

**THE MODEL  
HEALTH  
SHOW**

EPISODE 393

The Extraordinary Link  
Between Exercise, Joy,  
And Human Connection

With Guest Dr. Kelly McGonigal

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**Shawn Stevenson:** Welcome to The Model Health Show. This is fitness and nutrition expert Shawn Stevenson and I am so grateful for you tuning in with me today.

I've got a question for you— have you ever noticed exercise having an impact in your life outside of the physical benefits? We obviously know that exercise has tremendous benefits when we're looking at body composition, for example. Lifting weights has been clinically proven to boost the production of anabolic hormones like HGH and testosterone and things that help to protect your muscle mass.

And activities like walking have been associated with a loss in belly fat like a study that was done by the good folks up in Canada found that a 14-week study of walking for an hour a day, test subjects lost 20 percent of their belly fat without changing any other lifestyle factors, so no diet changes just walking for an hour a day. We know that exercise has these remarkable physical benefits.

But what I want to share with you today and what's going to absolutely blow your mind is that exercise has benefits that dive far deeper into our lives than just the physical aspect. We've got the very best person in the world to talk about this subject matter today so make sure to get your notebooks ready, really tune in, listen closely because this is going to be a game-changer.

And just another quick note about the benefits of exercise, especially during this time of year, is that the simple act of walking and this was found by researchers at Appalachian State University found that walking just for 30 minutes a day can give you an instant surge, and instant boost in your immune system function, specifically the activity of your natural killer cells, NK cell activity which are like immune system warriors, they are the front line soldiers that go out and take out pathogens.

And they are adaptable, they have the ability to adapt and to take out because we're exposed to a variety of bacteria and viruses and things of that nature, so

we need an immune system that is intelligent. Walking, the simple act of walking can help to boost that activity.

But, of course, our nutrition matters a lot at this time of year as well. And you know that I'm a big fan of the mushroom coffee from Four Sigmatic but I don't talk often enough about the fact that Chaga mushroom is in this medicinal coffee mixture. And Chaga has been clinically proven to boost your NK cell activity upwards of 300 percent and so it's also an immunomodulator, so it helps your immune system to become more adaptable and to change. If your immune system is running a little bit hot, like you would see with folks that are experiencing some autoimmunity, it can help to bring it down.

And if your immune system is running too low and it needs to boost itself up, if it's dealing with some form of pathogen or an interaction from the external environment or internal environment through our food that it needs to boost itself up to take care of, to keep you healthy, it has the ability to do that too. Drugs don't have that ability, they're usually pushing your immune system in one direction or the other.

These medicinal mushrooms have that intelligence to be an immunomodulator and I think it's one of the most remarkable things. And another thing about Chaga that I want to share with you is that it's been found in clinical trials to actually increase your body's production and availability of superoxide dismutase which is really known to be a master antioxidant.

And we can get antioxidants from our food, absolutely, but they don't have the same power as in— I'm a nutritionist so food matters a lot, but our body's own production of endogenous antioxidants work hundreds of times more effectively in our body than we get from food. And so again, superoxide dismutase that production in our body is of the utmost importance for protecting our tissue. So one of the big things that it does, it protects our DNA from damage which is kind of important because that is determining what kind of copies of you are getting printed.

And Chaga has the ability to boost the production of superoxide dismutase. And this is found in that medicinal mushroom coffee formula that I enjoy just about every day. They've got the Cordyceps formula that has Chaga and the Lion's Mane formula has Chaga in there as well, so it's just, I love it so much and it's an enjoyable part of my day as well, and blending in some high-quality fats, and

maybe like if you want to sweeten it a little bit, a couple of drops stevia in there, flavored stevia, maybe a little cinnamon I had in there today, but it's enjoyable part of my day but it gives me all of these remarkable benefits without the common crash you see with typical coffees out there.

Because the formula is melding some high-quality organic coffee with these medicinal mushrooms and creates these really rounded out experiences for your body and your nervous system, it's not just pushing that stimulant button versus giving you something that's really holistic and uplifting your nervous system and your endocrine system in a variety of different ways.

So again, I am a huge fan of the Four Stigmatic coffees and if you're not a fan of coffee you can do Chaga, they just have a Chaga elixir that you can get as well, but definitely pop over there check them out ASAP, it's a huge part of my strategy moving forward in 2020 and I think that it should be a big part of yours as well for optimizing your body and your mind, your performance and really crushing it this year.

So go to [fourstigmatic.com/model](https://fourstigmatic.com/model), that's F-O-U-R-S-I-G-M-A-T-I-C.com/model, you get 15 percent off everything that they carry. So head over there check them out. And on that note, let's get to the Apple podcast review of the week.

**iTunes Review:**

Another 5-star review titled "Our personal vibe check" by Hizelle: "This podcast has truly reshaped my mindset and my daily habits. Shawn not only has wonderful lessons and reminders for all of us, but he also acts as a personal vibe check when you listen to each episode. I recommended this podcast to so many and I won't stop till everyone hears all the knowledge that Shawn drops in each and every episode. Thank you, Shawn, for spreading magic and hope in our lives."

**Shawn Stevenson:**

I love this so much, vibe check, it's a vibe, I love that, thank you so much for sharing that over on Apple Podcasts. And listen, if you've yet to do so please pop over to Apple podcasts and leave a review for the show, I really, really, really appreciate it so much.

And on that note, let's get to our special guest and topic of the day. Our guest today is Kelly McGonigal, Ph.D. and she's a research psychologist and lecturer at Stanford University and an award-winning science writer. And she's the author of the international bestsellers "The Will Power Instinct" and "The Upside of

Stress." All the while she's also taught dance, yoga and group exercise for the past 20 years.

I first learned about Kelly through her, definitely one of my top 5, if not top 3 all-time Ted Talks. And the reason that I rank the Ted Talks for myself personally in such high esteem what gives it that high placement is that they change my thinking. And so her Ted Talk as one of those that was right up there at the top that actually changed my thinking, this was many years ago.

And I put on a list of a very small list of people that have impacted me that I want to have on the show to provide their insight for you. And it's such a great gift for me today to have her here and to share insights with you so, I am really excited about this. And just leaning back on her 20 years of experience while being a lecturer and one of the top health psychologists in the game, but she's been teaching fitness for 20 years and this data has an incredible cross over.

