



**Episode 326: The Catastrophic Consequences of
Sitting Too Much and What to Do About It
With Dr. Turner Osler**

Child: Welcome to my Mommy's podcast.

This podcast is brought to you by Wellnesse, a new company I co-founded to tackle the toughest personal care products and create natural and safe products that work as well as conventional alternatives. I realized that even the most natural of my friends still used conventional toothpaste and shampoo because they weren't willing to sacrifice quality. There are natural options and ones that work but finding products that do both was almost impossible. We tackled the toughest first, creating the first and only natural toothpaste that is fluoride and glycerin free, and that has calcium and hydroxyapatite to uniquely support the mineral balance in the mouth. It also contains neem oil and green tea to support a healthy bacterial balance in the mouth and fight bad breath. Be the first to try it and our innovative natural hair care at wellnesse.com

This podcast is sponsored by The Ready State. If you're at all like me, you might have perpetual stiffness and pain in your neck and shoulders from years of working, carrying kids and all of the demands of parenting. Or sore hips from too much sitting or multiple pregnancies. I found a great way to relieve my aches and pains and improve my fitness and flexibility. It's from someone I highly respect... Dr. Kelly Starrett at The Ready State. If you don't know Kelly, he's a Mobility and movement coach for Olympic gold medalists, world champions, and pro athletes. He's the Author of two New York Times bestselling books, including "Becoming a Supple Leopard", which has sold over half a million copies. He has over 150,000 hours of hands-on experience training athletes at the highest levels. A Doctor of Physical Therapy who helps top companies, military organizations, and universities improve the wellness and resilience of their team members. He created a program called Virtual Mobility Coach. This program is easy to do from home each day, making it ideal for me, and for most moms. And I can do with my kids. Every day, Virtual Mobility Coach gives you fresh, guided video exercises. They show you proven techniques to take care of your body, relieve pain, and improve flexibility. And you can customize your videos in three ways. If you're in pain, you can pull up a picture of the human body and click on what hurts. And from there, Virtual Mobility Coach will give you a customized pain prescription to help you find relief. Second, you can find a library of soothing recovery routines in the daily maintenance section. They're a great way to wind-down and practice self-care from the comfort of your home. And third, for athletes, Virtual Mobility Coach also has an entire section of pre- and post-exercise routines for more than four dozen sports and activities. They help you warm-up before your workout so you can perform your best with a lower risk of injury. Right now, you can try Virtual Mobility Coach totally risk-free for two weeks without paying a penny. And after that, you can get 50% off your first three months. Just go to thereadystate.com/wellnessmama and use code WELLNESSMAMA50 at checkout. That's half-off your first three months when you sign up for a monthly plan. And you'll get personalized techniques to relieve nagging pain and improve your fitness and flexibility.

Katie: Hello, and welcome to the Wellness Mama Podcast. I'm Katie from wellnessmama.com, and this episode has some really fascinating, easy to implement, practical tips that can benefit posture, core strength, even sensory issues, and attention and focus in kids, and lower back pain in adults. And the best part is, today's guest has created a solution to these problems that he is sharing as an open-source project so that you can make it at, essentially, almost no cost at home.

I'm here with Dr. Turner Osler, who's the CEO and Founder of QOR360. He's a retired academic trauma surgeon turned research epidemiologist, who has published over 300 peer-reviewed medical papers and book chapters. He definitely knows this topic. As a physician who suffered from the tyranny of conventional chairs for most of his life, his quest for a healthier way to sit led him to develop the RedRocker, which is a new geometric solid kind of a device, the Eccentric Bicylinder, and also these active seating products that we're gonna talk about today, including one that can be used for kids and adults called ButtOn Chairs.

So, without further ado, I know that you're gonna really enjoy this episode. And I hope that, as parents and those of us that are also educators, we can start implementing some of his practical solutions in our day-to-day lives. So let's join Dr. Turner Osler.

Dr. Osler, welcome. Thanks for being here.

Dr. Osler: Well, I'm delighted to be here, Katie.

Katie: Well, I am so excited to go deep on a topic that I think is really, really important today and I know that you think it's super important as well. And to jump in, I think let's start broad and then kind of narrow down. So we've all probably heard that, you know, sitting is the new smoking and there's all these things about why we shouldn't be sitting as much and certainly, as Americans at least, we tend to sit more than we should. But explain to us from your really vast knowledge base on this topic, what is the science of sitting when it comes to this and is it as bad as we think?

Dr. Osler: Well, you know, it's not just as bad as we think, it's probably worse. The catchphrase these days is sitting is the new smoking, which is truer than you might think. I mean, it's a pretty exact analogy. For most of the 20th century, people thought smoking was normal because everybody smoked and how could it be a problem? Now, even physicians were kind of sucked into thinking smoking was kind of a normal human activity. And it wasn't until, you know, the spell was broken by research and statistical analysis that showed that smoking was terrible for people, not only causes lung cancer but emphysema and heart disease, and was the leading cause of amputation, you know, second after diabetes.

