THE MODEL HEALTH SHOW

EPISODE 674

How to Utilize Cold Therapy to Burn Fat, Reduce Inflammation, & Build Confidence

With Guest Dr. Susanna Søberg

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SHAWN STEVENSON: Welcome to the Model Health Show, this is fitness and nutrition expert Shawn Stevenson, and I'm so grateful for you tuning in today. What if the antidote to our society's body fat epidemic actually resided in more body fat? Now hear me out. There's a special kind of fat that has been recently discovered, called brown fat or brown adipose tissue and this fat, funny enough, it actually burns fat for fuel rather than being very, very good at storing it. Our white adipose tissue is incredibly intelligently designed to retain energy to store energy for a rainy day and it really helped us to survive and evolve as a species to be able to tuck something away for when we need it. The problem today is that a rainy day never comes. We're inundated. We're surrounded by food 24/7. We've got so many different food choices at our fingertips. This has never existed before. So much so that even within our homeless population, folks that we generally deemed to be surviving and not really having access to many resources to be able to purchase food, actually in our homeless population, we see the same parallel rates of obesity, over 30, nearing right now, knocking on the door 40% obesity even in our homeless population.

And so again, we are intelligently designed to deal with times of less food access and of famine. But again, our cells are just chronically getting filled up, but the good news is we have intelligently designed things to combat this potential issue with focusing on building and supporting more of our brown adipose tissue. Now, our special guest today, she is one of the leading experts in the world. We're talking about doing her PhD work, doing her dissertation on this subject of brown adipose tissue and being able to help the public get more educated about this. We're going to dive in deep, we're going to talk about what it is, why is it brown, and also where does this exist on our bodies? Is it just as prevalent on our bodies where white adipose tissue can show up? I think you're going to be surprised about that. But most importantly, we're going to dive in and look at her research around this practice of getting exposed to cold and the impact that that has on our brown adipose tissue. But not just that, we're going to be looking at how this process of getting exposed to cold temperatures through a very time-honored, you're going to also hear the history on this, time-honored practice influences our mental health, our immune system, and so much more.

So, again, I think you're really, really going to be blown away by this. You don't have to be afraid of the cold. I'm not telling you to run out and get yourself cold right now. But just hearing this information, hearing this science and understand that we have access to things that can help us to combat all this stress we're exposed to today, that can help us to shift our body composition by adding in certain practices. It's something really special that I want you to be able to add to your superhero utility belt and use it whenever you need to. Now, before we get to our special guest, one thing nutritionally that we can do to target the activity of our brown

adipose tissue actually resides in a brown beverage. Research that was published in the journal Scientific Reports and this was from scientists at the School of Medicine at the University of Nottingham, they discovered that coffee has the ability to influence our brown adipose tissue using fMRIs. Having test subjects consume coffee, they see that brown adipose tissue areas of the body begin to light up and we can potentially nudge our beige adipose tissue cells. So, these are fat cells that are essentially sitting on the fence, and they can become a white adipose tissue storage fat or brown adipose tissue burning fat with a helpful nudge from environmental inputs and one of those being the consumption of coffee.

Now, with that said, we also have profound data showing that pesticides and insecticides can disrupt the health of our brown adipose tissue and our metabolism overall. Now, this is becoming more and more well known, but this speaks to... I'm not talking about getting coffee from QT, I'm not talking about getting coffee from McDonald's Drive Thru. Alright, that's that low hitter quitter, you don't want that. Alright? You want to get organic high-quality coffee. As a matter of fact, let's take that up 10,000 notches by combining high quality coffee with all of the mountains of peer reviewed data affirming the effectiveness of medicinal mushrooms like Chaga, like Cordyceps, like Lion's Mane.

Researchers at the University of Malaya have affirmed that Lion's Mane medicinal mushroom is one of the few things ever discovered to increase the production of nerve growth factor in the brain and being neuroprotective and neuro regenerative. You get this together in your favorite cup of coffee to start your day is something really remarkable. The only place to find organic coffee infused with dual extracted medicinal mushrooms like Lion's Mane like I had today myself is from Four Sigmatic. Go to foursigmatic.com/model, you get 10% off storewide plus access to other exclusive bonuses and discounts. Go to F-O-U-R-S-I-G-M-A-T-I-C.com/model. Again, 10% off storewide plus other exclusive bonuses that you're going to find there. And just huge fan of Four Sigmatic, love those guys, truly. Their founder is one of the smartest people that I know and also has become a good friend, always supportive and always...

The thing is what I'm trying to articulate here is that I know that he cares a lot and he's making sure that nothing is getting cut in quality control. So many medicinal mushrooms out there are not even really medicinal mushrooms and the parts of the mushroom that actually get the benefits that we're talking about its peer reviewed studies. He's making sure that things are done the right way. So huge fan foursigmatic.com/model and now let's got to Apple Podcast review of the week.

ITUNES REVIEW: Another five-star review titled “Love Your Story” by C-USA. “You're honest and you have an amazing story. Thank you for sharing your past experiences, I can relate to you, it's reassuring, and I will share your podcast with everyone I know. Keep it coming. I'm listening, learning and appreciate your honesty.”

SHAWN STEVENSON: Thank you so much for leaving that review over on Apple Podcasts. I truly, truly do appreciate that. And on that note, let's get to our special guest and topic of the day. Dr. Susanna Soberg received her PhD in metabolism and has been a leading researcher in functional cold and heat exposure for health optimization. She's the author of the international best-selling book, Winter Swimming. She's also a highly sought after media personality and speaker and now she's here on The Model Health Show to share her wisdom. Let's jump into this conversation. The amazing Dr. Susanna Soberg. Well, it's so good to see you. Thank you for stopping by to hang out with us, and also of course, it's great to hang out with you last night. And I want to start off by talking about brown fat. Alright. Can you start by sharing some of your research on brown fat and why it's important for our health?

DR. SUSANNA SØBERG: I can. I just want to say thank you so much for inviting me on your podcast. I really love what you do, so I'm very much looking forward to this conversation.

SHAWN STEVENSON: Thank you.

DR. SUSANNA SØBERG: You're welcome. So, the brown fat, it's my research area and has been for about more than six years during my PhD, and this is like the healthy kind of fat that we have in our body. So, you can compare the brown fat's ability to burn calories, just like muscles, but we have less brown fat than compared to muscle tissue, of course. So, the brown fat is the healthy tissue, if you activate that, then you will burn calories in your body, and that's kind of like very different from our white fat, which people have heard about, of course. So, the white fat, we want to get rid of that, that stores energy in our body and the brown fat, it spends energy in the body, so it burns calories.

SHAWN STEVENSON: So essentially... Well, first of all, we have a lexicon, a language thing, with fat being called a certain thing, because when we think about fat in our culture, it's something that we want to get rid of.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: And this kind of flies in the face of that because it's like a fat structure.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: But it's different because... What makes it brown? By the way.

DR. SUSANNA SØBERG: Yeah, so it, in color, it's also very different from the white as you suggested. So, it's brown and it's brown because there are so many mitochondria in the cell

compared to the white fat, which is... It probably have a few mitochondria, but a big white fat droplet in the middle. Whereas the brown fat has all these mitochondria which makes this special brownish color, and it has many small droplets inside of it. So, it can easily burn that white fat droplets inside and increase the energy expenditure in that way, but the color is just because of the mitochondria.

