Dr. David Rosenthal

How Do Computer Games Affect The Brain

SUMMARY KEYWORDS

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All right, welcome back to the Optimal Performance Summit. I'm your host, Dr. Patrick Porter. Today I have a very special guest, someone who is widely recognized in the neurological world. But I heard him give a talk at the glia conference in Dallas just recently. And I thought, wow, everyone needs to know about this because of the topic. The topic, of course, is how do computer games? What happens to brain when you're doing a computer game? And how can we work on that? And who I'm talking about here is Dr. David Rosenthal, who is the he's a doctor of chiropractic. He's the founder of the Rosenthal method. He's also the co founder and president of the glia conference, which I just mentioned, he's the president of the International Association of functional neuro neuroscience and rehabilitation, which we're going to talk about at the end as well, because I think if you find this interesting, which I'm sure you will, especially if you're a doctor who's out there working with neuro neurology, then you're going to want to attend a conference. It's another summit is happening this fall. We're going to talk more about that at the end of the show. So Dr. Rosenthal, welcome to the summit.

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Thank you so much, Dr. Porter. I appreciate your time, sir.

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Yes. Now, when you got into this, and in going from chiropractic to neurological functioning, and then going to computer gaming, and I know that when I was in Dallas, we got to meet with

actually the doctor. There's actually a psychologist that works with a computer gaming team, which, you know, kind of blew me away, because I'm not into that, that right now. But these are people playing computer games for big money. I mean, we're talking like, just like the professional athletes, they're sitting all day playing computer games. So tell me what goes on in the brain of somebody who's playing these computer games.

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So if you're doing it efficiently, you've got a lot of positive networks are growing. But if you are playing too many you start to prune networks and actually start to decrease connectivity. A big thing that I always look at is how the brain really develops. And it really has got about four different steps. And so one of the first things that it grows is what called mirror neuron cells. And mirror neuron cells really have two basic functions, they are able to imitate what's happening, but they also predict what's going to happen. And then we have what are called grid cells, which identifies that I have a body. And then we have place cells, which are the difference between my body and your body. And then we have intuition cells, which are called von economo cells. And so each one of these things develops at a certain rate at a certain stage. And if you miss any of those, it creates some relationships that are not so efficient. So when we talk about gamers, we find that they are getting more relationships in almost any particular sport we've ever seen before. The problem is they're doing

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and they're not living in an analog world is

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called crossgrade. It's better to be able to rest you've got to be able to rest and digest. You just can't spend 12 to 14 hours per day, you know, because if you are a professional gamer You're yours. So you've got large companies like Nike that are trying to figure out ways that they can allow these individuals to grow at a faster rate without working so hard. So some of the athletes that I work with, we talked about not working more than about two, three hours per day and actually playing the game. But a lot of it's what we call complexity, which means we do a lot of different things so that we can cross train the brain because the problem is if you do one thing too much, that's all your brain is about. And then it misses a lot of other things. But the biggest issue is the screen is two dimensional. In the two dimensional world, we try to take everything we place it in that direct world, we gather Is it the more and so some things we want to talk about is a couple different ways that we can make those athletes more efficient. And surprisingly, a lot of the ones that are getting into professional sports, it's just as difficult as going from high school sport to college sport from college for too professional and actually playing and finding something significant. So we've got a lot of people out there but the ones that are actually doing At the very top, a very small percentage of individuals, but those that are

our, our help, when you look at them, they look like athletes. So if you're a video gamer, you can't be in your parents basement all day long in the dark, you actually have to look like an athlete. So what we want to do is we want to train these gamers, just like athletes. And one of the things I like to keep in consideration is I said, if you don't look like your character, how can you play like your character? And so that's a big part of it. So what we do is we take a look at a bunch of different networks build and so

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really,

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the brain we have the parietal lobes that tell us where we're at. We've got the frontal lobes, which is really our human spread. We've got the occipital lobes which are related to vision. We've got the temporal lobes which are about memory and hearing and the cerebellum which creates a smooth integration And also the hidden memory, we are growing 700 brand new brain cells every single day, on the left side and on the right side. So no matter what it is we're doing, we're creating a network of all those different things. And the great thing about it in a very short period of time, we can increase the connectivity. We'll talk a little bit later or we can talk now about some of the things we've done for the athletes and how we can improve them so efficiently.