So now, smoking was a catastrophe for humans that was just hiding in plain sight. People couldn't see it because they thought it was normal. Fortunately, we've gotten beyond the whole smoking catastrophe, but now it turns out that sitting is really bad for people. But it's the same story again. You know, people think sitting is what everyone does because chairs are everywhere and people spend most of their day sitting. So how could it be a problem because it just seems normal?

Katie: Yeah, exactly. Well, and I think, I don't remember the exact statistics off the top of my head, but especially for Americans, sitting is very much the norm and it's kind of really drastic and scary how sedentary we are as a population.

Dr. Osler: Right. And it's huge. The average American spends eight hours a day sitting, you know, how is that even possible? Well, you know, breakfast, lunch, dinner, the car on the way to work, you know, sitting at the PC at work, sitting at the PC at home watching...and it's bedtime. People spend most of their waking hours sitting. But sitting is a profoundly unnatural thing for our species that for the last three million years were hunter-gatherers. You know, we were out chasing rabbits and running from jackals. When we all suddenly sat down about 100 years ago, you know, it was a vast science fair project. It's really gone very badly for us.

You know, we have these increased rates of obesity and hypertension and diabetes and heart disease. The business of sitting in a sedentary way has catastrophic consequences for people's health and wellbeing. But because it kind of crept up on us, we're only just now being able to see the horror of the situation through the clear lens of medical research and epidemiology.

Katie: Yeah, exactly. And I think that's an important point to underline. Like you mentioned up to eight hours a day, which is a lot of time to sit. And what was interesting about this, I think this is also a thing that at least a lot of us as Americans tend to do is like, okay, well then we should just counteract that by moving, like let's do as much movement as possible in a short amount of time, like exercise. And of course, I'm not gonna downplay the importance of regular exercise. It is very, very important. But I think there's a misconception that we can undo the damage of sitting just by going to the gym every day.

Dr. Osler: Right. And that came as a surprise to even epidemiologists because, you know, it seems logical that, you know, if sitting is bad then moving is good and if you get a whole lot of moving in in a hurry, that would be terrific. But it turns out that doing cardio at the gym is good and, you know, an hour of panting and sweating is terrific for your vascular system. But the real downside of sitting is that the mere act of being sedentary takes a toll on us and that toll is not undone by going to the gym and exercising vigorously. You know, it's counterintuitive, but it's very clear in the epidemiologic research that it is sitting still per se that is the problem.

Katie: Yeah, exactly. I don't remember the exact number of the statistics, but I know that when they did the research, it was really surprising because all these people who worked out regularly and they met all these exercise standards for how often they should be working out and it was more than four days a week and it was the recommended amount of time and they met all these guidelines and still, compared to the control, it wasn't actually much better because it turns out it you need more than just an hour even of active movement per day. Basically, this is something that we need to incorporate into our lives. And the other reaction that happens when, you know, sitting became the new smoking, there was this, okay, so let's just all get standing desks and we'll stand all day long and we'll just do that instead. And I know you can speak to this much better than I could, but it turns out just standing isn't the answer either, is it?

Dr. Osler: Yeah, no. So standing desks, you know, kind of took off, really without any research behind them, because it seemed like such an obvious answer, you know, if sitting is bad then standing must be good because standing is the opposite of sitting, right? Well, it turns out that's not right. You know, standing may be the linguistic opposite of sitting, but it's not the physiologic opposite of sitting. The physiologic opposite of sitting still is moving. And when you look at people at standing desks, you know, typically they're not doing Tai Chi. You know, they lock a hip and they lean on the desk and they're there just as immobile as they ever were sitting slumped in a chair. Arguably, it's worse to be at a standing desk for a couple of reasons. One is that when you're standing, you have this column of blood that goes from your left atrium down to your ankle that dilates all the veins in your legs. And this sets people up for varicose veins, which in the last century were a huge problem for people who stood all day on assembly lines.

I know I have personal experience with this because as a general surgeon, I was like, you know, stripping out miles of saphenous veins from people who had ruined the venous nerve system in their legs. And, you know, it was beyond the reconstruction and just had to be removed with big, ugly operations. And I think we're gonna be seeing varicose veins and surgery for varicose veins coming back if standing desks really catch on. So that's one problem with standing desks is it's hard on people's veins. You know, you can walk and your muscles are contracting your legs and squeezing blood out of the veins and things are fine. But if you stand still, the blood pools in the veins of your legs and stretches them and over, you know, years and decades can stretch them past the point where they can recover and now you need an operation.

But an even more concerning thing that was published in the "American Journal of Epidemiology" in 2018 by Smith et. al., they followed 7,300 people for 10 years, half of them at sitting desks, half of them at standing desks. And those at the standing desks had twice the rate of heart disease. This came as quite a shock because, you know, it was expected that standing would be better for people, but it turns out that it's worse for their hearts. And heart disease, all you need is a little heart attack and it can change your whole life. So you know, the problem with diving into standing desks was that nobody really carefully examined what the repercussions might be. And really, the early research shows that standing desks are gonna be a much...or they're gonna be part of the problem, not part of the solution.