SHAWN STEVENSON: So essentially, if we have more brown fat on our bodies, on our frame, we will have a higher metabolic rate in a sense, or we'll be spending more energy than if we had less.

DR. SUSANNA SØBERG: Yeah, exactly. Yeah. So, you can also work on that. So just like the muscles, this is a plastic tissue, so it can grow, and it can decrease.

SHAWN STEVENSON: Alright, let's talk about growing it because it sounds good. If we can have some specific type of tissue added to our frame like muscle is something that we can go and train and make more of. We get all these metabolic benefits. How do we train our brown fat so we get those metabolic benefits?

DR. SUSANNA SØBERG: Well, the best and most potent way that you can activate the brown fat is by cold. So, the brown fat was discovered in 1551 by this naturalist who discovered this in animals, and he found out that this was present in hibernating animals, so it has everything to do with keeping you warm. So, this is a temperature regulating organ that we have in the body so that in that sense, it's very different in function from our muscle cells and it's very different from the white fat which we just discussed. But the brown fat is then built to keep you warm. So, it increases what we call the thermogenesis. So, upon cold activation or stimulation to the body on your skin, as soon as you get a little bit cold on your skin, your cold receptors in the skin send signals to the brain where we have our temperature regulating center. So, the temperature regulating center in the hypothalamus is always like controlling, Are you too hot? Are you too cold? And always like sending messages to the rest of the body. So, if you get really cold, for example, going into cold water or you go out in the cold wind, you will have these receptors activated and immediately the brain will send out new adrenaline and that's going to activate your brown fat cells immediately.

So, this goes very fast because the brown fat's purpose is to keep you warm from the inside. So, it's kind of like a radiator and the brain is like a thermostat. So always regulating, are you perfectly in balance to save your organs from not getting hypothermic, and even also hyper-thermic, so it's just regulating you all the time into the perfect temperature balance, and to do that, it needs energy, and to create this heat in your body. So that's why it's part of our metabolism.

SHAWN STEVENSON: That's so fascinating. And this was discovered hundreds of years ago, and now we're finally getting a lot of clinical data just kind of affirming the efficacy of brown fat, what it's doing and also how we can build it. So, with cold exposure, I'm curious where our brown fat areas on our bodies like you mentioned, having those exposure. Basically, our brain is picking up this data, do we just start growing brown fat on our fingertips or where's brown fat located?

DR. SUSANNA SØBERG: Yeah, it's a really good question. And, I mean, when I started my research, I didn't really understand why the location is as it is, because what we see from studies also in rodents and mice but also confirmed in human studies. There's a nice paper by Leitner Adele from 2017, showing from PET/CT overlays of many subjects. They have put these overlays of PET/CT scanning where we can see with our eyes where the brown fat is located. So they found six locations in the body where you can grow actually also brown fat because just because you have six depots or six different places where you can have this doesn't mean that you have it at all the places, doesn't mean that you have a lot of and it doesn't mean that you don't have it at all also, but it just means that you can grow it at these, in these six locations. So, the biggest depot is located just under your super clavicular bone, so you can almost touch it actually. So, you feel it right here, so the supraclavicular bone...

SHAWN STEVENSON: Your clavicles.

DR. SUSANNA SØBERG: Clavicles, yeah. And it's just located like one millimeter to two millimeters just beneath your skin. We measured that in my studies to see how close to the surface of the skin it's located. So here we have the largest depot, very close to the brain, very close to our central nervous system, actually touching that because it needs the signal from the brain and also close to our vital organs.

So then also down the spine, around our kidneys and around our heart and then in our armpits, so it really makes sense that it's located where it can send out heat and it can receive messages from the brain when we get a little bit cold because the message is going to the brain, but there's also a direct pathway from your skin directly to the brown fat. So, it's located very smart from nature, I would say to save you.

SHAWN STEVENSON: That's so fascinating. So, there's more to our collarbones than just the look of them. So cool. So, you are really the voice right now of cold therapy and so many people are quoting you and it's such an honor to have you here to talk about this stuff because you just mentioned this is basically... It's the opportunity to take our brown fat to the gym and there are a myriad of other health benefits we're going to talk about, of course with cold exposure, but is there a historical context from your homeland in utilizing cold therapy? Let's talk a little bit about that. And let's talk about how we can start to use cold therapy ourselves.

But I want to go back in history a little bit right now because I think that this was kind of literally swimming around you for a while before you were like I got to see what this is all about.

DR. SUSANNA SØBERG: So yeah, we've been... In Denmark we have been known for winter swimming for many, many years and we're doing this for hundreds of years. I've been going back a bit in history and found old footage and from Danish archives, showing that we've been doing this for hundreds of years. And so, it's kind of like a cultural thing that we do, and not because we are saying that already back then we said oh, it's healthy, but we couldn't really explain why. It's kind of just a Viking thing from Denmark that we just do this. We don't have a sauna culture in Denmark that goes way back, but we do have winter swimming. So, this was kind of like a quick thing for me to pick up when I started my research in the brown fat because of cold activation. Well, everything has been studied regarding the rodents and exposing them to cold air, but when it comes to human studies, there was a few studies about activating the brown fat in cold rooms and going with a coat vest and wearing that and that activated the brown fat. But there was nothing of that I was really feeling that could be really good advice or something that we can tell people to do, which they would find also fun and yeah, so I wanted to apply something that people could use and find as an activity just like sport, for example.

But in Finland, for example, they've been doing sauna and contrast therapy with a sauna and rolling in the snow or bathing in the sea. There have also done this for many, many years. So, in Scandinavia, we really have a culture for this. It's growing. And also, I think especially after Corona, where everybody started to plunge everywhere just to get a little bit of excitement I think because of the release of norepinephrine and dopamine and yeah, so ready to get that energy kick and have some fun in your everyday life though. I think it's a very Scandinavian thing to winter swim as we call it, but cold plunging is actually happening, happening around the world. And I found out after I started actually writing my book, Winter Swimming, Russia, in China, even South Africa and also polar bear, that's the US, right? So, and in Australia, and I figured Wow, so many places' people actually do this, but it's still very niche, and we really just need to address what is actually happening and that's why I wanted to do this kind of research. So going to the mechanism.

SHAWN STEVENSON: Yeah. One of my favorite parts about the book, of course, the science is wonderful, but the visual aspect of it, to see all of these cultures, seeing folks in China, seeing folks, as you mentioned, the Polar Bear Club here in the United States, and just to know that this practice has been going on for centuries...

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: And it's just, on the surface, if we are not really acclimated to anything natural, really in our lives today, where we're just kind of shut off from nature, and we might see it as just super weird like, "What's wrong with these people going into these cold water? They're crazy."

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: And to understand all of the vital aspects of it. Because for the majority of the time, these folks are doing this for a reason, whether it's physical or mental development, strength and endurance and resilience, and now again, you have all the science to affirm this, this practice. And so that's what I want to talk about next because you mentioned the contrast therapy, we know about heat shock proteins. Well, I think a lot of folks have heard about this by now with sauna, but there are also cold shock proteins. Let's talk about that.