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Sure, I think why don't you go ahead. That sounds great. So

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one things we take a look at. Yeah, so So I guess the story really begins back in 1977. When Pong came out, that's when I started doing video games. And since the years have changed, there's a lot more things are happening. So I was speaking at a conference several years ago, and there happened to be a professional gamer who was actually in the audience. And we started talking and I started explaining some of the things about conductivity and how smell is so important and how we can actually smell to make you more efficient as a player. And so what happened is from there, I was able to meet one of the team owners. And then the team came to Dallas and I was able to evaluate these gamers. And what I was able to find is they have just as many issues as what we do, right? They've got visual issues, they've got cognitive issues, they've got psychological issues, they've got networks that are just efficient. And all you do, the solution is to be able to train those things. So one of the things that happened is they've got a first person shooter game, it's a training game. And one of the players who's functioning one of the top levels of this one particular game, it was taken him about three shots to actually kill a zombie, right? So zombies may be for these kids, right? Some of these kids are winning

millions of dollars in somebody's tournaments. So in a very short period of time, I got him to kill the zombie in one shot. And that was looking at what his primitive reflexes, he did not have an asymmetric tonic neck response. So what I did in the gaming station, I had them go through a fencing exam, rather rather fencing training program by going towards the screen as pretending as though he was sensing. And it got him down from three headshots down to one headshot. So a lot of it is doing the appropriate evaluation to figure out what works and what doesn't work. And that's really one of the things that makes it really exciting because a lot of things I like to do is I'd like to say hold my beer and watch this. Because I think a part of that when you're evaluating people is you have to have an open mind, you've got to have the understanding of a lot of different things that are happening. And if you miss something, you may not allow these people to be as most as efficient as what they need to. So when I go through the evaluation, I take a look at their mirror neurons. I take a look at their grid cells are play cells, they're von economo cells and other glial cells. But then, so you use tools where we do eye tracking, or we do muscle spindle response, where we take a look at optic kinetics, we watch their gait, we do cognitive testing, we figure out how it is their function. And then we do things like oxygen saturation, heart rate and blood pressure. And we can use these indicators to make them more efficient what they're doing, and I I find that a lot of these kids are challenged. Because here is the biggest problem that I find in video gaming. They're all sitting down. And when you're sitting down, one of the biggest issues is you're turning on your parasympathetic system, which is all about resting and digesting. And it makes it very difficult to rest and digest when you're trying to kill zombies. So we've got to do things that actually activate the sympathetic nervous system, and get them out of this relaxation state. And I think that's one of actually the biggest issues in video game is a kid to sit down. And that creates a massive issue. You've got to be able to get the moving. So one of the things we do, just like when I take care of kids got this disorder. Since Erica, we take the ship and we stick it in the chair. And what happens is that gives them cerebellar input, which allows their brain to stay a little bit more awake. So there's little things that we can do to alter what they're doing, not only before they get to play, but also while they're actually playing. So it's very exciting because we can take All the things about neuroscience. In fact, one of the most exciting things is this is that over the last five years, in neurosciences, we know more than we have in our last 500 combined. And so there are 1000 papers that are coming across my desk. And it's it's so difficult to keep up. So to be able to search these things, that's really where a lot of these new ideas are, is pulling these papers, looking at the relationships and making some sort of simple application because we want to have these kids so they can survive beyond just the two years of what they're going to be doing. We want them to live long and fulfilling lives and if they burn out in two years, makes it very difficult to recover after.

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That takes me to the next question is

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what type of recoveries Are you recommending for these people? You already said? You have worked for just two, two and a half hours on the game, but then they do something what are what are some of the recommended recovery programs?