And she's here to share with you what she has compiled in her new work "The Joy of Movement" and again, this is an absolute game-changer. I'm very grateful to have for you today Dr. Kelly McGonigal and let's jump into this amazing conversation.

**Shawn Stevenson:** So you are in San Francisco?

**Kelly McGonigal:** Palo Alto. Very close.

**Shawn Stevenson:** Okay, I'm super new to the area, I don't even know— is that by, Stanford is there, right?

**Kelly McGonigal:** Yeah right, so I'm at Stanford and Palo Alto is the town associated with Stanford. And Facebook.

**Shawn Stevenson:** Okay, how far is Berkeley?

**Kelly McGonigal:** Now in traffic, it could take you like 2 hours to get there, I mean it's only like 30 miles but The Bay Area traffic is pretty nuts.

**Shawn Stevenson:** Dang, I haven't really explored, I'll go there and speak and then leave immediately, so I haven't really got to look around. I've been to, have you been to any CrossFit places there by chance?

**Kelly McGonigal:** No, I haven't.

**Shawn Stevenson:** I've only been to one ever my life and it was there.

**Kelly McGonigal:** So CrossFit also scares me, but I have great stories about CrossFit, there's a lot of movement forms where I feel like, like if there's a workout and it endorses vomiting I'm like, "That's probably not going to work out for me." I just don't want that when I work out but I like the idea—

**Shawn Stevenson:** Some people's goal is like, "I've got to puke."

**Kelly McGonigal:** I know, that's what I'm saying, like yes, that's not my goal.

**Shawn Stevenson:** Me too, I'm not attracted to that at all. That's so funny you said that.

**Kelly McGonigal:** But I love the spirit of it and like I was so— one of my favorite people in the books she was at my book talk yesterday Reverend Katie Norris and I love the idea that there would be a Reverend who also coaches CrossFit and she sees it as part of her ministry. I love that and there's so much transformation happening at CrossFit, bit again, it's that matching process you have to be the right person for the right environment.

**Shawn Stevenson:** Yeah, that's so true, that's the thing too, but it's so funny you mentioned the throwing up part. I just went with my neighbors to the track this past weekend and it was like both of our families and shout out to Malakai who came up to me there, he's Olympic athlete and he listens to The Model Health Show, and now he coaches Olympians. And so we were chatting for a little bit, but that was before we worked out.

So we did some sprints and sprint drills, we did a few 110-meter sprints and then we did, they got these massive stares at UCLA which was super fun. And I'm just doing my thing because I go there at least once a week you know. I mean generally, it's once a week. And my wife hadn't been there for a while, maybe a month and a half, and after I think maybe she got 2 sets of the stairs done and then she was over by the trash can, like letting it go.

And then she just turned around and I went to like hold her hair, like a good husband would, I guess, or a best friend. And then she turned around and she

was smiling, she was like, "Okay I feel better now let me finish." I was like, "Isn't that meaning you're done?" But yeah, some people and it's just like, it's a part of the process.

**Kelly McGonigal:** Yeah, like the athletes I talked to, they are not really phased by anything.

**Shawn Stevenson:** Right, I mean some of the stuff like they're on the bike and they will just pee like you know what I mean? So I'm curious, I'm a big fan of yours and just going back and watching your original work, Ted Talk and stress, and I just immediately, I always think about like, "How did she get there?" Like, "What got her interested in this aspect of health?" So first of all, number one what got you interested in psychology and what got you interested in the psychology of stress?

**Kelly McGonigal:** So in psychology, there's this rule everyone talks about that all of the research is me-search. So if you want to know like what my issues are you can just look at the topics that I've worked with. I became interested in psychology because in very early age I wanted to understand how to be happier and how to deal with difficult things.

I am someone who's experienced chronic pain since I was a little kid and some part of me just recognized that it had something to do with stress. And so at a very early age, I was the kid in the self-help section of the bookstore buying these really inappropriate psychology books. I remember like one was "Charisma," and one was like, "How to make any man fall in love with you." I was like in fifth grade.

But there are also like the good books about how your thoughts affect your mood and I just was, I don't know, I guess I got obsessed early on with this idea that there are things you can do that have an influence on your wellbeing, that really are in your control, that you can change the way that you think, that you can be interested in human nature that you can understand yourself better in a way that allows you to avoid some of the classic pitfalls of being human and also connect with others.

That's part of, so all research is me-search and also I'm really fascinated by what it's like to be another human being, there's something so interesting about human experiences and I found that psychology gave me more insight so that when I'm talking to people or connecting with people, there is something about understanding the science of how the brain works and how humans interact

that I feel like it makes it easier to connect and have a really broad and deep empathy. So those were probably the 2 things that drew me to psychology.

And then health psychology just because, as I said dealing with pain and with stress. And also wanting to help people who were in situations that they would not have chosen I think is another kind of underlying theme that has attracted me. This idea that you can get stuck in situations whether it's trauma, or loss, or depression, or health crisis that so many people are living in situations that they would have never chosen for themselves.

And I'm really interested in the idea that no matter what your circumstance is, there's a way to experience meaning and connection and hope. And so a lot of the work that I've looked at is like what are those strategies, how do humans do that.

**Shawn Stevenson:** Yeah, this is so fascinating I love that you said thinking about what it's like to be another human being. And that just like lit me up inside because it's kind of part of the reason I'm doing what I'm doing as well, and that's something that we can never truly experience, but we can work towards it. I literally think about this all the time.

**Kelly McGonigal:** It's so interesting, I heard another author speak recently she said, "Yeah I just don't really spend much time thinking about what it's like to be other people and how other people think," and I was like, "What? That's the most interesting thing."

**Shawn Stevenson:** Oh my gosh. I'll be like a walking or maybe you know I'll be at a mall and I'll just think about, "Wow, everybody's having a different perspective of the same event," and I think like, "Wow, all these people have their own stories and their own lives and their own sadness and loves."

**Kelly McGonigal:** Yeah, everyone is the hero of their own story, everyone wants to be happy and free from suffering and everyone has a universe that revolves around them.

**Shawn Stevenson:** Yeah, that's so crazy and it's so cool but we're all part of it too.

**Kelly McGonigal:** Yeah, and so many of the things we do that create suffering in our own lives and in the world are because we forget that and we're so convinced that the universe only revolves around us. And even just having that insight that every



person you meet, the entire universe revolves around them too you can make it, it's just, it's easier to connect and to consider.

**Shawn Stevenson:** Yeah, facts. So you mentioned in your story you're dealing with chronic pain even as a child. So tell me a little bit about that.