DR. SUSANNA SØBERG: Well, there's cold shock proteins which are different and activated only in the cold. They have overlapping efficiency to activate, or making the cells stronger and repair the cells, repair the proteins which get damaged with years. So, as we grow, as we get older, our proteins also get damaged. So, with the cold stress proteins can repair the cells when you go into the cold and they are different from the heat shock proteins, but also very overlapping. So, if you do the contrast therapy, you will have this overlapping benefit.

SHAWN STEVENSON: That's really cool. That's really cool. But again, you just mentioned... And I'm so glad that you started off by talking about this, the hypothalamus being kind of this master regulator of our temperature and it's always trying to modulate things.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: And it gets stronger with exposures to things and it kind of like broadens the spectrum of your ability to adapt. And it's a primal, primary thing for our evolution really, for us to survive. So, us strengthening that and also this kind of being the seat, if we're talking about the hypothalamus, is the integration of our nervous system and our endocrine system, and so this being a seat of stress regulation in our lives, and we are stressed out today.

DR. SUSANNA SØBERG: Absolutely.

SHAWN STEVENSON: Right? We'll throw a study up for folks.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: Essentially, this med analysis found that upwards of 80% of all physician visits today are for stress-related illnesses.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: There's a stress component to it. And I don't think that we give it much validation for the average person today, because stress is invisible. It can't impact you as much as smog, or as much as the food that you're eating, or the exercise you're not doing. These are all kind of tangible things we go after, and we do. But your thoughts create chemistry in your body, right? And so, building up that stress bandwidth, because I think it all is going into your overall stress load. We might think that we're not that stressed, but what if we are able to expand our capacity to deal with stress? And that's one of the benefits that you found in your research with cold therapy. Let's talk about that.

DR. SUSANNA SØBERG: Yeah, so definitely opening the window for how much stress that we can handle is something that the cold can do. And as you just said, well I mean, the stress component that we have from a modern lifestyle is something that we need to address in a new way, I think, because what we have today is the drip-wise, stress throughout the day, and we don't really have a really good way of dealing with it. Exercise is a really good thing to do. It's good to expose yourself to what is called hormetic stress. So, it's healthy stress. So short-term stress, which will build yourself stronger, and if you don't overdo it, you won't exhaust them. So, it's really important to... Also, that's a message I really want to get out that stress is not only bad, it's really also something really good if you do it correctly.

So, the short-term physical stress, physical stress, so not mental stress. Because mental stress is exactly what we have all day long in this modern society where we are stressed all the time with computers, emails, or phone calls, and we are getting interrupted all the time, so we don't really have the time to relax and just to process actually what is happening in our lives.

So, the stress is definitely there, but the cold can both reset your thoughts and your stress immediately as you submerge into cold water, but it can also have stress relief on a long-term. So, by increasing your stress resilience, so opening that window, yeah. But you can say, as you just asked me about my research, so the physiological... You can say a recent cause behind all this is inflammation. So, if you can decrease your stress level mentally and physically, you will lower your inflammation, inflammation is the root cause of many modern lifestyle diseases, so if we can decrease that and also neurological diseases such as depression, anxiety, Alzheimer's disease have all been associated with increased inflammation and stress.

So that's why I wanted to do this kind of basic research. So, I wanted to go back and look at like, how can we stay healthy? How can we lower inflammation and stress in body and mind?

And I kind of like, in my search for that came back to nature, it sounds romantic, but it's not like that. It's really from a scientific point of view, how can we use natural stressors?

So, this is like, again, healthy stressors to get rid of the inflammation in the body. So, we need to get through the body to get to the mind, right? So, if we can lower that inflammation in the body, we will lower the stress in your body and your brain, and you will lower... You will have a lower stress level in your life and that's going to decrease your blood pressure, heart rate, basic heart rate, and it's going to decrease... Well, increase your insulin sensitivity, which is actually some of the findings from my research also, what are the things that I just mentioned. So yeah.

SHAWN STEVENSON: This is blowing my mind right now, especially with this inflammation component, because you just said it's behind so many of our chronic ailments, but we tend to think about it superficially like if something is inflamed, maybe it's an injury or something like that, yeah, some cold maybe can help to suppress some inflammation, but we're talking about chronic inflammation as well.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: And of course, that it can help with acute inflammation, but just that low grade fire, and you mentioned it's like a dripping action with stress in our world today.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: Basically, we're like water boarding ourselves with stress...

DR. SUSANNA SØBERG: Yes.

SHAWN STEVENSON: Over time. And helping to reduce inflammation through this practice and opening the door for improvements in... Obviously, obesity is a huge issue today, in particular here in the United States. About 70% of our citizens are overweight or obese at this point, and there's a huge inflammatory aspect of obesity now that's finally being talked about, and this can help to modulate that inflammatory response. But also, you just mentioned improving insulin sensitivity.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: Let's talk more about that.

DR. SUSANNA SØBERG: Yeah, so that's... You can say that is what's needed, if we can lower the inflammation, you need to increase your insulin sensitivity and you could do that by... Well,

moving your muscles. So of course, exercise has already been shown to modulate your inflammation in your body and also increase insulin sensitivity. But you can also activate your brown fat, which is part of... All part of your metabolism. So, increasing your insulin sensitivity will make your cells in your body more sensitive to insulin, of course, and then you will get faster rid of the glucose that is floating around in your blood stream. So, if you can do that faster, your body can do that faster, you will decrease your risk of diabetes, type 2 diabetes, which is a huge problem, and it's a growing problem. And with that also, mental diseases such as depression is associated with... Or obesity is associated with also having a higher risk for depression. It all comes down to the inflammation part of it.

So, if you increase your insulin sensitivity by activating your brown fat, so your muscles, exercises is excellent. So, it's just, yeah, just part of your, you can say your routine for lowering your stress, lowering your inflammation. So, if people want today to do something good for themselves, they should think about lowering the inflammation in the body because if they do that, then they will prevent a lot of diseases, which is increasing today.

SHAWN STEVENSON: So now that we know that cold immersion can improve our metabolic health, you're also tying this back to our mental health.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: And this is so important. Are there other aspects of cold immersion that can improve our mental health? Does this influence things like neurotransmitters, maybe like dopamine, for example?

DR. SUSANNA SØBERG: Yeah, so it seems that studies have shown that you can increase dopamine by 2.5-fold, about, if you're going to cold water, so just one to two minutes is actually enough, and it also increases noradrenaline by 2.5-fold and actually more in some people. If you stay in the water, if you can build that up to one to two minutes, it takes a little bit of practice, I just want to say to all of those who haven't tried this, you have to practice this, of course, it takes a few attempts before you can get up to one to two minutes. But if you can increase those neurotransmitters in your brain, you will also have a changed mindset for also going into the world because you are more focused. You have more drive because of dopamine. You also have an increase in endorphins, which will also make you more positive to whatever you meet in your daily life. And also, the noradrenaline will give you energy. So, when you have... When you put all those things together, it should be giving you a more positive mindset, right. So, I think this is something that needs to be studied more, I think.