Katie: Yeah, I agree. It's really interesting because, like I said, I think that's just our default. I don't know if it's as Americans or just as humans, it's like, okay, this one thing is bad, let's pivot and focus completely on this other thing. And we've done that now multiple times. And we haven't gotten it right yet. So let's talk about what the ideal scenario is. And I know I wanna go in several directions with this, you know, for our kids, for us in a work environment, for our home environment, I think there's so much we can change and optimize. But explain, just as humans and movement in general, what is an ideal scenario?

Dr. Osler: Well, the ideal scenario is to just go back to being hunter-gatherers where, you know, you spend most of the day walking. You know, as a species, we're unique in that we have an exercise requirement. You know, our kindred species, you know, bonobos and chimps and orangutans and gorillas are quite comfortable just sitting all day, cracking nuts and eating them and then lumbering up into a tree and making a nest for the

night. These species don't require exercise. But when humans took the fateful step, you know, from the bush out onto the savannah to become hunter-gatherers, we adapted to the lifestyle of a hunter-gatherer, which would involve 5 or 10 or 15 miles of walking in a day. This is what our systems have come to require and even rely on. Hippocrates, you know, famously observed two millennia ago that walking is man's best medicine. We're really designed to be an active species and moving all the time. Shockingly, when we sit down, none of that happens. Our muscles go dark and we get zero exercise.

So what we really want is some way to sit that would let us be in constant motion or that would in some way recapitulate walking. And people have...you know, I'm up with the idea of treadmill desks so you can like treadle along at a mile or two an hour all day long. But this hasn't proved very practical because your cubicle mates hate the noise and they're expensive and it's very hard to handle a mouse while you're walking more than about a half a mile an hour. But what we want is to be moving while you're sitting. And it turns out that, you know, you can design a chair that lets people move while they're sitting, using their own...just kind of burning off their own nervous energy, create enough activity to change their biochemistry for the better and improve their posture through their core strength and many advantages that come with moving while you're sitting.

Katie: That makes sense. And I feel like kids, we can learn from kids on this because they do it naturally. Like if you try to get a child to sit still in a chair, they don't like it and they're uncomfortable. And then over time we like learn to settle in and, you know, arch our lower back and get in a horrible posture position and get used to that because we have to do it so much. But I feel like we can learn so much from kids in actually doing this correctly. But let's talk about this a little bit more too.

Dr. Osler: We kind of force this on kids, right? Because when they show up in first grade, they're just like dancing on a chair and they have to be, you know, told to sit still, which turns out to be terrible advice. You know, kids know what they need and what they need is to move. And when we, you know, force them to sit still, you know, we do them a terrible disservice. And it turns out that the older kids get, the less they move.

There's a terrific study that just came out in "The Lancet Psychiatry" just this weekend, or just this month actually, where they look at kids and how much they move and they move less and less and less as they go from being, you know, 14 to 16 to 18 years old. They put accelerometers on these kids just to see how much movement they were doing. And as they got older, they moved less and less and less. Very interestingly, their rates of depression went up and up and up. So it turns out that this business of letting kids move has profound implications, not just for their posture and their strength and their overall health, but also for their psychiatric wellbeing. I mean, we're discovering just so much about how bad sedentary postures are for people and especially for kids.

Katie: Yeah, absolutely. And I think we're a little bit different because we homeschool, but I've seen this even in my kids and I try to do everything I can to preserve them wanting to move and actually have them sit as little as possible. That's one of the things we optimize for in homeschooling, but I know that this isn't necessarily an option in every school scenario, which is why I love what you're doing. I wanna talk a little bit

more about this too because you've basically open-sourced this and made this available to all children. But unfortunately, in a lot of school situations, for now, kids still are required to be in the same place in one desk or in one area so they can do their work. And so I feel like you've created a really innovative solution that allows them to still move and not to get these all these downsides of sitting or standing. So can you talk more about what this is and how it works?

Dr. Osler: Yeah, no. So we had the idea that, you know, kids know what they need and what they need to do is to move, but the furniture that we forced on them doesn't allow that. It encourages them to slump and just become motionless. So, you know, we designed a couple of chairs that let people move while they're sitting. But the idea of getting chairs into 25 million school kids in the United States seemed like it would be a very expensive proposition for schools that are always strapped for cash. I mean, they can't afford glitter for their preschoolers' art projects.