**Kelly McGonigal:** I know it's funny, so first of all, I should say I've abandoned trying to fix it so nobody needs to send me tips, just whenever you start talking about chronic pain you know you get like the emails like, "But have you tried blah blah blah therapy." I have a nervous system that seems to produce pain the way other people experience fatigue and hunger.

I wake up in the morning usually I feel fine and as I go through the course of the day it'll start with something like a headache and then it goes into more systemic pain just like that's what my body and nervous system what they do when I engage with life.

And my triggers are anything that requires a lot of engagement, like talking is a huge trigger for me so what am I going to do, you know put myself in exile and become a silent monk or a nun? So I've learned to live with it, yes, but early on one of the things that when you experience chronic pain is that it's invisible to other people.

So one of the great almost blessings of having pain when I was really little is first of all nobody believes you and you start to understand that people can be carrying things inside of them that are invisible to others but that are real.

And so everyone I interact with I have the assumption there is something going on, they're carrying some burden that maybe is not visible to me, that this person could be suffering in any number of ways and to kind of make that the default and to not be surprised by suffering, that also is something that I think is partly what drew me to psychology because if you understand that everyone is carrying something there is a sense of urgency to want to try to help relieve that suffering.

**Shawn Stevenson:** Yeah, that's such a really powerful insight I think everybody should kind of get this. I felt the same way especially if you look fine, like if you can't see the visible pain.

**Kelly McGonigal:** And that's true for so many things right with mental health issues and addiction and grief, so much of it is invisible.

**Shawn Stevenson:** Yeah, you look fine. And I just thought about when you said, I thought about the movie Old School and then Will Farrell was like messing around the dart gun, I mean a tranquilizer gun and he shoots himself in the neck, it was like, "Dude, there's a dart in your neck."

You know, but you can see that this is a problem, or somebody has a cut or a burn, you can see that there is a trauma there or a pain associated with it, but if somebody says, "I have back pain," because that's what my issue was, it's just like, "Well you look fine," walk it off but you can be in so much pain and nobody else can really see it.

**Kelly McGonigal:** Yeah, my first book was about chronic pain, I can't tell you how many people in my life were like, "Why'd you write a book about pain?" They had no idea that I even had experienced that let alone was interested in how to help it.

**Shawn Stevenson:** And it's kind of like this is a superpower for you in a way because your nervous system is different like you're kinda hypersensitive, it's like a cool dimension and it has lead you into all these interesting places and research. And so if you can just touch on a little bit, because you study stress, and one of the big takeaways was stress, the impact that stress has on our health really depends on how we perceive the stress.

**Kelly McGonigal:** Yeah, often, yes. So that's called the stress mindset effect and it's this observation that, so stress can have positive and negative effects and often it has both at the same time, it's not the case that stress is always toxic and every time you're in a stressed-out state it's like your body betraying you, and you're destroying brain cells— we have a lot of false ideas about stress and the main one is that it's always a negative state to be in and it only has negative consequences for your health and your happiness.

So the stress mindset effect is all of this research shows that people can be protected from a lot of what we think of as the inevitable consequences of chronic stress or severe stress if they hold certain beliefs about what it means to be stressed and their capacity to deal with that stress. So there are a few key beliefs that seem to make people really good at stress.

So one of the first believes that can make people better at stress is the idea that

stress is energy you can harness and that when you feel the symptoms of stress maybe your heart is pounding or you're breathing faster or you feel butterflies in your stomach or even muscle tension, that it's a sign that your body is getting ready to rise to the challenge.

And this is, it's actually true but what's interesting is as soon as people decide to embrace their stress and harness the energy, it actually changes what's happening in your immune system and your cardiovascular system and in your brain that makes the stress response both healthier and more skillful so that you actually are more likely to perform well under pressure, you're more likely to be able to connect with others.

So the idea kind of allows that natural capacity to emerge, that's one idea. Another idea is to understand that you don't have to do stress by yourself. So many of us feel like stress is a do-it-yourself project, everything in life is a do-it-yourself project. "I alone can deal with this, I don't want to be a burden on others, nobody understands what this is like," all those different ways we can feel alone in our stress.

And people who have a bigger than self mindset and understand that stress is often a signal that you need to reach out, that you're feeling stressed because you need help or because you're not the only one and sometimes your body and your brain will make you feel lonely or anxious or overwhelmed in order to nudge you to connect with other people who are going through the same thing or who have resources to support you. And so people have that mindset.

Again, they tend to be much more effective at dealing with the big stress and also they tend to have a stress response it's healthier that's good for the heart and good for the immune system. And the third key idea is the belief that even if you're going through stress you would never have chosen for yourself that it is possible that it can bring out something good in you. So maybe there's nothing good about the situation like the situation sucks.

And also, we know that situations that are traumatic and stressful can bring out our strengths, can help us re-prioritize, understand our values, strengthen relationships, point is in a new direction that that capacity to learn and grow from stress is part of our, it's in our DNA and people who believe that, again, are more likely to access it.

So when you have those mindsets that stress is the energy you can use, that you don't have to do it all by yourself and that it's possible to learn and grow from any situation. People who have that stress mindset, they just are better at stress and it doesn't mean it's going to protect you from everything that you don't want in life, but man, it just makes people healthier and happier and better able to experience the meaning even in their stress.

**Shawn Stevenson:** Yeah, and your data show that folks who have that perception live longer, tend to be healthier.

**Kelly McGonigal:** Well yeah, so it's not like, it's not my little study that I conducted on the side right, there are major epidemiological data that when you hold some of these beliefs you live longer, that stress has less or even zero impact on whether you develop new health problems like heart disease.

Yeah, there's a lot of big data sets suggesting that these beliefs and the beliefs that stress can have a positive effect, that stress is not only and always harmful for you, that those beliefs predict things we really care about like including if you're still alive in 10 years.

**Shawn Stevenson:** Right that would be cool. This is so cool because this is 2020 right, and I was just thinking about already the person who's going to live past 120 years has already been born, you know, 150 years according to the data which is nuts. I was just thinking a lot of us listening, we might make it to 3000 which is just super weird to say that, is it 3000 or is it—?