But I'm very happy to actually pull up a paper here from to 2023, it was published in January by a research group in the UK, where they looked at psychological traits when people have, their

subjects in the study submerged into cold water, they scanned the brain before and then after the cold plunges and they found... Gave them a questionnaire and they found that they had changes in anxiety. So, they were less anxious. They also were more confident, and they felt just generally more positive to the world. So, it's just all these questions. There were more results from that study, but this was just some of them, which I think boils down to, if you feel more confident, you can do a lot of more things, because confidence is really important in this world to pursue what you want to do, and it takes a really positive mindset also to do that. And it's the outcome of a lot of things adding up that you have that confidence, right? So, I think that for mental health, this has a strong potential as well. So, this study really shows that something changes when you go into the cold water. Something changes in the brain and that's because of these neurotransmitters. And these are functional MRI Scannings of the brain, so people can go and look that up in the paper if they want to.

SHAWN STEVENSON: Absolutely. And of course, if people are watching the YouTube version of the show, we'll put the study up for people to check out. But I don't want to go past one of the things that you said here. You said essentially that this practice of cold exposure sensitizes your brain to more pleasure. It makes your brain more sensitive to the good stuff that's happening and increases your resilience to what we might deem to be negative. And that is very similar... No, scratch that. It is the same as what you get from exercise. It sensitizes our brain to pleasure. It helps to increase our stress resilience overall. And these are things that we have access to today. Like you just said, the past few years with everything shutting down and the world being upside down in a sense, there's been this explosion of people doing cold plunges and things of the like, and also, it's strange because at a time there's so much stress in the world, heightened stress, that that would be something that's become so attractive and utilized at the same time. It's just like whenever a problem happens, a solution presents itself in a strange way, whether we're aware of it or not. And also...

DR. SUSANNA SØBERG: We find our ways, yeah.

SHAWN STEVENSON: Yeah. And also, you said about just essentially reducing inflammation, this is also reducing pain. So, can this practice reduce not just physical pain, but mental pain as well, mental anguish? Would this have something to do with maybe endorphins being produced?

DR. SUSANNA SØBERG: Yeah, I would think so, because when you submerge into cold water, you have an increase in endorphins as well, you activate your immune system, you have more endorphins in your body, which will give you a... That's your natural pain killer, we say, so it's definitely not going to only give you pain relief physically, but also mentally. So, it's all the neurotransmitters just in general, I think gives you that positive mindset that gives you the drive and makes you less sensitive to pain actually.

SHAWN STEVENSON: So, I think one of the coolest things that I've already learned today and just make sense is that this practice essentially helps to build our confidence in a really interesting way. And I think that the act itself is putting like a coin into your confidence piggyback, because you are choosing to put yourself into the stressful condition versus stress happening or us running from stress in our lives, constantly trying to avoid stress and get away from things that are difficult, we're choosing to do something hard.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: And so, can you talk a little bit about the practice itself of going into cold water? Because you've walked many people through this at this point, but also of course, making this a practice yourself. This isn't something that doesn't require a change in your mindset, right? So, can you talk about the best practices of actually getting ourselves into cold water?

DR. SUSANNA SØBERG: Yeah, so I definitely think that, as you just said, that the confidence is one of the main outcomes of this, and if you can grow that confidence, it really is something that could raise so many options or possibilities in your life. So, if not for the physical health, people should do it for that, I think, because it's just giving you that drive, that confidence to do harder things. So, we also escape a lot of things in our daily life, like going to school and social media. It's shown actually to be a thing where we go because we have so many tasks or something that is hard to do, and then we just escape into something that is like less painful at that moment. And if we can teach yourself that we can do hard stuff, get through it, then we can also think about escaping to social media all the time, the scrolling is a huge problem, then we can also maybe put the phone away a bit and we can tell ourself, "Well, I just punch it. I just actually got to this very, very special situation, then I can do other things in my life, which is also very stressful."

So, teach yourself to overcome stress actually. So, for many different reasons, people can do this, but if not for the health reasons, then maybe for that at least. And the practice itself... You asked about that. So, the practice itself, you can do this actually in many ways. The cold exposure doesn't have to be, and I know there are listeners out there thinking, "But I cannot go into the... Do a cold plunge. This is definitely not for me." Well, you can start somewhere else. So, you can take a cold shower. There are studies showing that a cold shower for 30 seconds up to 90 seconds each time, and you can build this up, it's not... It should be feasible. I would say 30 seconds. There's a study from Holland showing that you will have less sick days from work if you practice this for 30 days. So, what they found was a randomized controlled trial, and what they found was that the group who did 30 seconds and the group who did up

to 90 seconds, they had the same amount of less sick days compared to the control group. So, you don't have to do more.

Less is more, is what I always say. And I can back that up with my own science just in a minute, but the 30 seconds cold shower, ending on the cold shower is definitely a way to start. So, if you are not up for the cold plunging, then maybe the cold shower. You could also do splashing of cold water into your face. It's also going to activate your brown fat and also, it's going to make you a little bit more, you can say less anxious about the cold water, just get a little bit more familiar with the concept at least. But cold plunging itself, you can just take this head-on and just say, "Well, I have a bathtub," or "I have the open sea," or... Yeah, you have the option at least to submerge yourself into cold water. So, the practice you could do, shown in my study, is that you could do 11 minutes per week, not in one session, divided on two to three days, and each day, this is like contrast therapy shown in my study, you could do three rounds of cold plunges, and then two sauna sessions. But each plunge shouldn't have to be more than one to two minutes, we found in my study. And sauna sessions doesn't have to be more than 10 to 15 minutes each time.

So, what we see in my study is that you don't have to do that much actually. And I wanted to study with how little could we actually go and with how little can we have health benefits, which could be measurable and is clinical relevant maybe also even in the end. So, what we see in my winter swimming study is that the winter swimmers had a lower blood pressure and they had lower heart rate, increased insulin sensitivity and they also had better glucose balance. So, they get rid of glucose faster than the control group, and the control group were matched group to the winter swimmers, so they were just as fit and just as... They were matched on gender and fitness level and even on diet and also on BMI. So, all these parameters were very... That's also very important when you compare two groups, and when we did that, the only thing they had that were different was that the control group didn't plunge in cold water, and they did not use a sauna.

They didn't even swim in the local swim hole, you can say, so they were not allowed to do any of that kind of extreme temperature exposure. So, what we see is that with this little amount of cold exposure and heat exposure, you can have these health benefits and excavation of the brown fat which is of course the most important thing. And then increase the thermogenesis so the winter swimmers were actually physically warmer than the control group.

SHAWN STEVENSON: Wow, you just mentioned a variety of biomarkers for cardiovascular health, and that's the number one killer in the world. And in particular, again, here in the United States where the king of it dying from heart disease, and this is something that is protective, ridiculously protective. You just mentioned looking at these confounding factors, matching people up in studies and seeing this practice gives you an edge in prevention and supporting

your cardiovascular health. So, you said 11 minutes a week, so that... I guess that would be the ideal minimum effective dose.