So we had the idea that we would design a chair that we could give away. You know, we give away the design as a CNC router file, a router. It's a machine that takes a piece of plywood and just like stamps out pieces like a cookie cutter. Only the pieces are big enough that they fit together and turn into a chair. And this chair has got like the joints designed into the pattern, so they just click together without screws or glues or anything. And promotionally, they started out using a tennis ball as the thing between the seat and the chair structure, but we found kids that were so active they would wear holes in tennis balls. So we switched now to using lacrosse balls. Let's see them wear those out. Because these kids are so active, when you give them a chance, they just wear stuff out. So merely by putting a chair under kid that lets them move, you know, they instinctively move, but yet they can stay at their desk and stay, you know, scholastically engaged.

And the spinoff is that anecdotally, teachers report to us that kids are more focused because they can kind of get the wiggle out while they're just sitting there listening or reading or writing or whatever the task is. And it kind of makes sense because we know that if you let people doodle while they listen to a lecture, they have better recall of what they heard in the lecture. By letting the body be active, the brain can kind of stay more engaged. Descartes got it wrong when he said the brain was just a computer sitting inside a bony box. You know, the brain is really part of the body. And if the body is functioning normally and naturally and moving, the brain can be naturally more engaged.

Katie: Yeah, exactly. And I think this is obviously true for adults as well. So I know you have the stool for children, but is it possible to modify for adults to use also?

Dr. Osler: Right. No, so we created the files for this thing in two sizes because we had the idea that grownups are ultimately gonna wanna try them anyway. So we just...you know, one of the versions is 24 inches tall. So it's plenty big enough for most grownups to try out. And then we found that grownups really like it. So in fact, I'm sitting on one right now, you know. We make other chairs that, you know, look more like office chairs and have the normal adjustments and upholstery and this and that and the other thing. But these plywood versions, you know, use something as simple as a lacrosse ball, really touch all the bases. And I like it a lot. And

you know, so many of my friends, you know, have these things and we really like the idea because, you know, anybody can make one for themselves because, you know, we give them the pattern.

Katie: Yeah. I love that. I love that you guys are not, you know, trying to turn this into a product and charge hundreds and hundreds of dollars for it. You're just trying to get people to improve their posture and sit more actively. So for kids, obviously, I could see...I'm sure there's immediate noticeable changes like you mentioned in their ability to concentrate and just their overall comfort and happiness. What kind of changes do you see with adults when they start implementing this active sitting?

Dr. Osler: Well, you know, that's really been kind of shocking. You know, I had the idea that this would be good for people's biochemistry, and it would be a hard thing to get people to buy into because, you know, this weirdo chair that we're proposing, you know, will keep you from having a heart attack 20 or 30 years from now. Just, it's not a powerful sell. But we noticed that when you put people on an active chair, their posture gets better really within minutes. Within about 90 or 120 seconds, you know, their sternum comes up, it comes back, the lumbar lordosis and their spine reasserts itself and shoulders relax. And really, people get into excellent posture very quickly if you just let them sit on something that requires that they continuously rebalance their posture.

And so that was the first thing was that when we were trying this out on, you know, innocent people who were just walking down the street, we have a few of our chairs out on Church Street in Burlington and just invite people to try them out. Well, the thing we noticed was immediately their posture got better. And people like it because it was kind of fun. And so, you know, we started, you know, trying these things out in other places and we dropped off a bunch of them at Burton Snowboard, which is a local business that makes all the snowboards in the world, I think. And so they took a dozen of them and then they called us up and said they wanted a dozen more. And when we went by to drop off a dozen more, somebody at the desk said, "You know, you should meet Seth. He's a real fanboy." So ultimately, we met Seth and Seth was the head of IT at Burton Snowboards and Seth got one of our chairs and within days his back pain problem was solved and, you know, he was just widely enthusiastic and said, you know, we'd given him back his career. Well, we just hadn't...we had anticipated that our chairs would help people with their posture. I really hadn't anticipated just what a big help it would be for people with garden variety back pain. Garden variety back pain doesn't get much respect in the medical industry because nobody dies of it. But it is an immense problem. You know, it affects 80% of Americans and costs \$100 billion a year. That's right up there with the cost of cancer and heart disease. So back pain is an immense problem and it turns out that active sitting, you know, can be a big help.

Katie: Yeah, absolutely. And I think probably adults...even though kids naturally just are great teachers in this and they wanna move anyway, I feel like adults might actually see a bigger benefit because I know so many people, even in my own life, who just have this like mild lower back pain and it's not horrible or debilitating, but it's really frustrating for them. And so to be able to have a solution that's simple that also is gonna hopefully reduce their risk of a heart attack down the road or also lead to these other changes, I think that's really amazing to be able to have.

Dr. Osler: Right now, it's hard for us to know, you know, where to begin telling the story because I think sitting actively actually provides all of these benefits and, you know, just exactly how important each of these things is kind of depends on who you are and what your problem is. But people with really bad back pain, you know, they write us emails that are pages long about just how this has changed everything for them. It's really pretty gratifying and it makes all the time we spent inventing this thing seem worthwhile.