**Kelly McGonigal:** 2100?

**Shawn Stevenson:** Yeah, 2100.

**Kelly McGonigal:** It's like damn, you must know something I don't know.

**Shawn Stevenson:** I was about to say 2100 Andre 3000 jumped to my mind from outcast and I was like I am going to be Shawn 3000. But it's so amazing that we have, and it's because of data points like this, this is just bringing us back to the things that our genes expect from us, that unlock all these "longevity genes" and a big part of this, this is the natural parlay into your next book which for me, I thought this was a natural transition with "The Joy of Movement" when we're talking about exercise we tend to think about, number one it is a stressor but it could be a

hormetic stressor which gives you benefit.

But also stress relief, people tend to think about exercise in that context. But your data when people think about exercise we tend to think about weight loss and we tend to think about weight loss like that's pretty much a thing connected to it but your data is shown, you don't even talk about that in the book, which is so beautiful.

**Kelly McGonigal:** Yeah, I wanted to give people another way to think about movement that if you're motivated by weight loss and it's working for you it's like that's probably already happening I don't think people need more information or encouragement about that.

I feel like so many people don't understand the effect that exercise has on mental health and on belonging and on resilience and that it's so profound, I mean you said it's what our genes expect from us that when we move on a regular basis, when we are active, we are able to access the parts of our human nature that help us thrive and that literally produce joy and allow us to experience joy and meaning.

So I just, I decided to leave the whole conversation about weight aside and say like it doesn't matter what your size is or what your health goals are, or what your physical goals are, you don't even need to have physical goals, you don't need to have weight loss goals to want to embrace movement as something that is going to truly enhance every aspect of your life.

**Shawn Stevenson:** Right, because of the physical aspect that you do talk about is how movement, physical activity literally changes the structure of our brain.

**Kelly McGonigal:** I know, and in ways that you, if people understood this, I feel people be lining, like people don't exercise all day so there are very few things that can do the first thing, which I'll mention, which is that it sensitizes your brain to pleasure.

There's nothing you can do that actually changes the structure and function of your reward system the way that exercise seems to do it and that it teaches your brain to expect things to be pleasurable and it enhances your brain's capacity to enjoy everything from good food and a beautiful sunset to interactions with your kids or with your friends to anything that we find pleasurable.

It actually, it amps up your reward system, it makes it more robust and responsive, endorphins work better, endocannabinoids work better. And like I said, I've literally never seen anything in the research that has that effect on the brain other than deep brain stimulation where you literally have to like surgically implant an electrode into your reward system and wear like a pacemaker for your brain.

It's one of the cutting edge treatments for depression and it may also help people recover from addiction because addiction can really mess with your reward system. Other than implanting an electrode in your brain and literally giving your reward system an electric shock continuously to try to wake it up.

Exercise seems to be the only thing that does this. And think about what that means for your well being. If everything that feels good feels better. And it does the opposite to you, right, so everything that, so it makes your brain more resilient to stress, exercise is such a powerful anti-depressant so it works on both levels.

And I feel like people have a better understanding of that side of it, at least they've heard that exercise can be an antidepressant or that it can enhance antidepressant medication and therapy. But I feel like this idea that exercise actually makes you better at enjoying things is the thing that people really haven't heard yet.

**Shawn Stevenson:** That's gold, that's absolute gold, it sensitizes you to more joy.

**Kelly McGonigal:** I know.

**Shawn Stevenson:** Or you can do the opposite which sounds very archaic, like let's drill a hole in your head.

**Kelly McGonigal:** Or do that.

**Shawn Stevenson:** Or go for a walk.

**Kelly McGonigal:** I know there are some people who would rather probably get the implants and go for a walk but I think that that is often a mindset. One of the things I don't write about in the book but it sticks with me, there's something that I call "the

joy gap" which is that people dramatically underestimate how good it will feel to move their bodies, if you ask people, "How will you feel when you work out?"

People tend to predict, "I'll be tired, it'll be exhausting, it'll be boring, it'll be unpleasant." And when they actually do it, even people who say that they don't like to exercise what people typically report is, "I feel better, I feel more optimistic, I feel like I can take on the world, I have more energy not less energy."

And so this is a gap we have where we think exercise is going to be so hard and so uncomfortable and so awful that we might think we'd rather have an implant in our brains that would be easier but the actual experience people have is so much the opposite.

**Shawn Stevenson:** Yeah, that's really crazy that we do that. I love this.

**Kelly McGonigal:** And it seems to be, it's a human thing too, it's not like if you are somebody who has that, I mean even me, when I wake up in the morning, I'm like, "I don't want to do this," and me, I'm like in love with exercise and it just seems to be part of how the human system works, there is a part of us that wants to conserve energy and we just need to bypass that and remember what our actual experience is.

**Shawn Stevenson:** I love this because this is giving us more legs to our belief about exercise, we've got it with the weight loss aspect in which you're, this is a game-changer, and I think that this is important for us because, for a lot of us that isn't the most attractive point, it's just not enough.

And so I'm so grateful to have this conversation. Another thing just kind of a small pivot, so we've got the ability for exercise to remodel our brains, but you also talk about how there's like this dump of like hormones into our bloodstream.

**Kelly McGonigal:** Oh my gosh, I'm so glad, yes, that you brought this up. I think this is the most fascinating research. I am interested in all psychology, all neuroscience and this is I think the most interesting finding of the last decade in all of science. And this is the insight that your muscles are basically an endocrine organ that secrete hormones into your bloodstream, that affect every system of your body.



And from a health point of view, your muscles will secrete hormones and other proteins that are good, that fight cancer cells and that are good for your heart health, the things we know typical why exercise is good for your health.

But your muscles, they secrete chemicals and proteins when you exercise that are also really good for your brain health and one the first papers is almost 10 years ago that was published explaining that when you contract your muscles they literally secrete these proteins into your bloodstream that make you resilient to stress and can protect you from depression.

The scientists call them "hope molecules," this idea that literally your muscles are manufacturing like antidepressant molecules and the only way to get them into your bloodstream where they can then travel to your brain is you have to contract your muscles, that's it.

But your muscles are, it's a pharmacy in your muscles and anything you do that contracts them, walking, hiking, running, dancing, weight lifting, swimming, anything, you were going to be dumping "hope molecules" into your bloodstream that when they get to your brain they work as an antidepressant and they also help people recover from trauma. That's a miracle.

Because, of course, it's wonderful when medications work for you, but for so many people medications don't work or they don't do the full job in terms of helping with mental health, and the idea that your muscles could provide you with the equivalent of something like an antidepressant medication, that is I think it's phenomenal.