DR. SUSANNA SØBERG: Ideal, ideal. Yeah, exactly.

SHAWN STEVENSON: And that's mixed in with some contrast therapy, but we don't need to do the heat as well to get these benefits.

DR. SUSANNA SØBERG: No, of course, there are overlapping benefits when you do both the cold and the heat, and it makes sense. I think because you are exercising your blood circulation by dilating and contracting your blood vessels you increase nitric oxide, which is this NO which will help your blood vessels be better at contracting and dilating. And the Endothelial cells will also increase in your blood vessels, which is then mimicking like an exercise for your body. So, I would always say, well, if you can get some heat exposure into your life, you don't have a sauna it's fine, but you can also do a hot tub or if you can... You have a bathtub then do that. If you have a possibility to do that, and there are also these tech things now, you can have a sauna blanket or... But the 11 minutes and 57 minutes per week, protocol is like one method... What do you call it? Minimum method.

It's just a number that we came up... We found out in my studies, so if you do 12 minutes of cold plunging per week, that's also fine, I don't think that's going to ruin everything. But it's like maybe it's just a sweet spot where you can work within that window. And if you are able to do this in maybe one day a week and then do less minutes, of course, then I'm pretty sure you would have a dose response relationship in this. So, you will also have an effect on that. So at least just get some exposure into your life, just get some cold and some heat, and then you can build it up when you get a little bit adapted to it.

SHAWN STEVENSON: Now, is there a best practice as far as the sequence, should we end with cold immersion, or should we end with the sauna?

DR. SUSANNA SØBERG: Definitely in the cold, I think. Yeah, so this was something that... Before I did... I started my research with the winter swimmers and the control group, I was doing a lot of field studies, like looking at winter swimmers on the jetty and I needed to... Yeah, interview them to see and ask them, "How do you do this? What... How do you start this? And how long... " And I didn't want to do anything extreme, so I was like finding out what is like the average of what people do in Denmark. And I kind of found out that two to three times a week was what winter swimmers do in Denmark if they are into it. Well, it could be that you only do one day per week, but I wanted to see what's in the middle like not doing it every day. But by studying those say winter swimmers, I noticed a lot of them were ending in the sauna, if they had access to a sauna. But also, when I started practice this myself, I have read all the literature, I

understood okay, this is the brown fat literature, and this is all about what happens in the Coldwater immersion.

And as far as I thought, okay, I understand the literature around it, but I still don't get why they do it, because it looks painful, it doesn't look like something you want to do, everything in me tells me not to do it, not to go into this danger. But that's also like my intuition is telling me this, and it's cool because you have to save yourself from something potentially dangerous, right? And it's toxic, a little bit of toxicity going into the cold, that's how you should see it, so just visit it very briefly. But ending on the cold came with my own practices, like I had to figure out, should I go home and take a hot shower or should I actually just move and have my brown fat activated for a longer time and in that way increase my metabolism. And I tried both and I found out I increase my thermogenesis and my heat in my body faster if I just end on the cold, of course the first three, four, five times is maybe not that easy, and I will shiver maybe in my muscles.

And that that's not dangerous as long as you don't stay too long in the water, so that's actually fine, it's increasing your metabolism, right? But if you do that by time when you have adapted a bit, you quicker increase your heat in your body by activating the brown fat when you end on the cold. So, this is going to force your body to heat up, it's going to increase your metabolism, so that's why I always say end on the cold. And a while ago, I told this to Professor Andrew Huberman on an interview, and he gave this a name actually, which is, I'm very grateful for him to do that, I didn't know whether that you can have a principle, he called this the SOBERG Principle. So, thank you for that, Andrew.

SHAWN STEVENSON: He's named it after you it's so amazing. This is really cool to see that again, so many folks are literally jumping in and taking advantage of this. And just going back, looking at the historical context, what humans have been doing the longest is called immersion through bodies of water, for example, lakes, ocean, that kind of thing. And so that is the most in alignment with what humans have been doing, but you just mentioned we've got cold showers that we could do as well, there's crowd therapy chambers, we talked a little bit about last night. But there's nothing quite like getting ourselves immersed in cold water, now the practicality of it is one of the issues today. Because for me, of course, I find out about this and I want to take advantage, and it hasn't always been practical, but there are incredible companies that are making this more accessible today, and you have one of their tubs at your house I have one.

And in honor of today's episode, I actually did it this morning. Usually on days that I'm coming to the studio, I don't do a cold plunge, but I did one this morning and my wife came, you got to meet her yesterday.

DR. SUSANNA SØBERG: Yeah. So nice.

SHAWN STEVENSON: And she hasn't done it in probably about two months, alright, I do it much more frequently. And she did it today and when she got out, she was like, "Whoa let's go." And she was like, "We're doing this every day."

DR. SUSANNA SØBERG: Yay.

SHAWN STEVENSON: And it's so funny because you're mentioning how it changes your mindset and I was just like, "What? This is... But that's her tendency too, she goes zero to 100, but just she felt so accomplished, and even when I left the house, she was such... She was so much more... And my son is here as well in the studio with me, she was more jubilant and like happy, it's so crazy to see this change happen in such a short amount of time. And so, the tub that we're using, we're talking about the folks at Plunge, and they've made a tub that can be used indoor outdoor, no plumbing required, you just fill it up with a hose. And is long lasting, it's durable, the tub itself is made of acrylic and fiberglass and reinforced metal that literally last a lifetime, and it's been sitting out for us about a year now, we've had it. And also, here's the thing, this is the most incredible thing about it, because I know a lot of folks who do cold plunges, they always have to find ice, they always have to find clean stuff.

This is clean and ready to use whatever you want, it has continuous water flow going on the tub all the time, and there's a 20-micron filter that pulls out things like skin cells, hair, debris. And it's also self-contained, so there's no need for additional plumbing as I mentioned, and you don't have to repeatedly try and find ice and bags of ice here or there or try and use your ice maker to get the ice that you need. It's always there and ready to go, once you fill it up once, it can be used for months at a clip, there are incredibly safe cleaning products for it rather than harsh chemicals. And as I mentioned, it's indoor and outdoor use, but the cool thing is also you could set the temperature and how cold you want to go, goes all the way down to 39. So, if you really wanted to unlock those frosty as benefits for people that are acclimated to that, you can do that as well. So, this is Fahrenheit by the way, 39 Fahrenheit.

And right now, if you go to themodelhealthshow.com/plunge, use the code MODEL 150. And I just talked with them yesterday because I knew you were coming here, and they said that they'll give us 150 off of the tub. So go to themodelhealthshow.com/plunge, use the code model... Use all caps, you might as well... All caps, MODEL 150, you're going to get $150 off of your cold plunge tub. This is one of our favorite investments, is something we do as a family, my son here has done it multiple times as well, my 11-year-old does it as well, but the impressive person is my mother-in-law, right? She's...

DR. SUSANNA SØBERG: That's healthy.

SHAWN STEVENSON: She doesn't like us to say her age alright, because she's timeless and immortal and I know she's listening right now. But we would get in there for three minutes and that would be kind of the challenging practice, I came home from the studio one day and she was like, "Yeah, I used the tub." I was like, "How long did you go?" She was like, "Oh, 10 minutes."