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So I take it from a neuroscience perspective is that your brain is actually recovered 40 times per second, which means that your brain fires off at 40 hertz. So it is stimulation. In addition, stimulation inhibition, it's constantly turning on. And one thing that happens in video games is there's two basic types. You've got video games that are sprinters, and you've got other ones that are marathon. So when you train, you have to make sure you train like a sprinter. Don't Train like a marathoner, so it's important to train create competition. So, training is really a system. So a system is something that you do every day. If you're not doing it every day, then it's a goal. A goal is something that you may or may not do one day or another. And so in the words of Scott Adams, who is the who, who writes Dilbert, he says goals are for losers systems are for winners. So one of the things when I talk to the athletes about recovery, is that they've got to be able to rest they've got to be able to digest there's about five different things that I take a look at when it comes to recovery. The first thing is don't train for 12 hours a day, which is the biggest challenge. So like I said, these professionals have got two years where they're before they burn out. The next thing is for recovery is you've got to be able to stand up and walk away. At anytime you're finished with your game, you're done with a particular set, make sure you stand up and get away. The other thing is you can close your eyes. Now there's two different techniques you can do to close your eyes. And so when you briefly close your eyes for a very, very short period of time, your eyes are able to rest in your eyes actually go in a downward direction. But when you close your eyes completely see over two to three second period, your eyes actually go upward. And there may be a relationship with rapid eye movement, which allows you to rest for a longer period of time. And another part of it is going to be NASA talks about naps, the most efficient ones. You do this about 29 minutes at a time to get the most amount of recovery. And the other thing when it comes to recovery is you want high quality food and hydration which means you want real food You can see you can look at you can digest and you can eliminate. So really the five keys for recovery are don't train for 12 hours a day, stand up and walk away, close your eyes, take a nap, and get good food and hydration. And that's really difficult to say to some of these young kids, because they're used to drinking Red Bulls are used to drinking sodas and candies. And they've got these high sugar foods. And so when you begin training those things, they have to be a part of it. Because there's really important things if any of these kids really want to become world champions. And those things are basically three different things. The first thing is they've got to be curious, they've got to be hungry, and they've got to be able to self train. If they can't do that, they're never going to rise to the level of being an expert. They're never going to rise to the level of being a world champion.

So you've got to be able to rest you've got to be able to digest you've got to be able to stand up and get away. You've got to be able to close your eyes, take a nap and get some high quality food. A lot of it comes down to the same sort of thing. Things that we need to do as humans on a day to day basis.

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I know that we spoke a little bit of it, but we have a, we have a project out in Denver going on, that got delayed because of everything that's happening with the world right now. But we had an EAS sports program where we were showing recovery with Brain Tap, it was

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going well, but we can't

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obviously, we can't use the Wahby or any other measuring tool. While they're, they can't come and see us. But we're looking at that. So we're gonna we're gonna start working on that in the in the Brain Tap Labs, but I'd love to talk to you maybe about getting one of your research groups in in doing that and in helping to get that published, because I think there's some some big things here because like the 29 minute nap, you know, we need to make sure also they're waking up in an upcycled. So we can do that. But let's move into a little bit more about your training protocols for high level gamers because some people think I'm just going to get it. I'm just going to get a computer game. I'm going to get my my console I'm going to be I'm going to start competing. You know, they don't understand everything that goes into it's kind of like the guy I haven't Call when I was in practice, a guy said he wanted to try out for the Arizona Cardinals. I was in Phoenix at the time. I said, great. I said, How did you do in college? He said, I didn't play college ball as well, how'd you do in high school? So I didn't play High School ball. I said, Well, I don't think you're gonna make it in the pros. But this is the way people think, you know. So tell me a little bit about what's going on with your training method, or what you recommend for people.

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So the first thing you've got to do is you have to have a team approach, you've got to have an interdisciplinary team of individuals that you have, you're actually going to work with, you know, I am not an expert in how to play League of Legends, you don't want my advice on what your shooting rate was. Right? My role is to really look at the neuroscience of what you're doing and the nutrition and the recovery. Those are the sort of things that I focus on. I mean, other people that we have when we're when we're working with the team, is you've got to have a nutritionist because that is real. You've got to have people doing multiple roles, and you've got to be able to have someone who's gonna be able to train you. You've got to be able to someone who's