**Shawn Stevenson:** Yeah. So, so good. And of course, when we're looking at the, and this the great thing about your work too is that we're not discrediting anything else like medications have their role.

**Kelly McGonigal:** So it all, do whatever works.

**Shawn Stevenson:** But we're looking at, and we're going to get in this conversation with potential side effects there and the side effects of exercise, versus that. But first thing, this is for me, it was probably the most fascinating part of the book, it's just like this conversation about what drives— when we think about exercise today, it's for stress relief, for to get fit, but humans we're, if you're talking about the ability that we all have to dump all these positive hormones into our bodies,



humans weren't doing exercise to get in shape 10,000 years ago, like that could be seen as a waste of energy. You say in the book that humans have evolved to extract the benefits for movement in order to engage with life.

**Kelly McGonigal:** Yes.

**Shawn Stevenson:** So what does that mean?

**Kelly McGonigal:** So if you think about this like an anthropologist and you go back to when humans first started to behave like modern humans, where we were living in groups and we started to hunt and gather and forage, that the way humans survive is they had to engage in a lot of physical labor, you had to go out and chase animals and scavenge for dead animals and collect all your berries and your fruit and your roots and all of that that that a couple of hundred thousand years ago humans really had to become more physically involved in order to survive as a species.

And what anthropologists believe now is that basically, the modern human brain is a brain that has evolved and is adapted to find hard work rewarding, that that's the only way humans could survive, there had to be a sense of pleasure and some kind of psychological benefit from using your body to do meaningful hard things.

And one of the ways this expresses itself is the runners high, which is so interesting and we think of the runners high as like an endorphin rush that makes you feel good for running, but like why? Why would your brain produce chemicals that make it feel good to run long distances?

And the idea is that that's an example of how the modern human brain is trying to reward us for engaging with life that if you will get your heart rate up a little bit, you'll put in the effort that it might take to say hunt an animal to feed your family, will make it feel good.

And the neurochemical that seems that underlie the runner's high also helps us connect with others and that's why I think it's so interesting from the anthropological or the psychological side is that something like the runner's high, it doesn't only make it feel good to engage with life and work hard, but it makes you more social version of yourself.

So endocannabinoids, they reduce anxiety, they make you feel good and they also enhance the pleasure we get from cooperating from sharing, so like if I were to get a big kill and bring it back instead of just being like, "I got my food, get your own food," no, it's going to feel better to share, I'm going to feel good about myself for contributing to my family and to my community and that the runner's high is basically creating the neurochemistry of making you that version of a human being, the kind of a human being who is willing to do hard things and it feels good, and I want to be the kind of person who contributes to my community and that that's going to feel good too.

That's amazing and it's not just running like we know about it because people have studied runners but that's the exercise high. And it gets back to this idea that movement is how we engage with life and so we need systems in our brain that reward us for engaging with life. And that functions not just like do physical things but also be part of a community.

**Shawn Stevenson:** You bring about some of the data because when people hear you saying a certain word they might be thinking, "Is she saying cannabis something?"

**Kelly McGonigal:** Yeah well okay, so cannabis mimics endocannabinoids it is a blunter instrument so the runner's high isn't exactly like getting stoned, I mean obviously, people who've experienced both know it's not exactly the same, but yeah, the runner's high or the exercise high increases endocannabinoids which is what cannabis mimics.

So you see some of the same side effects when you exercise most notably people tend to feel less anxious, they tend to feel more sort of optimistic, it reduces pain. So things that cannabis are good for I think people experience the social aspect of cannabis differently, it does make some people much more social.

But the way that it happens naturally with exercises is just a little bit more fine-tuned in the brain, yeah and so you see this interesting effect that natural endocannabinoids tend to enhance movement, where cannabis doesn't always have the same effect but natural levels of endocannabinoids actually tend to propel you to engage more with life, so it actually gives you more energy more desire to move into exert.

**Shawn Stevenson:** Right except there's like a desire to get to 7Eleven.

**Kelly McGonigal:** Actually it does make some people hungry and some people think that it's like working on a similar mechanism as the munchies.

**Shawn Stevenson:** I want to go back a little bit because I love that you stated the fact that it's not exactly, we refer to it as a runner's high but it's really and you said this so beautifully, it's really a persistence high. Let's talk about that.

**Kelly McGonigal:** So again, if this idea is that our brain is rewarding us for engaging with life and doing things that may be a little bit difficult, really it's not about running, it's about getting your heart rate up, using your muscles, may be breathing a little bit more deeply or faster and anytime you're in that type of physical state you can get the same kind of neurochemical payoff.

And so it's been studied in all sorts of flow activities like hiking and cycling and I experience it most from dancing and kickboxing an even flow yoga, so I always tell people, "If you want to experience this just do something that's moderately difficult for you."

I mean that's also the great thing about it, your brain is not paying attention to your heart rate in some objective way like you have to hit this target zone, you have to be this fit, you have to reach the speed; your brain is just paying attention to are you doing something that is moderately difficult.

And so if you're just starting out, or if you have an illness that makes really high-intensity activity hard or impossible, you don't have to go run a marathon, you can get out of your chair and walk. And that can also produce a persistent high. I have a story in the book about that. So it's about finding the activity that where you are able to engage in that kind of flow persist for 20 minutes and then if you find something that you actually enjoy all the better.

**Shawn Stevenson:** Yeah, and we said this before is that the best form of exercise is exercise you'll actually do.

**Kelly McGonigal:** Yeah, and there are so many ways to enhance the exercise high, so like every chapter in the book after that, I sort of like lay that out that exercise tends to make you feel better and make you a more social version of yourself.

But then I go into all of the different aspects of movement that are additional,

like basic human capacities for joy that when you bring them into your movement experience, amplify the joy so much, things like music, or community, or a sense of purpose and meaning and mastery and goals, being in nature, all these things that we know humans are built to enjoy. And then when you combine that with our natural, our brain's willingness to reward us for exerting ourselves, that's when you can really find the work out that changes your life.

**Shawn Stevenson:** Yeah, and this is seen in every culture, it's part of a celebration and joyous meaningful traditions are tied to movement, like dancing, the haka for example or a spirit walk.

**Kelly McGonigal:** Yeah, yeah, yeah I mean, I think people have figured out that when you move your body things that you want to experience are amplified. So if you want to connect with other people we know one of the best ways to do it is to move in synchrony with them.