Katie: Absolutely. So I'd love to talk about kind of the differences around the world as well because I've mentioned in a couple of questions that I think a lot of these things are at least worse in the U.S. that our culture definitely we just ended up sitting a lot more. And I haven't been to Japan, but I've read it a decent amount of how, like in places like Japan, for instance, they are better about this or their culture has naturally built-in better forms of sitting. Is that actually the case and what can we learn from them?

Dr. Osler: No, it's very interesting. I was giving a series of lectures at a Feldenkrais Conference in Washington D.C. And there was a woman from Vietnam there who, you know, told a story that, you know, when her family came to the United States as immigrants, you know, they were taken in by a church in Milwaukee and provided with an apartment. So and these people right out of Vietnam where they had been fishermen suddenly are in Milwaukee. And so their sponsors were gonna come by and take them to dinner. And here they were in their apartment and there was all of this weird furniture that they had never seen before because they were Vietnamese and they'd never seen Western furniture.

So when their sponsors came to pick them up to take them out to dinner, they found them squatting on top of chairs and squatting on top of stools because the idea of sitting in a chair never occurred to them because the culture was built around the posture of squatting or sitting seiza on the floor or sitting cross-legged. But sitting in a chair was just something that wasn't part of their culture at all. And incidentally, back pain is basically unknown in Vietnam. So the more the Western chair permeates a culture, the worse that culture's problems with back pain and sitting disease become. So it's the Western office chair is becoming the default chair and with it, it's bringing a public health catastrophe.

Katie: Wow, that makes so much sense. So let's talk about the biomechanics from both your experience as a surgeon and also a research epidemiologist. How does, for instance, sitting cross-leg or squatting differ? Is that considered an active form of being still? Like, how does that change our posture and are all of those other things we've talked about compared to just sitting?

Dr. Osler: Right. So when you're sitting cross-legged, you're responsible for the posture of your spine and you require your internal and external obliques and your multifidus all kind of position your spine so that you can sit upright. When you put someone in an office chair and they just slump backwards against the back of the chair, all their muscles go dark and their posture really turns to the worst possible form. A very famous Tai-Chi teacher once said "The back of your chair is for hanging your coat. If you feel like you need to lean against the back of your chair, you should go home and take a nap." And I think that's true. You know, you put a back on a chair and you just invite people to assume the worst possible posture.

Yeah, that makes perfect sense. And that's such a good thing to think about. And just like, I'm right now mixing between standing and sitting on a stool and then squatting, which is typically what I do when I podcast. But I'm curious, like, obviously these chairs I think are a great place to start and such an easy switch to make. But are there any other ideas or recommendations you would have on how we could upgrade and optimize our offices, our homes, for me, like, and for a lot of homeschool moms listening, our kids' classrooms?

So I'd love your take on all of this. For instance, I feel like the more I move in general, the better I feel. So I have a balance board that I'll stand on. Sometimes when I work, I have an inversion bench and I'll try to do handstands every few hours just to get the blood flowing. And then things like a yoga swing and a yoga mat just to be able to get into different positions and move whenever I take a break from working. But based on your research, are there ways that we can upgrade our environment like that? Or what other suggestions would you have?

Dr. Osler: It sounds like you have like the world's perfect playground for working. I mean all of your solutions are terrific. But, you know, many people in a standard cubicle wouldn't have room for half of your stuff. And so, you know, if we're trying to get people down to, you know, a manageable portfolio of things to sit on, you know, an active chair that lets them move while they're sitting is a good place to start.

The business of squatting is such a terrific posture for humans in general. But unfortunately, almost no Western adults are able to squat. All children can, of course, but they lose that ability because we simply don't use it. The hamstrings tighten and people just kind of lose the ability to squat. It's a heavy lift to get it back. And I've almost got it back to myself, but it's asking a lot of people to be trying to get that posture back. So the business of merely changing posture as often as you can, get up, walk while you're talking on the phone, you know, walk to the water cooler as often as you can, sit on a chair that lets you move. And if your work environment lets you lie down and stretch or do handstands against the wall, well, that's so much for the better.

Katie: I love that. Yeah. I think that's another thing. Obviously, like people used to joke that like...and actually, there was a study that's for a while that there were some metrics in which smokers were healthier than non-smokers, and they confused all these doctors and it was because they were at least walking every couple of hours to go outside. So they were getting outside, they were walking, they were moving, whereas non-smokers weren't. But the lesson we should take from that is obviously not to smoke, but that we should have some habit that every hour or two, we have a reason to get up and maybe we're hydrated enough that we need to go to the restroom every two hours or we're just gonna go outside in the sun for five minutes. But just building that in as a habit rather than just sitting all day long. And there's so many other benefits to that as well.

Dr. Osler: Well, you could take up smoking or you could get yourself a dog and I think a dog is a much better choice.

Kate: I like that. Yeah, we should all just get a puppy. That's a great idea.

