable systems to do that. So a dysautonomia can be related to anxiety. It can be related to depression because you don't feel good and you don't function right. It can be related to headache or circulation into the head or the brain. So there's many aspects that come from brain injury and dysregulation.



Dr. Joseph Schneider - 11:00

Now, no, it's the most fascinating concept that you can ever imagine, really is. Right now, nerves turn on from either temporal stimulation or from one input. Nerves can have many inputs, or it could be spatial summation, but the nerve needs to hit a threshold before it'll fire. So all the stimulations there have to get to a point in which the nerve is going to say, yeah, it's worth sending a message down the axon to the next station or the next neuron. So you have to hit threshold. So threshold means is that you need activity to stimulate the brain to be in threshold. Or if the brain is inflamed, it's already excited over excited threshold. All the time. All the time. Because the nerve is dependent on calcium channels, potassium channels, sodium channels.



Dr. Joseph Schneider - 12:10

It's a ionic type of electroactivity that goes down the nerve when it fires. Okay, so, you know, you need a good state in the body. That's why when you come to our center, we're interested not only in your metabolic aspect, how you get energy, heavy electrolytes. Do you have the ability to send a signal down the axon when it hits threshold? So that activity is the action potential that goes down the axon and communicates with the next nerve. Right. So hysteresis is important and so is error. And at different levels of function, we have different tolerances for error. When we're sick, we have big tolerances for error or large error swings. And then when we have been well trained, then we have small tolerances for error, and then we have more precision. So I've talked about in past podcasts that precision is important.



Dr. Joseph Schneider - 13:23

How long can you maintain the precision? Does the system fatigue too fast or are we developing stamina along those control mechanisms? And the last part of it is it can an endure. How long does it last? So people ask, like, you know, when the program's over, how long does it last? Well, it all depends on what your activity level is to maintain that level of fine control and level of stamina endurance that you want to achieve in your life. So it changes your life impact. Can I work? Can I be with family? Can I work? I'D be in my family, you know, I mean, that's really what it comes down to. It comes down to the life impact. And we want to, with everybody, we don't want to manage you the rest of your life, want to manage your symptoms.



Dr. Joseph Schneider - 14:11

We want to get you better so that you have a life. So that's what we need to do. Now we are hardwired, okay? And then in five minutes, the wiring may change a little bit depending upon your activity, what you do or how you think, how you pray, your spirituality, and how you exercise. So it's all got a pattern to it and only has a pattern when you doing the right things for your body. Now, do you think that we have a food pattern? Well, if I overeat all the time, right, Then my gesture tract doesn't like it and it doesn't know how to handle it when I'm only eating small amounts, small meals throughout the day, or I'm not needing as much sugar because sugar has a fine control to it, right?



Dr. Joseph Schneider - 15:16

Or it has a loop, it's going up and down, spikes, sugar spikes, insulin spikes, all kinds of things, all kinds of reactivity going on. And I'll tell you what, when you having sugar spikes, you don't feel good when you have cortisol spikes. And cortisol goes up too high and then too low and too high and too low. So in a control system model, we want our controls to be precise and how we treat our system from the time we put food in our mouth. What type of food is it? Is it healthy food? Does it affect our system properly? And does it support us in activity, in our relationships, in our prayer life? And that's what we have to consider all the time now. So if you practice a pathway will have a tendency to support you over time.



Dr. Joseph Schneider - 16:22

So we get an injured pathway to become healthier. And then it has to be practiced. It's called exercise. It's called doing cognitive activities. Reading, having conversations, interacting with other people. It's called doing math operations. It's called maybe play or games or something like that. I mean, that's the way throughout history that we develop strong bodies, strong minds, to be able to navigate our environment, to be able to take care of ourselves, get food, take care of our families, and so forth. I don't know. It can be tough. So practice is by repetition. So the more repetitive we are with healthy activities, healthy exercise, healthy eating, the more we do that, the better off we are. Okay, so. So we're looking at repetition and repetition Needs to be done right. And then we gotta have discipline, alright, around it.