going to be able to have the code And hold you responsible. But for me, the biggest thing is you've got to be your character, right? If you want to win FIFA 2020, which is a, which is a football game, you've got to be able to do the similar type activity that you see that you see in the station, you've got to be able to match, one of the biggest difficulties we have is that we don't match. If we don't look like what it is we're becoming, it makes it very, very difficult to do that. And the other thing which I talked about, is we've got to be curious, we've got to be hungry, and we've got to self train. But for any kind of long term success, you've really got to have three different things. Number one, you gotta have expert coaching. You just don't have those, no matter what it is that you do. If you don't have the practice if you don't have the fire in your belly. And if you don't have people telling you, you're doing it wrong, you're never going to be succeeding. So the other part of that is going to be cross training. So what I like to do is I like to say to the athletes You always want to train with someone who's always better than you. You never want to be at the top of your game, you always want to have someone that just a little bit better at something. And then also, when you're going through your activities, you've got to be able to embrace the failure of the activities, your brain thrives on finding solutions. If you're not failing, you're really not succeeding. You've got to find out 1000 different ways that it doesn't work before it actually does work. You know, one of the things that I say is I've been in practice for over 20 years now, and I feel like my best ideas come after 20 years plus about three seconds, which means you're constantly needing new input, and you need new advice. The other thing I think is important is that when you do cross training, I like to do a lot of catching and a lot of throwing. I work with a lot of kids that have got developmental delays, and I work with speech therapists here. And what we found over doing some of the research at least clinically is we find that catching is related to listening and understanding and also related to the parasympathetic system, throwing is about expressing and about the sympathetic activation. So small balls are small ideas, large balls are large ideas. So if you can't catch a large idea, you can't catch a large ball, you probably not be able to catch a large idea. If you can't take a small target into a very, rather a small object into a small target, it makes it very difficult for you to be efficient at what it is. And if you're going to be a great athlete, you're really going to be a good athlete across the board. And the other thing we take a look at, is you want to be able to predict so games like as simple as what it is, is pin the tail on the donkey is an incredibly powerful player in

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the Olympic coach who's worked for the last 30 years working with gymnastics who also does some coaching for the esports. He says one of the most important things that they do for cross training is actually playing tag because you have to know where you are in space where you're going where the other person is. So you have to avoid those sorts of things. So things like weightlifting are important things like yoga and stretching. And one of the fastest sports that I encourage all the people who want to play the kind of video games, is badminton badminton is

not something you played when you're a kid. If you just Google the World Championships for badminton, you'll find that it's one of the fastest sports on the planet. If you want to get quick, do badminton, do other things like ping pong, and then you want to be able to do things like juggling, and also cursive. cursive writing is really important. Because what it does is it gets you from one idea to the next idea to the next concept, another idea like cooking. So the way that I encourage training is not just doing your specific sport, you've got to be a rounded individual. And you've got to find a good coaching staff that puts you in a position of not just doing the one sport that you think that's only going to create limited numbers of connections. You've got to be able to do multiple things at the same time. So I know that that may not be necessarily seem like there's a lot of wisdom in that. But the reality is you want to create connections, you want to be able to stimulate your taste, touch, sight, sound, and smell, not just your finger speed to your eye speed to where the target is going, you've got to have a multiple understanding of those different things. And I find that those people, they last a lot longer and they're not as stressed, their scores become higher, their kill rates become better, and they become more efficient, they don't get burned out. So the goal is to really get these kids, they can go beyond 23/24 and still have a really good function ability. And we also take a look at what are you going to do after gaming is done, right? We've got one of the kids who's 29, who wants to be the world expert in this particular sport, right? Is it possible? Well, we're in the process of finding out you know, there's really not a whole lot of limitations. You think that kids that are 13 or 14 may be the most efficient, but the reality is, the more networks you can build, the more efficient you can become. So I don't really have an age limitation, I don't think once you get past 13, it's too late or past 18. I think at any particular point, you can build up enough networks to make you more efficient at what you're doing. And that's really what it is. It's about efficiency.

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We're talking the summit, of course, we're going to have some people that might look at this gaming, summit talk is a wow, I need that because my kid spends a lot of time on games or whatever, but there's gonna be a lot of doctors here. So what I'd like to maybe to go into is when somebody comes in for an exam, or they're, they're working with you, what type of equipment do you use? And how do you get trained on it? I mean, how, what's the training involved?

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I'm sorry, I lost. I lost the connection. Dr. Porter, can you ask the question again, sir?

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Yeah, I was saying, we have a lot of people who are going to be watching this that are just parents that want to know, Hey, what's going on? My kid plays games, what's going on with

their brain? And it sounds like it's not bad. It's just you know what I'm doing it for a long periods of time, and get out and do some other things. But we also have doctors who are going to want to, you know, start integrating this into their brain. Practice. And um, just you know, when you evaluate them,

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what type of

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tools do you use? Where do you get the training? All of those kind of things can just go through just like what would be the step for someone who's knows nothing about neurologically based? anything right now? They just they got on here, maybe they would do maybe they're an MD, maybe they're a chiropractor, and they want to do this kind of practice. What do you is your first steps you think?