This podcast is brought to you by Wellnesse, a new company I co-founded to tackle the toughest personal care products and create natural and safe products that work as well as conventional alternatives. I realized that even the most natural of my friends still used conventional toothpaste and shampoo because they weren't willing to sacrifice quality. There are natural options and ones that work but finding products that do both was almost impossible. We tackled the toughest first, creating the first and only natural toothpaste that is fluoride and glycerin free, and that has calcium and hydroxyapatite to uniquely support the mineral balance in the mouth. It also contains neem oil and green tea to support a healthy bacterial balance in the mouth and fight bad breath. Be the first to try it and our innovative natural hair care at wellnesse.com

This podcast is sponsored by The Ready State. If you're at all like me, you might have perpetual stiffness and pain in your neck and shoulders from years of working, carrying kids and all of the demands of parenting. Or sore hips from too much sitting or multiple pregnancies. I found a great way to relieve my aches and pains and improve my fitness and flexibility. It's from someone I highly respect... Dr. Kelly Starrett at The Ready State. If you don't know Kelly, he's a Mobility and movement coach for Olympic gold medalists, world champions, and pro athletes. He's the Author of two New York Times bestselling books, including "Becoming a Supple Leopard", which has sold over half a million copies. He has over 150,000 hours of hands-on experience training athletes at the highest levels. A Doctor of Physical Therapy who helps top companies, military organizations, and universities improve the wellness and resilience of their team members. He created a program called Virtual Mobility Coach. This program is easy to do from home each day, making it ideal for me, and for most moms. And I can do with my kids. Every day, Virtual Mobility Coach gives you fresh, guided video exercises. They show you proven techniques to take care of your body, relieve pain, and improve flexibility. And you can customize your videos in three ways. If you're in pain, you can pull up a picture of the human body and click on what hurts. And from there, Virtual Mobility Coach will give you a customized pain prescription to help you find relief. Second, you can find a library of soothing recovery routines in the daily maintenance section. They're a great way to wind-down and practice self-care from the comfort of your home. And third, for athletes, Virtual Mobility Coach also has an entire section of pre- and post-exercise routines for more than four dozen sports and activities. They help you warm-up before your workout so you can perform your best with a lower risk of injury. Right now, you can try Virtual Mobility Coach totally risk-free for two weeks without paying a penny. And after that, you can get 50% off your first three months. Just go to thereadystate.com/wellnessmama and use code WELLNESSMAMA50 at checkout. That's half-off your first three months when you sign up for a monthly plan. And you'll get personalized techniques to relieve nagging pain and improve your fitness and flexibility.

Katie: So I wanna talk a little bit more about how we can actually get these chairs in schools and offices because I know that you guys have made these plans available and I would love to actually help, like this podcast be an impetus for creating change. And there's a lot of moms listening who have, of course, best interest in our kids sitting in a better posture and getting the benefits that we've talked about. So let's talk a

little bit more about the practical ways. I know that these have been used now in offices in schools. What's the best way for us as parents and as even just members of society to get these to schools?

Dr. Osler: Yeah, so we've set up a website, buttonchairs.org, so buttonchairs.org. And it's a website that has some information about our ButtOn Chair Project as well as the computer numeric control file. So you can set up a CNC router to make as many of these things as you want out of a sheet of plywood. We also have plans that were worked out by one of the shop teachers here in Essex, Vermont so that if you don't have access to a CNC router, you can make these chairs one at a time. There's a pattern that you just glue on the plywood, cut it out, put it together, and there's your ButtOn Chair.

And we're also partnering with a company in the northeast corner of Vermont who just make these things, we'll put them in a box and sell them to people basically at cost. The idea of, you know, people who don't have tools but want one of these chairs to try out, you know, we'll put it in a box and send it to you. But we really think that the best way is for people to, you know, make them by the hundreds for their school system. So people can try them out, we also have plans for making them one at a time with standard hand tools.

Katie: Any idea how people would go about finding one of these large scale router machines in their area? Is it something that like any kind of school would have or university or home improvement store? Where can people find those?

Dr. Osler: So for a while, I was using the CNC router at our makerspace here in Burlington, Vermont, which is called the Generator. But many high schools have them now. You know, they're just part of shop class these days. It's, you know, the modern way to cut wood. So almost any, you know, small to moderate-size city will have access to a CNC router someplace. Just last week I was in New Hampshire in Lebanon, New Hampshire visiting a school system that had found a mill shop that had a CNC router, and the guy got so excited about the school's project that he donated the plywood and donated the CNC router to make a bunch of chairs for the school. So these partnerships can arise, you know, quite organically, when people have the machinery and are just eager to give back to the school system.

Katie: Yeah, I think that's great. And I could see even if the high schools, for instance, had these, a lot of high school students have to do service hours. At a certain point, like this could be a great thing they could make for younger grades or for special needs students or for, you know, Montessori schools. Or universities I think sometimes have these or if there are Boy Scouts or Girl Scouts who are looking for a project that they could do, I think this would be amazing. And it sounds like a not super difficult thing that they could tackle that would make a big difference in their communities. Or even just parents, like that example you gave who are willing to donate the materials for it. I'd love to see this used more widely in school and I think, like you mentioned, we'd see some big behavioral changes if we could implement these more widely.