DR. SUSANNA SØBERG: What?

SHAWN STEVENSON: Yeah, I know, right? I know, so again, she's just so super, super remarkable with this stuff.

DR. SUSANNA SØBERG: How cold was that?

SHAWN STEVENSON: I think it... We had to set at 49.

DR. SUSANNA SØBERG: Okay.

SHAWN STEVENSON: So, but it's so amazing, this is one of the things you talk about this in the book, the bonding aspect, and the community aspect. And also, all of these benefits with making us more mentally and physically resilient, I think it's a great investment to get yourself one of these plunge tubs, and they also have payment plans as well. Because this is an investment to get this tub, but it's something you are going to love having access to all the time. So again, go to themodelhealthshow.com/plunge use the code MODEL 150, and you get $150 off. Now, I want to ask you about this, you said this earlier, and I want to dig into this, because especially today when immune health is on the minds of so many people. You mentioned that this can improve the function of our immune system, let's talk more about that, how so?

DR. SUSANNA SØBERG: What kind of plunge do you have? Because I just received mine from the cold plunge and it has the ability to switch between hot and cold and actually also on an app. So, you can control... You can see the temperature increasing and when I got my tub and this is just a few weeks ago, put it outside and it was snowing, and we were like, "Okay, let's see if we can get in the hot tub outside when it's snowing." And we could follow the temperature chart on the app, I just find it so amazing.

SHAWN STEVENSON: So cool.

DR. SUSANNA SØBERG: But I was sick, so I couldn't really go out and do it, at the time I had just had a little cold where I was like, "Okay, just... " And that is also something I want to put out

there, if you have a cold then just don't do the cold plunging, just stop and wait for a bit, because your immune system has to have some time to recover. But my kids went out, so yeah, but the immune system is very important also to be very much thinking about your immune system when you do cold and heat exposure.

SHAWN STEVENSON: So, I want to talk about that specifically, but just mentioning the different types of plunge, I have a standard size and standard cooling as well. Because there are some, there's like a pro and cools faster, if you're not running a business or something, you don't really need that, but you can, you can get all these different upgrades. As you just mentioned they have one that has hot and cold, and how cool is that if you don't have a hot tub, for example, at your place. And so, the technology and the efficacy, the way that they're doing it is so cool. And again, you're right here, you got yourself well, you travelled halfway across the world, you're doing all of these interviews now. But this just again speaks to your resilience that you've built up, so overall, it's not just preventing ourselves from getting sick, we're going to get sick, we're going to be exposed to stuff, it's how quickly you recovered too, like how quickly does your body adapt. And so is this something that we could possibly glean from cold therapy with the strengthening of our immune system, maybe our memory cells like B cells, things like that.

DR. SUSANNA SØBERG: Yeah. So yeah, our immune system is definitely activated or affected by cold exposure, because it's part of our stress syndrome as well. So, when we are exposed to some kind of stress it could also be exercise, you are activating your immune system, so going into the cold that is very potent for this. Because that's going to increase your leukocytes and monocytes in your body, and these are the monocytes that are cleaning up also the inflammation in the body. So, there are studies showing that if you are a new, let's call it Winter swimmer, I usually say that, but when I say that I just mean people taking cold plunges. So, it could be winter swimming, it could be cold punching or you can call it what you want, ice swimming. But it's just going into cold water, but when people do that, and they haven't tried it before you have a huge increase in leukocytes and monocytes in the body.

And that stays high for a while after you have started this, a few hours it's not like multiple days. But we see that in new winter swimmers, but if you are adapted to cold water, so like the winter swimmers that we studied in my PhD, we see that they have a lower level actually of leukocytes and monocytes in the body. And this could be, if I interpret on that, also compared to the lower blood pressure that they have, that it's because they have no inflammation in the body and they don't need as much leukocytes and monocytes in the body. Because you have to think about it as a feedback loop, every time we have high leukocytes and monocytes, so your immune system is activated in general. That's because something is there in your body that it needs to fight, and it needs to get rid of something that is not something you benefit

from, right? So, it could be a virus also, so when you decrease that there is less to defend, no it's less defense. No.

SHAWN STEVENSON: That's right, yeah.

DR. SUSANNA SØBERG: Okay, so it's less defense in the body, you don't need it. So, it's actually a positive thing that the immune response by time will actually decrease. So not meaning that your immune system is weaker or anything, it just means that you have cleaned up some of the inflammation in the body, which means that you will have lower blood pressure, lower heart rate and that's a really, really good thing. So, you have a better immune system.

SHAWN STEVENSON: Yeah, that's just makes so much sense, because, obviously, our bodies respond to an infection, whether it's a viral infection or bacterial infection, colds and flu and things alike. If we are already in the pre-inflamed state where our bodies are experiencing this kind of exacerbated immune response already, if we are venturing into a state of being overweight or obese, there's kind of like a low-grade inflammation just cooking up in the body. We know that our fat cells as they're expanding in their volume there's kind of sending out this false distress signal, and our immune system is going to be hyperactive. This is why it's not an accident, and it's so crazy because this is foundational science that's just largely ignored the past few years. This huge med analysis from the CDC is published on July 1st, 2021, by the CDC, they looked at over 800 US hospitals, their data and over 540,000 COVID-19 patients. And they found that obesity was the number one risk factor for death, it was the number one risk factor or hospitalization, Number one, number one.

DR. SUSANNA SØBERG: Number one insane. Yeah.

SHAWN STEVENSON: And it's like that fact it's not been headline or highlighted by major news outlets, by our so-called health officials and is so ignorant because this is something that is so disempowering because you're just like, "Oh well, you can't do anything about that." So, you're just a victim. And so, you can't blame, that we're in this state, but the reality is there's so much that we can do to help to get our citizens healthier and more resilient, so that we can reduce the fact that this... Again, being this number one risk factor.

DR. SUSANNA SØBERG: Exactly, this is the health crisis, that we need to address in this and what we need to do is, exactly looking at what can we do for the obesity because what is the root cause here? We can, of course, work with making more medicine, we can try to cure the sick, but we can also try to focus a little bit more on how to lower this number by going in front of the pile of people getting sicker and this increasing all the time. And ask ourselves the question, is there a way that we can prevent this and teach people this? This is like... That's why I'm here. I'm a teacher, so I want to... Yeah, tell people that they can actually do something

about this. And they can decrease the inflammation by doing these steps, which are potentially very inexpensive and very easy to do, if you have the guts to at least seek it out, and that is the one thing that you need to start. Yeah, that is your courage to do this actually, but with courage... Our courage is built if you have enough 'why's'. So, I'm trying to help people build their 'why's' up to, why should they decrease the inflammation in the body?

Yeah, well, this is actually a way to do it, and this will potentially prevent you from a lot of lifestyle diseases because it takes the root cause of obesity, and as you said, that is the number one thing that causes our early death and also cardiovascular diseases. So, it's really important, I think, prevention.

SHAWN STEVENSON: Absolutely, absolutely. So, again, just looping all this together, obesity being tied to hundreds of thousands of deaths, so our list of top 10 chronic diseases, obesity is tied into... Deeply, 8 to possibly 10 of those, and it's just seriously increasing our risk of all manner of chronic and infectious diseases.