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So I think regardless of what your educational background is, and if you want to help some of these kids, you've got to do good evaluations, right? If you want to be able to jump into it, each test, there's basically three different things you're constantly looking for, regardless of your specialty, is you're looking for latency, velocity, and accuracy, which means that the longer that it takes you to do a particular activity, whether it's going to be raising the arm or walking across the board, the more time that it takes to do that activity, the more time the entire system is inefficient. Also with velocity, is it if you Want to be able to do something slow, you want to be able to do it slow. If you want to do something fast, you want to be able to do it fast. And then you also want to be accurate. So those are the three factors I'm always looking at. And then for me, I've got, I've got about 12 or 15 tools that I take a look at. And whenever this is over, I'll be able to have a presentation for the people who want this as far as like, what are the indicators we're looking at for eSports. So one of the biggest things, which is one of the units that I use in my office is something called heart rate variability, which is actually by Brain Tap. And that's a really useful tool because what it's able to do, it's able to give you indication about your sympathetic and your parasympathetic system. One of the other things I'd like to take a look at is I look at oxygen saturation. oxygen saturation is really important. You're looking for those numbers to be over about 95%. The other thing I take a look at is computerized people arbitrary. So I've got a little app on the phone, right that was actually brought together by some optometrist. And what happens is that when you shine the light in the eye, you can actually tell the autonomic function of the eye. And that gives you so much information as to how much what they can what they can see what they can't see. I do testing for smell. I also do some neuro psychological questionnaires. I do what's called a bioelectrical impedance assessment, which tells you how much muscle how much fat, how much water you have. I took a look at

bilateral blood pressure and heart rate because I want to see, what are you pumping? Right? Do you have any kind of asymmetry where you've got blood pressure higher on one side versus the other side? I'll take a look at computerized sensory motor station which tells me you know, can you touch particular items at a particular speed? Take a look at the central nervous system, take a look at the peripheral nervous system. But one of the most important things is that take a look at history and questionnaires, any sort of medical issues, whether it be thyroid issues, whether it be allergies, those are so significant to what's happening with these kids because it affects their sympathetic and their parasympathetic system. Now when it comes to direct gaming stuff I want to see what do they look like at their gaming station? Where is their screen? Do they have a small screen? Do they have a large screen? What is the refresh rate on their screen? Where do they have their? Are they? Are they using a handheld machine? Or are they using a keyboard system? Where is that keyboard position? And also, what kind of clothes are they wearing? Right? What is the temperature in the room? What is the ambient lighting of the room because if you're in a room that's got other visual stimuli, your brain using the parietal lobes will be more aware of those things when it's actually looking at the screen itself. Other things we take a look at our computerized eye tracking. So we take a look at gaze which means you're just to look looking at something, how efficient Are you with that we look at pursuits which are slow movement of your eyes, left and right and clockwise and counterclockwise. We take a look at upto kinetics, we take a look at a couple other things that we can measure, ideally what those things are at. And a real important part of that is going to a functional optometrist. We want to be able to know what you see what you can perceive. And if you need glasses or contacts or prisms or synthetics, and then we also do some biofeedback to take a look at how well can you regulate yourself. So we use Brain Tap with a lot of these athletes with the recovery so that they can feel relaxed, because your voice is so soothing. It just makes everything better, right? It calms things down. So there's a lot of different scientific tools we can use. But if you're a DO if you're a DC, if you're an MD, you use what you've been trained to. And you use those as the indicators. And you look for changes, you look for latency, you look for velocity, and you look for accuracy. So that's just a small picture of some of the tools that we'll take a look at. And I don't use all of them. I use them in very limited portions because one of the things I like to look at is when I talk to the athletes I go, what is it do you that you perceive that you need and then do local isolate examinations and use analog and digital tools That I can go through and say, listen, here's why you're doing it, here's what's happening. And then give them tools to make those kind of changes. And then we retest again. So it's always observation. It's always observation. It's always observation, we create some sort of application and see if we've made some sort of positive benefit. So regardless of your training, use what you've done so far. And you can take a look at several of these things that I've already talked about. And if we want to talk, you know, later or do some other conference, we can go in detail what sort of things we're looking at, what those areas are connected to, how they're connected, and how we can make those more efficient.