And you might already like them and you might already care about them but man, as soon as you're moving in synchrony with them, the way that it releases endorphins and oxytocin, all these bonding neurochemicals, it just amplifies that effect, and music does the same thing. And exerting effort and doing hard things together also builds ties and I think this is why you look at every culture. And when cultures want to come together, when they want to strengthen ties or celebrate or deal with tragedy, often it's through movement, it's through the body because whatever is good in us as human beings— that was one of my favorite quotes that human, that movement brings out sort of what is best in humanity. It can.

**Shawn Stevenson:** I love this so much. And we can talk about so many other aspects of movement and physical activity from your book and we're going to do that right after this quick break, so sit tight, we'll be right back.

Today we're in the midst of a new revolution with our understanding of food. We used to just be focused on this macronutrient paradigm proteins-fats-carbohydrates. Carbohydrates and proteins got a pretty good name, but fats were drug through the mud.

Why is that? Because it's called fat! The name implies something different than the other 2 because when we hear the word fat we think about fat on our

bodies. Fat in food and fat in our bodies are 2 totally different things and it's like thinking, "If I eat blueberries I'm going to turn blue," when you think that eating fat is going to turn you fat. It just doesn't work like that.

And any of those 3 macronutrients can actually put fat on your body if you eat too much or the wrong types. Healthy fats, which I'm proposing that we start to call lipids or even energy are incredibly important for every single function in your body.

Your cells, every single cell in your body, we have upwards of 100 trillion cells that make you up require fats to just maintain the integrity of your cell membranes, we're talking about the thing that holds your cells together and enables your cells to communicate. It's very important.

Also your brain, your brain is mostly fat and water, this is why fats are so important. When you're deficient in fats especially the right kinds of fats, you can see some big issues.

So in order to address that some of my favorite things today are MCT oils and specifically if we look at emulsified MCT oils that actually taste amazing and these are medium-chain triglyceride oils that are extracted from things like coconut, palm, and these medium-chain triglycerides have a thermogenic effect on the body which means they are able to positively alter your metabolism. That's number one, the thermogenic effect from MCT oils, positively altering your metabolism.

Number two MCTs are more easily absorbed by your cells, so unlike conventional food of any type that has to go through a pretty arduous process of digestion turning that foodstuff into you-stuff, MCTs are able to go directly to your cells and provide almost instant energy.

And number 3, MCT oils are very protective of your microbiome, there's so much research today about the importance of having a healthy microbiome and the integrity of our gut. MCT oils are one of those things that help to support that because they are especially effective at combating viruses, parasites, bacteria, there's so much goodness that is able to be found in these MCT oils but you want to get the good stuff.

And for me, that's why I go to [onnit.com/model](https://onnit.com/model), that's O-N-N-I-T.com/M-O-D-E-L

to get the emulsified MCT oils which is like a coffee creamer. These are great to add to your coffees and teas, smoothies and things like that to get in a little bit of extra flavor plus all the benefits of MCT oils.

They're easy to stir, so you don't have to throw everything into a blender just to get a nice coffee drink, but also they taste good and they make the process of being healthy fun and enjoyable. So head over check them out, they've got vanilla, coconut, cinnamon swirl, and strawberry, it's one of my favorites.

So go to [onnit.com/model](https://onnit.com/model) for 10 percent off your entire purchase, not just for the MCT oil but all of the health and human performance supplements that Onnit carries and all of their fitness equipment, gear and so much other cool stuff. Head over there, check them out, [onnit.com/model](https://onnit.com/model). Now back to the show.

**Shawn Stevenson:** Alright, we're back and we're talking with Kelly McGonigal about her new book "The Joy of Movement" definitely one of my favorite books of the year. The year just started though, but it's still one of the favorite books.

**Kelly McGonigal:** I'll take it. How many books have you read this year already?

**Shawn Stevenson:** Like 3 you know. But this is so loaded with incredible like paradigm-shifting information. And I want to dive a little bit deeper into the social connection aspect of movement. We mentioned little bit about how it's tied in the celebration like dance and I just start conjuring up ideas of like the weddings I've been to or just celebrations, there's movement involved in that. But humans truly are, we're hard-wired to connect with each other based on physical activity.

**Kelly McGonigal:** Yeah, it's this really interesting idea that moving is a form of social grooming. The way that when you connect with say your child or your spouse that you hug them and you touch them in a way that's really intimate, that the way that humans connect and bond with larger groups, with bigger friendship circles, with their communities, is movement.

And that when you move with other people, say you're taking a walk and you're sinking your stride or you're dancing with others or you're doing physical labor like working in a chain and passing something down the line that that movement has the same effect on your brain and on your hormones as like

cuddling with your child or your pet; you get the same release of hormones like endorphins and oxytocin that make you feel more connected to whoever you share that experience with.

And so movement is a fantastic way to build relationships and trust and communities. And there's also like the psychological angle of it, so it doesn't matter what kind of movement you do it'll probably have that effect but when you add in the different emotional aspects of different movement forms like in the book I read about obstacle course racing and what it means to have to overcome an obstacle together, like where it's the hill that you cannot climb alone, and so what does it mean to be someone who first take someone's hand and allows yourself to be lifted up, and then gets to turn around and take a stranger's hand and lift them up.

But there also is often a layer of meaning to the movements that people do together and that's a part of the social connection that gets formed is that we instinctively make meaning out of what it means to cross the finish line together or to overcome an obstacle together, or to move in joyous ways to music that we love together.

**Shawn Stevenson:** Yeah, you mention in the book there was a study done on mice that I think they gave them some kind of cannabinoid blockers and it made the moms neglect their pups.

**Kelly McGonigal:** Neglect their pups, I know. Yeah, it's funny there's this drug Ramona bond that was originally developed as a weight loss drug because it blocks endocannabinoids, so the idea was you'll never be hungry and this drug led to such severe depression and even suicide in people because when you block endocannabinoids you don't just make people not hungry, you make them unable to experience pleasure and unable to take pleasure in social connection.

I mean can you think of like a more effective way to take away people's desire to live? So it was a terrible drug, it was immediately taken off the market, but you can still do research on it and in fact, when you give it to animals they will become anti-social and even like refused to care for their own offspring.

So the reason I talk about that in the book is because it's sort of this proof of concept, that if you can make people antisocial and depressed by blocking this thing that exercise releases naturally, it's just more evidence of how powerful



movement is that it's doing the opposite of this drug.