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: And to summarize that point with... Over time, with utilizing this practice of cold exposure, number one, we're increasing our ratio of brown adipose tissue, which is helping our metabolic health in a number of ways, improving our insulin sensitivity, reducing inflammation and over time, we don't have this kind of floating immune response, that's constantly going on...

DR. SUSANNA SØBERG: Mm-hmm.

SHAWN STEVENSON: And it's just really speaking to reducing inflammation, as we're making our bodies more resilient, so that when it has to mount a defense, it's more intelligent in doing so, because also we can have an over-reaction...

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: With our immune system as well, and that's the whole category of auto-immune conditions, and also, this "cytokine storm", for example, this hyperactive or over-response of the immune system, so providing some more intelligent inputs, I think.

DR. SUSANNA SØBERG: Yeah. Resetting a bit. The body, just putting... Take away all... You can say, it's like inflammation in the body is taking all the attention in the body, as well. So, there's no room for anything else, so you get sick because when you have high inflammation, the immune system is on work all the time, and you get a virus, you get a bacteria, you don't have

the defense to fight that off as well. So, that's also why... That having high inflammation also exposes you to a lot of sick days as well, so it's going to work on many levels, if we can go to this... If we can do something about this root cause. I... Yeah. So, I really want to just get this message out, that we can actually do so much ourselves and... Yeah, that is also something that I talk about it in winter swimming, but I also teach this in my school, I have an institute where I teach people these things.

SHAWN STEVENSON: Awesome, and I appreciate it so much. So, with this courage component, it's choosing to put ourselves into this stressor, it's just a few minutes...

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: And of course, you could even start with less than that, but there's a skill set that can be tied into it, that can potentially improve the benefits faster, in particular with modulating stress, and it's breathing...

DR. SUSANNA SØBERG: Oh yeah.

SHAWN STEVENSON: Because... Can you talk about what happens... Getting into the cold, what happens with our breathing and what happens when we jump in and grab the steering wheel of this autonomic nervous system aspect with breathing.

DR. SUSANNA SØBERG: Yeah. So, the breathing is like the third approach, which I think is very important when it comes to learning how to use the cold and the heat in a healthy way. The breathing, the functional breathing, a good breathing pattern, we can also call it that, is the key to your nervous system. So, if you can use your breath and lower your nervous system, lower your stress level by lowering your breath, do it deep and slow and through the nose, that's going to activate the parasympathetic nervous system, so that part of your nervous system which is your rest and digest system. So, if you can activate that more in your life, if you just can do that two times per day, let's just say that, if you can do that two times per day, you're going to lower your stress level and it's going to have an outcome on your inflammation in your body as well. So, everything really... It shows off. So, if you have high stress level, you are a mouth breather, if you breathe through the mouth, for example, that's activating your sympathetic nervous system and that will activate your stress level, so breathing is a way to lower stress in an acute way and in the long-term as well.

You will have many benefits. So, if you can use your breath in the cold water to lower your stress level, that is going to exercise both, you being better resilient to anxiety, panic attacks or just in general, just a stressful situation, you can use that as a training center for your nervous system, how can you be more resilient to any kind of stressful situation? So, lowering

your breath in the cold water will help you with that, so you can use that in your daily life, and if you use that, both in the cold water, but also if you use that exercise in other situations, then you will sum that up and have that lower stress in your life and it's going to add up in your cardiovascular system, so you have a lower blood pressure, and lower inflammation, lower heart rate, and... Yeah, because of activation of the brown fat, you will also have an increased insulin sensitivity, also because of activation of your muscles, so that's going to add up in the end.

SHAWN STEVENSON: And what happens with our breathing, when we first get into the water?

DR. SUSANNA SØBERG: Oh, it increases. If you're new to cold exposure, you would definitely gasp for air because you have an activation of your gasping reflex and it's natural and you should expect that. So, if you see people on social media, and I see that all the time, because I work there a lot on my social media, so I see a lot of people going into the cold water without gasping at all, that is because people are adapted, but adaptation comes very quickly, so you can use your... Use nasal breathing and try to do that at least, by lowering your breath in that way, and switching from the sympathetic activation, the fight and flight, to the parasympathetic activation. And when you are able to do that, then you will be able to stay in the water for maybe up to a minute or maybe two minutes, and then you don't have to stay anymore, but that is... The key is your breathing. The first time, second time and third time, you will gasp for air, and that's probably just how it is, but you can try and focus on your breathing, that's going to help you.

SHAWN STEVENSON: In the book, you talk about how it's easier to control your breathing when you get your full body into the water quickly versus doing it an inch at a time.

DR. SUSANNA SØBERG: Yeah. I mean, I would like to moderate that a little bit because I think there is one way to do it, is just to get in, just to get it over with, and I did that. I just went in, up to my neck and gasped a lot the first few times, that I tried that, but I also tried something else, and that was, going into the cold water... It's because the temperature in the sea where I swim, in Denmark, varies a lot. So, every time I go, I get a new experience from this because nature changes all the time, which is, of course, also fun because I never know what to expect. But if you have a little bit of a sensitive nervous system, I would definitely recommend this method where you... Also, if you have anxiety, for example, your nervous system is going to be more alert, and you can have a panic attack if you don't... A little bit careful about this, so you can go out stepwise, so you can maybe also go up to the navel, then catch your breath by trying to do the low and deep breathing and try to switch it through the nose, because that's like activating your parasympathetic nervous system.

DR. SUSANNA SØBERG: And once you have that, and you can go all in, up to the neck.

SHAWN STEVENSON: Earlier, when you said mouth breather, you know that's a diss here, in America? That's like... Somebody's a mouth-breather it's... Never mind, it's...

DR. SUSANNA SØBERG: So, what is that? Sorry...

SHAWN STEVENSON: A mouth breather can be somebody who's like a scoundrel or somebody who's just a bit of an a-hole or a crony. There's lots of different ways... Yeah.

DR. SUSANNA SØBERG: I didn't know.

SHAWN STEVENSON: So, when you're out here talking about being a mouth breather, it's a slight diss. Alright? Yeah, but you didn't say it in a diss-full manner, it truly is, like when we're breathing through our mouth, obviously we're going to be more in that sympathetic, fight or flight activation...

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: Just by that practice.

DR. SUSANNA SØBERG: I was talking about the body, how the body is working and when you actually physically open your mouth to breathe through your mouth, you will activate your sympathetic nervous system, just by default. That is just how it is.

SHAWN STEVENSON: Yeah, so try not to be a mouth breather out there. Alright, so there's one more thing I want to ask you about, and in particular, a lot of folks who have really dived into this technology of cold immersion, they're also simultaneously very interested in health and fitness, and so they're probably... The likelihood is that they're also frequent exercisers or regular exercisers. Now, this can help to accelerate recovery from training, but I want to know, what is the best practice here because there's an adaptation that we are going for with training, so maybe we're doing strength training, for example. Ideally, we wouldn't want to go right into a cold plunge, probably after training...

DR. SUSANNA SØBERG: No.