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That'd be great. I mean, especially for our Integrative Health site, where we have doctors go for different cee credits and things we're putting out together down in Florida with our doctors that are all who's our chief science officer. That'd be great. I mean,

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you have so much information. I mean, we met when I got your

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CD, I thought I was getting the Encyclopedia Britannica or something you've, you've been to a lot of trainings, you've spoken a lot. You've been all over the world. And one of the things I know that our Our viewers here on the summit are going to notice, what are the five ways to save the brain after computer gaming? What do you do? Because some people aren't going to go get chapter go do these things. But maybe they could use some of these tips you're, you're sharing about how to save the brain. Because

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most people understand

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in any athletic performance, when you stress the body out, you need to have recovery. So what are you recommending to save the brain after computing?

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So there's five different things we're looking at as simple as what they are, these work the best for me. And this is my system for what I took a look at, and how to save your brain after computing. Number one is sleep. Number two is hydration. Number three is food and supplements. Number four is walking. And number five is getting out of the digital world. So those are the five most important things to let so let me go over those. So when we take a look at sleep, the Mayo Clinic came came out with a study and found that for you to get the best type of recovery you need A minimum of six hours to stimulate something called autophagy. Right, which means that your brain needs time to be able to go through a self cleaning process and get rid of the garbage. So if you're not sleeping and you're not recovering, it doesn't matter what you're doing, you're never going to be anywhere because what's going to happen is you're constantly going to behind. And when you take a look at some of the research, you know, I'm always hoping that I can catch up on sleep, but I haven't found a certain study at this point that goes, you can catch up on sleep. So as long as you're getting a minute, a minimum of six hours, that's going to be the important thing. So you can simulate that autophagy where you've got the self cleaning process. The next thing is going to be hydration. So my general go to rule is you

want to drink between one quarter to one half of your body weight in ounces per day. So if you weigh 100 pounds, half of that is 50 and other half of that is 25. And a pretty good zone is between 25 to 50 ounces. Now along with a hydration I think it's really important to add a little bit of lemon. One of the other things that it does is it creates a neutralization for a certain group of chemicals. But lemon, even though it's acidic, it acts as a buffering solution that is able to neutralize your pH and a lot of disease processes move towards being acidic. And the lemon juice in the water just a little bit, moves that pH just a little bit, which may make you feel just a little bit better be able to recover. Now, when it comes to food and supplements, you've got thousands of different diets out there. But for me, the thing that I find that's going to be the most significant is really you are what you don't eliminate. So if all of a sudden you try to eat all the vegetables, you try to eat good, it's unrealistic. The first thing is, what do I need to remove that no longer works for me? So one things you can do is you decrease high sugary foods and you decrease processed foods. The next thing is you take a look at removing colorants, dyes and preservatives. Because a lot of these things, what they do say create order immune disorders, which means they start attacking your cells. So if you're decreasing sugary foods, decreasing processed foods, allergens, colorants, dyes. So the biggest source that I like to go to is called the Environmental Working Group called EWG. org. And that's where I get most of my resources. Because what they do is they scour the research and they go, listen, here are the things that create the most amount of issues. There's no cost to it. So EWG.org. I don't have any financial connection to it, but they do some high value. And then when it comes to adding things, there's three things that I add with most of the athletes. Number one, it's going to be fish oils, because that adds good fat. So basically, our cells are we've got fat along the outside, we've got vitamins and minerals on the inside, along with protein. So if you add fish oils, what you do is you add a protective layer around the cells, where the cells can bring in good nutrients and also eliminate things that they don't. The second thing I like to do is I'd like to Added vitamin B as in boy, because 80% of all the cells in the body require a vitamin B. And if you're not doing that, you're robbing the cells. So you want to make sure that when you take a vitamin B as in boy, you get 123569 and 12. There's a lot of really good companies out there that supply that, but make sure you get all those, and the next one is going to be byn. D as in David three. So you want to do fischels want to do vitamin B, and you want to do vitamin D. So when it comes to food and supplements, number one, you eliminate the things that don't work for you. So things like high sugary foods, processed foods, colorants, dyes and preservatives. And then fish oils, vitamin B as in boy and vitamin D as in David. So we've got sleep, hydration, food and supplements, and the fourth one is going to be walking. The great thing about walking is after 20 minutes of walking, you create something called enzyme activated lipase, which the research shows that for 12 hours you burn fat So if you want to be efficient, according to the study that I read, if you walk for 20 minutes every 12 hours, you will be able to burn fat for 24 hours. So that's pretty significant. So the fifth thing after sleep, hydration, food and supplements and walking is get out of the digital world, you want to step away from the keyboard, you want to

step away from the screen, get away from your cell phone, from your tablet, and from social media, and go meet with people that are your friends start interacting in an analog world that is near and far up and down, that has taste, touch, sight, sound and smell. You want to be able to activate all those receptors, and you want to do analog activities that is physical, intellectual, emotional, social, spiritual, and sexual. So when you get out of that digital world, and you begin interacting, then you start really recovering, then you really start saying, This is what I want to do. So But by Big Five are sleep, hydration, food and supplements, walking and getting out of the digital world.