Dr. Osler: Yeah, no, it's been fun to watch, you know, the community kind of embrace the idea and embrace each other, you know, as a way to, you know, support the school system by, you know, helping them make

stuff. And the idea of high school students, you know, who have to do shop projects will find that they could have a shop project that actually produced something of use rather than just another cutting board.

Katie: Yeah, absolutely. And I'm even thinking like this would be cool to, not just in our schoolroom, but even in like a kitchen to change out for the chairs at the table. Because our family actually thought about doing the Japanese-style table, which is low on the ground sitting Indian style, but we have a very energetic dog that would make that difficult right now.

Dr. Osler: We have these chairs all over the house, of course. And when guests come for dinner, they're all a little astonished that they're gonna be sitting on something so weird. But everybody adapts to it pretty quickly and it's sort of fun, actually.

Katie: That was gonna be my next question is I'm sure kids can adapt immediately because my kids will get on all these crazy like surf trainers or they get on skis or a surfboard for the first time and they learn it in 12 seconds. But for adults, is there much of an adjustment period or is it more really, like you said, within even just a minute or two, you start to see the difference?

Dr. Osler: Well, people's posture immediately responds. You can just see it really in front of your eyes. But many people will have very deconditioned core musculatures from, you know, in some cases, decades of just sitting slumped in front of a computer. And for those people we say, you know, give it 15 or 20 minutes the first day and kind of work up from there. And depending on how deconditioned people are, sometimes it takes even a few weeks before people are sitting comfortably all day. But really, you know, we've got people who are in their 80s who sit on our chairs all day long and are delighted because as one of these old guys said, "For the first time in my life, I've got a six-pack." And it is just very cool to hear an 83-year-old say that.

Katie: Wow, that's really drastic and probably appealing. I mean certainly, like, core strength is something I've struggled with since having children since my muscles have been moved around so much. And it makes me think, I wonder is this also really beneficial for pregnant women? Because when I was pregnant, I made an effort to sit on a big yoga ball because my midwife said, you know, it's much better for you if you're not just sitting and arching your lower back and that you want your pelvis open and you want your hips open and you want your posture good so that when it comes time to deliver the baby, everything's in the right position. So I was much more cognizant of that when I was pregnant. But I'm wondering if this would also really help a lot of pregnant women with some of those common complaints like sciatica and lower back pain and restless leg and just all those things that can also be a result of too much sitting, especially when you have increased blood flow like that.

Dr. Osler: Yeah, no, we have just a handful of women who've been through pregnancy, you know, kind of sitting on our chairs. And the early reports are very positive. But to actually do a research project, you need a lot of pregnant women and a spreadsheet and a few other things. So we don't have scientific results. But we

do have some pretty enthusiastic women. Squatting, of course, is a terrific posture to be practicing if you're getting ready to have children as well if squatting is something that you can easily still do.

Katie: For those of us who...because I'm with you, I'm almost back to being able to do a natural squat. But like you said, a lot of people, this is something we lose the ability to do, even though all of my children, as soon as they could start walking, that was the first thing I would notice is they can do a perfect squat and they can stay like that for a really long time. And it's like everything, I tell my kids don't lose the ability to do all these things you can do, the pull-ups, the handstands, the squatting. It's so much harder to get it back. But for those of us who are adults who have lost the ability to do some of these things, do you have any tips for learning to get it back? I would guess just active sitting and better posture it definitely is a step toward that. But are there other ways we can nurture these good movement patterns?

Dr. Osler: Well, active sitting is a long way there because you just have to make one change. You just have to take your Herman Miller Aeron chair and put it out in the garage and put an active chair under your desk. And then you get immense benefit really every minute that you're sitting every day. Other than that, you know, the activities that appeal to you are the ones that you'll be able to continue. So if you love yoga, yoga is a terrific solution. But if you love martial arts, martial arts is a terrific way to, you know, stretch and condition and so on. And so, you know, I think you just have to follow your passion, but rather than turn body maintenance into another task that you have to do every day. The genius of active sitting is that you get to do it every day, but you only have to decide to do it once by swapping out your chair.

Katie: Yeah, exactly. I'm a big fan of these, kind of, like passive changes that make a big payoff. And I think this is an easy one. Like, it's not like something you have to remember to go work out every day or you have to remember to take supplements every day. It's something, like you said, you do it one time and then you're good. And another example of that for me is I have something called a chilliPad that goes under my sheet in my bed and it can heat or cool your bed. For me, I use it to cool my bed and it can go down to as low as 55 degrees. There's all this research showing that sleeping in a cooler environment is really beneficial, but it takes a lot of energy to cool the entire house to a lower temperature. So by putting this in my room and programming it, now I sleep at a cooler temperature. It burns fat. It does all these things, improves sleep. But I don't have to think about it anymore.