**Shawn Stevenson:** Absolutely and when we do these things together you call it I believe you mentioned it was a cooperation high.

**Kelly McGonigal:** Oh yeah, that's right, it's so interesting. So even putting movement aside when we work together on something difficult or when you're able to contribute something to a community you care about, like we get a helper aside, we get a contribution or a cooperation high even like if you donate money to a cause that you care about, and in the brain, it looks a lot like a runner's high, they're very similar neurochemically.

And what I love is that they each enhance one another. So one of the groups that I got to know a little bit is called "Good Gym" and they actually combine the 2, so they meet up in their neighborhoods, they go for a run, they do a community service project and then they go back on the run and like have drinks and dinner, and so they're combining social connection, they're combining exercise and the runner's high with contributing to their community, and people who do this love it so much and they feel such a fam that idea it's they really are like family and like a real community. So yeah.

**Shawn Stevenson:** It's so cool and, of course, you talk about that in the book as well and there are so many great stories and examples layered throughout. But one of those really interesting things that's come up along the way for me even as I'm listening to you speak, I keep hearing the were "high" and then I think about because it was kind of the next level question and you address in the book, thankfully, is like how does exercise correlate with addiction? So let's talk about that.

**Kelly McGonigal:** Yeah, it's interesting because, so first of all, we know that people can get addicted to exercise, so that was the first thing that got me interested in this idea, like is exercise a drug? And what is its relationship to addiction? So a small percentage of people will get addicted to exercise in an unhealthy way and often it's linked to other mental health challenges.

It's hard to really get a negative addiction to exercise if you're not already dealing with something that exercise is helping you with like exercise is helping you deal with your depression and you get addicted and sometimes in an unhealthy way. But lots of people experience a different kind of addiction where they simply feel dependent on it, they love it, they know they need it, people



experience withdrawal if they miss a workout, like literal withdrawal, they're in a worse mood, they have less energy.

One study that I found that I loved is somebody was trying to study the effect of exercise on sleep and they were trying to recruit regular exercisers to have them not exercise for 30 days to find out if it impairs their sleep, to not exercise. He couldn't get anyone to sign up, people literally said, "You couldn't pay me enough money to stop exercising for a month." So I know that you can get addicted, you can need it and you can get withdrawal if you don't have it.

But the thing I discovered that really makes exercise different from struggles with addiction often from drugs of abuse, the kind of things that people are trying to avoid that create real havoc in your life is that most of the drugs of abuse that people get addicted to, whether it's something like cocaine or heroin or opioids is they go in and they create such an enormous release of chemicals in your brain that your brain is overwhelmed by the high and your brain decides this isn't really safe to have so many whether it's endogenous opioids or dopamine, whatever it is, like we can't deal with this level of high.

**Shawn Stevenson:** Artificially.

**Kelly McGonigal:** Artificially, so it kicks in the anti-reward system which is a system of the brain that literally does the opposite of the reward system. The way that I like to explain it is if you were, if you had a tub and you didn't want the tub to overflow you pull the drain so that even if the water is still flowing the bathtub doesn't fill up anymore.

And this is what your brain will do if you overuse drugs that create this huge high, your brain will basically pull the plug and say no matter how much you take, I'm not going to let you have that high again. And that can really get in your way of experiencing other pleasures in life, it's a horrible side effect of addiction that can lead to a lot of depression and other issues. So that's what a lot of drugs do in sort of the worst-case scenario.

Exercise does exactly the opposite, and we talked about this, that exercise actually boosts the natural reward system and so even though people will say, "I'm addicted to exercise," mostly what they're talking about is, "I recognize that exercise allows me to enjoy life more and I love it, and I need it and I'm not going to stop because I like the way I experience life when I exercise."

And what's really interesting is that exercise even seems to help repair brains that have been, that have adapted to substance use in a way that that over engages the anti-reward system. So there are studies showing people who are in treatment for substance abuse, literally their reward systems like having more available dopamine receptors that had previously been destroyed through their drug use which is incredible that you can literally replace one addiction with a new addiction but that the new exercise addiction almost always has just the positive side effects.

**Shawn Stevenson:** Right and you'd mentioned this in the beginning of the show that it sensitizes your brain to more joy, versus the opposite.

**Kelly McGonigal:** People often ask me like so for example, I talk in the book about how moving together releases endorphins and endogenous opioids and the runners high is sort of like cannabis, people often ask me why can't you just take the drug. And believe me, I wish I could tell you just take the drug, but unfortunately, the brain adapts, so you can get away with it for a while but a lot of people will get into, will find eventually that these drugs turn on them and exercise does not seem to.

**Shawn Stevenson:** Yeah, yeah, it's so powerful. I think that another really interesting aspect of the data I was looking, at and this is US data found that physical activity is directly correlated with a healthy sense of purpose in life.

**Kelly McGonigal:** Yes, and even meaning in life. One study was using an accelerometer and found that on days when you are more active you experience more meaning in life. And what's great about this research is so you could say it's just correlation, maybe if you're depressed you don't get out of bed, but there is every type of research you would want if you were trying to prove causality.

So for example, studies where they take active people and force them to be sedentary and that shows their meaning in life actually declines when they become more sedentary and the opposite— you take people who are sedentary and you encourage them to be more active and you see meaning in life increase.

And so for every benefit we could talk about the antidepressant effect, the happiness, the meaning in life, the social connection, there are these amazing

studies and what's so great about it is because I'm interested in a lot of things, I would love to tell people you should volunteer, you should meditate, so many good things you can do for your mental health. But there's nothing that has the data that exercise has. You can have so much confidence in the research on exercise because the work has been done.

**Shawn Stevenson:** Yeah, it's so good, so powerful. I want to ask about everything but I definitely want to touch on you got a section in the book looking at the connection between physical activity and overcoming obstacles.

**Kelly McGonigal:** Yeah, that's my favorite chapter in the book. So one thing I want to say about the book too, which I think people don't necessarily understand because of the way that I talk about it people might be thinking, "Oh, you're talking about young, healthy people who are all out there running marathons."

But in that chapter overcoming obstacles and in other chapters as well I spend a lot of time with people who are dealing with serious challenges, Parkinson's disease, recovering from strokes, recovering from depression and grief and in overcoming obstacles I'm one of the places I visit is this amazing Gym in Fairfax, Virginia called DPI Adaptive Fitness where every athlete who is working out there has some kind of disability, whether they are paralyzed or lost limbs in combat or they're recovering from a traumatic brain injury.