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That's great. That's a great summary. And also

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we want to move on because some doctors I know a great number of our doctors have asked, because we've fallen into the neurological space almost by accident with Brain Tap. We didn't seek out doing that we actually started for pain control with biofeedback, but it evolved since the 80s, of course, and what we're doing now with Brain Tap, we're doing a lot with neurological so we're getting doctors that have no idea no concept how to do this, but you're involved with the group I after which I've been going to for years. I love the group, Dr. Melillo and a few others that I've seen present there and I know you also were a trainer for Dr. parrots group. So tell us a little bit about what's happening in the virtual conference it's going on and how people can learn more about just doing neurological work.

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So with the new things that have changed In the world, we've we've moved our conference this year to a virtual. And so this is actually our 11th. year. The This is we've changed the name of the organization now because we really want to bring in all sorts of disciplines. So we are the international associate where the interdisciplinary association of functional neurosciences and rehabilitation. And so what we want to do is we want to bring all specialists together, all the way from massage therapist, to trainers to PhD, the surgeons and the reason is because so many of the different connections have gotten neurological issues. You don't have to get a master's degree or a PhD in functional neurosciences. But if you have an idea of what certain issues look like, at this conference we've got coming up between October 8 and 11th. The theme for this year is 2020. Brain asymmetry in the future of functional neurology, and that's it, I asked her org which will have the link and it's after conference 2020. And so this shear is the most amount of continuing education units we've ever had. So over the four day period that's going to be online. We've got 30 hours, 30 continuing education hours. So we're going to have nurses, physical therapists, occupational therapists, speech therapists, all these individuals coming to understand, how do we make this world a little bit more efficient. So for functional neurology,

what we take a look at is how efficient is the system when it comes to taste, touch, sight, sound and smell. So we've got several lectures come in this week, we've got eg testing. We've got interdisciplinary protocol for concussion care, which we're calling the masters of concussion, because we've got we've got two optometrists that spend a lot of time doing concussion. We've got Dr. Dan Fitzgerald, who has one of the largest concussion clinics in the Midwest, who has been at this for about 30 years, and she is going to be able to teach us things we've never understood before. So one of the biggest things that happens in concussion is that We've got so many people doing so many different things. And we need an interdisciplinary approach. So we've got several of us that are going to be teaching in that course, that's really open to all individuals, you've got your massage therapist, you're a trainer, you're your coach, you want to see these things. We want you to understand what it is because when you see a problem, you may not be able to take care of what it is. But if you've got a resource of somewhere you can go to that can help you understand, that's going to be significant. So this year, Dr. Brandon Crawford is also given a second lecture on the neurology of sex. 50 shades darker, right? So it's something that's going to be applying to everyone. And we're also going to be taking a look at reversing neuropathy, and multiple other subjects. So we want to train individuals. We want to cross train them, we want them to have a great understanding. right because we've got neurosurgeons are speaking, we've got people that don't have degrees that are speaking, right. We've got people that are movement specialist, because everything is connected, like I said earlier that over the last five years, you More than we've known in the last 500 years. So, I after it's really a place for all specialists to come together, no matter what your background to understand, how do we make people more efficient? How do we, how do we make them the best version of themselves? And how do we do that not using drugs or not using surgery, if you can use those things, fantastic. A lot of our probe routers are not are not prescribers. So we want to make sure they understand about medications. We want to understand what kind of relationships those sort of things have. So we've got Dr. Ryan cedar Mark last year, we spoke about basic medications, what we need to use what we need to look at, you don't need to be a prescriber, but you want to have a basic understanding of that. So really, I after is an interdisciplinary group of specialists looking to solve problems in the neurological world.