So I'm with you. I'm a huge fan of these onetime changes that can like have lasting benefits for our health. So there's just another reason I love this and wanted to make sure I shared this with everyone listening today because I think it's a low-cost, easy change, like you said, that can make a huge difference, especially with we're seeing such rampant back problems and all these issues in our kids. And it's that onetime easy switch.

Dr. Osler: I like the idea of burning more fat in a colder environment. And it turns out that babies can't shiver, they just don't have the neurologic setup to do it. And yet they have a huge surface area and get cold easily. So in order to keep babies from dying of hypothermia, they come equipped with something called brown fat, which is a different texture and color of fat that's just typically around the back of the child and maybe around the kidneys and some other places. And what it does is it just burns glucose and generates heat to keep the

child warm. It's like a built-in space heater. It's a very cool workaround for keeping babies warm when they don't have the normal mechanisms of shivering.

But it was discovered that adults actually retain some brown fat and it can even be induced to proliferate. So by exposing yourself to colder environments, like finish your shower with a cold blast, you can induce your brown fat to grow and prosper and burn calories for you. It's another workaround to increase your overall body health just by subjecting yourself to a colder environment. Like a shower is a very easy thing to make cold if you're willing to do that. But it's a decision you have to make after every shower.

Katie: Yeah, exactly. And I know one thing, an objection I commonly hear on things like this, is people say, "Well, that's not a natural thing. Like, we just shouldn't have to go out of our way to do all of these things." And my response always is that never before have we faced so many of these negative inputs, like the idea of sitting for most of the day, or like the idea of being temperature-controlled at all times. This was never available in human history until now. And because of all of these negative inputs from pollution, from our poor food supply, etc., we need to now be proactive at counteracting them. And so when it's small changes you can make that are not an effort every single day, that's the easy starting point to, to me, 80/20 it and then do the hard stuff.

Dr. Osler: Yeah, exactly. Exactly. It's astonishing that the vast intelligence of our species has been devoted to making our lives "better." But really, you know, by having food constantly available and the temperature constantly controlled, it's been a catastrophe for our biologic life. And so, you know, trying to get back to our hunter-gatherer roots by at least experiencing cold occasionally or experiencing motion constantly is an essential part of being healthy in the 21st century.

Katie: Exactly. And my take on it too is that I'm a big fan of kind of the Pareto principle, 80/20 rule, and I think that you start with the biggest and easiest changes. Like I said, so sleep is something we all do every single day. Optimize your sleep environment. That's an easy change you can make that has big dividends. Then we're all sitting so much. If you can optimize the way that you're sitting and optimize your posture, that has a big payoff. Same thing with like food. Most of us eat every single day unless we're fasting. So optimize your food situation but then also occasionally mix it up and fast or do something different and work on that metabolic flexibility.

But because we live in a time when all of these things are always available, we have to be a little bit more intentional, like you said, about mixing it up and keeping our body in its optimal state. So I love that you are making this possible with this act of sitting even from kids from a young age. I think that's such a gift to them. And I love that you have just open-sourced it and made it available to all of us.

Dr. Osler: Well, you know, I'm not gonna have another idea this good. So it's extremely exciting for me to have so many people embrace it and you too, it's terrific to be on your show.

Katie: Well, thank you for joining me. I, of course, will link to all of the things that we've talked about today in the show notes at wellnessmama.fm. So if you guys are listening while hopefully doing an activity or moving or especially driving, don't worry about writing them down when you're driving. Just go check out the show notes, wellnessmama.fm and you'll have a link to where you can download the plans for these chairs and learn more about how they work as well as to some of Dr. Osler's research and writing and work that I've found. But just for people listening, Dr. Osler, where can they find you and continue learning?

Dr. Osler: So we have a website, qor360.com that has a blog and, you know, other stuff. And I did a TED Talk, I don't know, about eight or nine months ago on the whole ButtOn Chair Project of making chairs for free for schools. If you were to google TEDx and Osler, you'll find my TED Talk pretty quickly.

Katie: Awesome. Well, like I said, I'll make sure all of those are linked in the show notes. And for all of you guys who are listening who are parents or educators, I think this is a really cool thing we can do for our kids and our schools. And so I hope that you will check it out and see if it's something that you can implement. And I also hope that this episode has raised awareness for all of us just on little changes we can make to begin moving more day-to-day without having to run a marathon or do anything extreme. But just those little movements that can let us have, you know, 6-pack abs when we're 80 years old. So again, Dr. Osler, thank you for your work and for making this available and for your time today. And I am really grateful that you were here.

Dr. Osler: Well, thanks so much, Katie. It was fun.

Katie: And thanks to all of you for listening, for sharing your valuable asset, your time, with us today. We're both so grateful that you did and I hope that you will join me again on the next episode of the "Wellness Mama" podcast.

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