So I wanted to highlight that because some of those people hear me talk about exercise and they think that the benefits we're talking about are reserved for people who don't have any challenges, like the people who aren't struggling with mental health issues or who aren't struggling with physical challenges and I want to be very clear that is not the case.

And so it's interesting about how movement helps people overcome obstacles is that how we understand who we are and what we're capable of is directly informed by what we feel and sense in our bodies. So one of my favorite examples is a woman who was literally planning to take her own life and she decided to go to the gym for one last workout and like thank God she did, because she deadlifted her personal best. And she literally had the sensation of lifting something heavier than she'd ever lifted before and she dropped the weight and she was like, "Wow, I want to find out just how strong I can become."

The sensation, the physical sensation of being stronger than she thought she

was made her decide to choose life and there are so many examples of that where people will experience movement as information about who they are and what is possible and where people will do things physically that they never thought they could do, like a headstand in a yoga class or finishing a 5K race, you know whatever it is that they didn't think they were capable of. And once you do it you start to ask yourself, "Gosh, what else am I capable of?" And that's what often allows people to deal with other life obstacles.

**Shawn Stevenson:** Yeah, oh, this is so good, I'm so happy that you're here. I want to make sure that everybody picks up the book it's out now "The Joy of Movement" everywhere books are sold, definitely get yourself a copy. And for me. I think that again this is about giving people legs under that belief because I think that our beliefs can be pretty shaky when it comes to certain things and this is a huge leverage point for us to utilize movement, we all have access to this like you said, just contracting our muscles we get this dump of positive chemicals, these hope chemicals.

**Kelly McGonigal:** And the big mindset shift I'm hoping this book will encourage people to make, is so often I think people are looking for like the cheat, "What's the most convenient thing I can do that takes the least time because I'm assuming I'm not going to enjoy it."

And so what I'm saying is you find the right form of movement for you, the right movement community or the right outdoor environment, you get the right playlist, you set the goal that has personal meaning to you, whatever it is that is the right match for you, you were going to want to invest in it, you're going to have a completely different experience, people in your life are going to be like, "We need you back," you are like too excited about movement.

And I want people to think that that's possible for them if they haven't fallen in love with movement yet, that if you think about what would be meaningful to you, where do you want to spend time, who do you want to spend it with, if you know that if you move with people it's going to strengthen that relationship, like find the people you want to move with that you want to connect to.

There are so many ways that movement can be more than a chore or more than like something on your to-do list and I want people to know that that's possible. And find it.

**Shawn Stevenson:** Ah, it's such a great closing point, thank you so much. Can you let everybody know, obviously, they pick up the book anywhere books are sold but anything else they need to know to connect with you on line?

**Kelly McGonigal:** You can find me at Kellymgonigal.com and even if you just Google the joy of movement, it's the easiest way to find me probably.

**Shawn Stevenson:** Awesome. And all your social media is there too?

**Kelly McGonigal:** Yeah, yeah.

**Shawn Stevenson:** Okay, good, good, good. So Instagram?

**Kelly McGonigal:** Kelly Marie McGonigal. It's my middle name I had to sneak that in. On Spotify too, if you want playlist inspired by the book, I have an amazing playlist, I ask people their favorite song to dance to, it's such a good playlist.

**Shawn Stevenson:** You've got to give me at least one example, what's one song?

**Kelly McGonigal:** You know, there was so much funk, that's what surprised me. People love funk, cool in the gang, Stevie Wonder.

**Shawn Stevenson:** Wow, I was not expecting to hear that.

**Kelly McGonigal:** But you know, because funk has groove and groove is what compels you to, and we didn't even to talk about this, like how humans are hard-wired to want to synchronize with a musical beat. And so I think the reason there is so much funk in that list is because that groove and funk, it hijacks your brain and it says you must clap, you must stop, you must bounce and then it just feels so good.

**Shawn Stevenson:** I see you over there dancing a little bit.

**Kelly McGonigal:** Even just thinking about it, right?

**Shawn Stevenson:** My videographer, yeah. This is so awesome. Again, you were on my list of people that I want to have to share with the world years ago.

**Kelly McGonigal:** We finally made it happen.

**Shawn Stevenson:** Yeah, I know it's so crazy and me being on your list, which is nuts and I'm just— when you said that I was like giggling inside like a little child. But I'm just so grateful to make this happen now and with this piece of work because it really affirms so much of the principles that we talk about here in the show.

And I just want to thank you so much for your dedication to diving into the research for getting out and putting yourself in uncomfortable situations, to traveling around and talking about this stuff. And it's just such a gift for all of us, so thank you so much.

**Kelly McGonigal:** Thank you.

**Shawn Stevenson:** Awesome. Everybody, thank you so much for tuning into this show today. I hope you got a lot of value out of this. I just want you to write yourself a permission slip in 2020 to give your body the movement that you enjoy. And the reason we have to write a permission slip is because we have these mental barriers that if we enjoy doing something sometimes that means that we're cheating or that we're not supposed to be doing it or that we don't deserve it.

And I'm telling you right now, you do deserve it but you have to write your permission slip to make it happen. So if you just love roller skating, if you love hula hooping, if you love twerking, all right, whatever it is for you that— never mind, if whatever it might be for you give yourself permission to engage in those things on a regular basis.

And so that means if roller skating is your jam, that means this week, put on your calendar if it is not scheduled it's not real, all right, 2020, let's put it on the calendar and maybe connect with a friend or 2 or get a bunch, a group together or maybe you just go solo, but put it on the calendar you're going to go skating. And put that on your calendar each week, you deserve it.

Plus, you get the benefits of the joy of movement along with it. This is not even something optional anymore. it's a mandate all right, schedule it, every single week to give yourself the gift and the joy of movement. And again, make sure to pick up the book by the same title "The Joy of Movement" and I hope that you really enjoyed this episode.

If you did, please share this out with your friends and family on social media and tag me and tag Kelly, it's Kelly Marie McGonigal on Instagram and let us know

what you thought of the episode. And I appreciate you so very much, we've got some fire coming your way here in 2020 so make sure to stay tuned. Take care, have an amazing day and I'll talk with you soon.

And for more after the show, make sure to head over to [themodelhealthshow.com](https://themodelhealthshow.com), that's where you can find all of the show notes, you could find transcriptions, videos for each episode and if you've got a comment, you can leave me a comment there as well.

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