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Right. And I can't

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stress it enough. Every Brain Tap doctor should be tuned into that conference, because I get asked a lot of questions and I have to refer them out to someone I know from if not because That's not my specialty, you know, when they get deeper into some of the issues that are going on. This is a place where you can learn from the world's best. I mean, these are, I had a chance to travel with Dr. Melillo through Sweden. And even though I don't do reflex, primitive reflexes, I

learned all about it. I was fascinated with it. I saw it about four times during that trip. But you know, those kind of things are incredible. I think every doctor, even if you know, if you think you know these things, this is a great time to refresh what you do know and find out what's new, like you said, the last five years, you've now know more than we did the previous 500 years or whatever. So and we know that the science is improving the way to measure is improving the and you have a group that that works great together they're willing to share you're going to have like you said there's going to be people in in the field divide here to the field of massage therapist. I mean, it's a big gamut.

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So in

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so with our group, we have 2300 clinics out there with Brain Tap, so I'm hoping we get them all to tune in and watch that, at least to tune into the parts that they, they want to, that's all it's a four day event, we're going to give you the information, you're going to go to the if you're part of the VIP package, you can go there, Dr. Rosenthal is going to give us some additional information that goes beyond what we have here. So that we can share with you one of his PDF books that will give you some, some real strategies to start doing that. But one of the main strategies everyone should be writing down right now is the eye after conference, you should attend that that's if you found this interesting at all, even just a little bit. It's going to go way beyond this, because you always bring together great people. And these people are willing to share the best they have

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in an hour. I mean, it's it's like

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you know, if you want

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to learn more from that person, you're going to be able to go and learn more from them because it's all about learning growing together. And just like you talked about the glia conference, we're all little glial cells running around putting these putting these groups together. So it works really well. So anything. Thanks a lot. You've given us so much great information and I know gaming is a concern. For a lot of people, but you've given us some tips on how to recover from that, which is wonderful. Anything you want to leave our viewers with before we end this on a call today.

40:10
I do I have three books, and you'll have a list of those things. These three books for me had been really significantly helpful and be able to look at gamers. The first one here is the book on brain and behavior, which really explains a lot of the basis for the neurological disorders, and really how you can address those. The other thing is a book by age Moeller, on the malleable brain, the benefits and harms of plasticity of the brain. But most important, the best book I've seen in the last two years on gaming is by Celia hodan, called the gamers brain. It's about the user experience, and it gives some really great highlights. So the most important thing is to get the information out there. And it doesn't matter who's right. It only matters what's right. And when you find that group of people, build those networks, build yourself And become a better version of yourself.

41:03
That's great. And you're a great example because I don't know when you sleep, you're always learning developing or showing new books, new, new, exciting things going on in the neurological fields. So you must, it must keep you awake at night just knowing all this bubbling in your brain because this is this is wonderful what you've shared today.

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Well, I just feel, Dr. Porter, that we're in the golden age of education, that we have access to so much information. Unfortunately, what we don't have access to is wisdom. So it's really finding the group of people and finding your tribe, taking these ideas and these concepts in these papers, and doing something incredibly valued that valuable that goes beyond you that actually serves the population of the people that you're connected to. So the more information we can learn, the better we can do to make the next person better than we were. And I think that's really what having mentors and mentees is about is that the person that learns from you, you should be proud that they are better than you can ever be sharing that message. It's about getting together at the right people with fantastic ideas and becoming better versions of ourselves every day. And realize that I may not know what I just thought that I know. Because by next year, some paper will come out and prove a different and you've got to be able to willing to say, I'm going to embrace the new Why? Because it's better, it's more efficient, and it becomes a better version of who you are.

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That's wonderful. Well said. And so we've heard now from Dr. David Rosenthal, who's an expert he's obviously an optimal performer he works without the will performers around the world seek out his knowledge, he's trained literally thousands of people. So let's let's go follow up and get some more information head over to the VIP section. When you're done here. Tell all of your friends and family members anybody playing a game they need to watch this video, learn about

it, tell your doctor about it because this is going to be the thing of the future. The brain is where it's at. Go to the grocery store, you're going to see half the magazines on the rack have a brain on them because We all have something in common. They're we're all getting better looking and more intelligent with age. So we need to have our brain along with us. So when we do that, so I want to thank you again for being so willing to share so many people in your situation in the past, have wanted to hold those guard those secrets, because you have something that is revolutionary, and, you know, you're willing to share it with the world. So I

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appreciate that. And we appreciate your time. So

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thanks again. If you're staying tuned on the optimal performance summit, please stay tuned to the next speaker. We'll be right

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back with you. Thank you. Thank you, Dr. Porter.