Dr. Joseph Schneider - 17:45

Now if I go out and I eat and I supersize it. With bad quality food, then I'm creating habits and I'm creating controls that have to deal with over eating, overdoing it. Okay? So you have to understand that you can overdo, underdo or just do the right thing. And you have to develop those systems for yourself and you have to understand it and you have to put into play on a consistent basis. And it takes discipline to do that. So what are my daily disciplines now? Well, since my stroke and my near death experience, my first discipline is prayer.



Dr. Joseph Schneider - 18:37

So I pray for an hour in the morning with my wife and we read the Bible, we do certain prayers, I'm a catholic, we do the rosary, we do the seven sorrows rosary for our lady of Sorrows, we do the mercy chaplet on rosary beads and then we do other activities like the mercy chaplet. So we have different prayers that we go through and then what will we do? We do the Litany of St. Joseph and in the mercy chaplet we do the litany too to our mother Mary. And we have intercessory prayer. Intercessory prayer are the saints. And so anytime you pray for somebody, you're asking Jesus Christ for favors, you're asking Jesus Christ for strength, you're asking Jesus Christ for different aspects in your health and in your life. And I'll tell you what, I didn't pray like this before.



Dr. Joseph Schneider - 19:52

I always had a rosary with me, always had a rosary in my pocket. I learned that early on with my mother who was a big devotion to her blessed mother. And I learned early on that the rosary was a significant path for me to be on to honor not only Jesus Christ, but the holy family. Because God was made man. He was God and he was made man. And he had human experiences with human beings and these people were transformed in him and I want to be

transformed in Him. Now I'm not, I mean I'm not perfect, I'm just not perfect. I'm never going to be perfect. But I strive to be as close to Jesus Christ as I can be. And that takes discipline in my spiritual life. And then I mean I do a lot of cognitive activities.



Dr. Joseph Schneider - 20:52

You know, I always look up, you know, different functions of the nervous system, metabolic aspects of the body and I try to read other things but I really don't get around to that. So. And then after I finish with my prayers then I go to My basement, my crazy stroke gym, and I start my exercise routines and I have many other. Many activities that I do down there. It's not the same thing every day. Many activities. Got sledgehammer, I got vibration plate, I got kettlebells, I got clubs by weck. I have a boozo board. And for balance training, I have one of those Gibbons boards for balance training. Also, I have an amp on the wall and I have a Carol bike that I haven't opened up yet. And then I can row or I can do a StairMaster or a climber in the basement.



Dr. Joseph Schneider - 21:57

So I have a lot of. A lot of different activities, and I can just mix it up all week as I go through. Now I try to exercise seven days a week, but sometimes it's only five. But I definitely get five in five exercise routines during the week. And I think I'm getting stronger, and I need to get stronger. Being weak is. Wasn't the best thing. Getting to the point where I could exercise without pain, without fatigue, that was great. So I could get to work and. And be strong for my patients or Jesus. Patience. We believe, my wife and I believe that the people come to us, are sent to us because they need us, because Jesus set the center up for his good work and for his benefit. So, yeah, that's what I wanted to have to say today.



Dr. Joseph Schneider - 23:08

And I want to say that I'm grateful for every patient that comes in the office and trusts us to get them back on the road to success. So I thank God for that, like, every day for that, and that his will be done. Always his will be done. So I think his will be done was to keep making the center better, which is a challenge. It's a challenge when you bring in new technology and you're offering it to patients. That makes it. It better. Making it better is bringing in really good talent. And I think we have achieved that with Dr. Adam Klossic, a great educator, professor. The guy's pretty fantastic. I keep telling. He's brilliant and he's an amazing guy, and he really knows his stuff and he knows how to apply it.



Dr. Joseph Schneider - 24:17

So, yeah, we have a really kind of a growing center, and I think we have one of the best centers in the world to actually measure your nervous system, get a baseline on your function, not only with your metabolism, but with your neurology. And then we have the technologies and the knowledge to get you from being sick all the time to being well and back to your life. So thank you very much, everybody. Have a great weekend. Enjoy the sun and hopefully we'll be talking soon. Thank you. Thank God.