SHAWN STEVENSON: With that blunt... That adaptation. Because for me, today, I did it on my off day in training. So, I trained hard the last two days, and it was a perfect fit, that you were coming in and also doing it this morning, and so what would be the best practice as far as... When will we put this into our day? Would we want to do this, if we're training at a later time in the day, do it in the morning? How do we fit this in ideally?

DR. SUSANNA SØBERG: Yeah, so the best practice also depends on what you want and what you're doing, or... So, what is the outcome that you are expecting? So, there could be different ways to do this. So, if you are a competitive athlete, for example, it could be... And you're doing a lot of competitions and you need to be ready the next day, then it's really good to take a cold plunge, after your training or after your match, so it could be really good for those people to take a cold plunge because when they do that, they will decrease the inflammation, but also decrease maybe the growth of the muscles, but maybe they don't need that at that point in time, where they just need to be ready and not sore the next day, so it could be really good for recovery. But if you are looking for growing your muscles, so hypertrophy, it could be really good to wait, with your cold plunging and maybe just... If you can schedule the cold plunging and your exercise, your training, on another day, but if not possible, then maybe wait four to six hours afterwards, then you are sure to get the benefits of your hard work exercise, to grow your muscles. So, people can vary this, and I think people should do what is possible for them, and I'm not really sure how much they actually lose, from doing it right after...

SHAWN STEVENSON: Right, right. We're talking about micro things here...

DR. SUSANNA SØBERG: We're not talking about micro things here, I'm not really sure about how... I mean, if this will hold you off from actually doing cold exposure because this fits with you being in the gym and they have a plunge or they have something that you could use, then I think you should definitely take the cold plunge after your training. If you are not looking for those small percentages, that you are increasing with your training, so... Yeah, just by... Just wanted to mention that. So, I don't know how much you are losing actually, from doing that right after, but doing it in the morning, that is definitely something that I think people should consider because you get this good energy from activating your sympathetic nervous system and your noradrenaline is going and you get this drive from the dopamine, so that you can use that throughout the day, and it's not like it's going to crash right after because you have an elevated level of these new transmitters in your body, for hours afterwards. So, if you need to do some work, you can do a cold plunge and you will have the energy of going to an interview even, then you have that positive mindset with you as well, so you are...

Of course, thinking, "I'm great, I'm going to do great on this interview." And it's not something that I just say, but sometimes... I think, actually it's shown, that that's going to make people get the job easily, if they believe in themselves and they go in with the confidence and they feel positive and they have this drive that's going to give a better impression also. Interview, it could be anything, yeah. So, mornings, morning dips, I am definitely for that. And it can also replace maybe a cup of coffee or two or four. How many people are taking. But doing it in the afternoon would also be fine, I think, depending on how sensitive your nervous system is.

So, I always just say that if you are usually one who doesn't drink coffee after five or after four o'clock, then maybe you also don't do your cold plunges there, because you activate your sympathetic nervous system, you have this high increase in noradrenaline and it's not really going to help you sleeping later on. And then on the other hand, I hear from other people, winter swimmers who say, "I sleep like a baby, when I do my evening cold plunges." So, we need more studies in this.

SHAWN STEVENSON: Right, right. Yeah.

DR. SUSANNA SØBERG: I think we can talk about this in a theoretical manner. Saying, "Well, how does the neurotransmitter and the hormones work in the body? What would be best in that way?" But we really need studies to see, really what is best practices here.

SHAWN STEVENSON: Yeah, and there is, of course, bio-individuality with this, there's so much anecdotal data...

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: But this is going back to, again, centuries of our ancestors utilizing this practice and just honoring that they figured something out, and now we're just finding the details. In the book. Each chapter, you have a quote to open the chapter, and one of the chapters opened with this quote, "The greatest joy in life, is doing what people say you can't."

DR. SUSANNA SØBERG: Yeah.

SHAWN STEVENSON: Why did you use that quote, what does that quote mean to you?

DR. SUSANNA SØBERG: Well, actually, you are the first one asking for that one, so I think it's a little bit... I think it's good. It's a good question. And I found this quote and I find it... It was so well suited at that time, 'cause I was doing my PhD and also seeking funding at this time, and for years I was a bit struggling with this, there's a lot of scientists struggling to get funding, it's well known, I think. And I found this quote and it was just so specifically telling my story at that time, and people told me to stop at some point because, "You're not going to get funding to this kind of research." And so, there was a lot of people telling me to maybe try something else, because this is really... It was really hard to get the funding to this, so they were also just trying to help me, I know that what they said, it's going to be really hard for you, but then on the other hand, I'm super stubborn, then I'm like, "The more win for me, if I can do it."

SHAWN STEVENSON: I love it, I love it. That's what it's really all about. And also, of course, the practice probably helps as well, creating your stress resilience and your mental resilience, and

it's so remarkable, I'm grateful that you kept going and moving this conversation forward, and can you let people know where they can pick up a copy of Winter Swimming and where they can follow you and just kind of get more into your universe.

DR. SUSANNA SØBERG: Yeah, so Winter Swimming, you can buy that online on Amazon, on the US Amazon, it's also available in Canada and Australia and UK Amazon, so you can go there and purchase the book and please put a review. That is very important also, so other people will see that and probably also read it. People can find me on social media, I'm active on Instagram especially, where I post about all these benefits from the cold and the heat exposure breathing, which are like the free approaches that I have put into my educational approach, which I also teach on my website, which is called the 'soberginstitute.com'. That is Susanna. You can also go on susannasoberg.com it's the same, but soberginstitute.com and you can find my courses there, where I teach this, there's a whole program, which I put out and it's like bite size, just really telling in layman language, how to practice this and you can follow this and then you will learn all the benefits from it and you will put it into your life, learn how to breathe, to lower your stress level, so you can get a more peaceful life, less inflammation, so...

SHAWN STEVENSON: I love it, thank you so much. And again, I know that you came literally halfway across the world to be here, and I just really appreciate it, thank you for the work that you're doing and spreading the information and the empowerment as well, and really just re-affirming that there's so much that we can do, to be more resilient. And to be empowered and to be healthy. And so, I appreciate you for that. Thank you.

DR. SUSANNA SØBERG: Thank you, thank you for having me.

SHAWN STEVENSON: Of course, Dr. Susanna Soberg, everybody. Thank you so much for tuning into the show today. I hope you got a lot of value out of this. Are you more inspired to get into the cold? Are you more inspired to get into a cold plunge, cold shower? There's so many different ways to go about this. Has this tickled your fancy and made you more interested in doing this? Or if you already have a cold exposure process, did this episode help you to anchor-in your practice and add more legs to your belief on why it's so valuable? If it did, please share your insights. Re-share this episode, post it on social media, tag me, take a screenshot of the episode, and tag me, I'm at Shawn Model on Instagram and on Twitter, and I'm at The Model Health Show on Facebook. Keep this conversation going, it's very, very empowering, and this is something that most people have direct access to, to add to their lives, to improve their metabolic health, to improve their mental health. Right now, this is so important and to become more physically and mentally resilient, I appreciate you so much for tuning in to the show today, we've got some incredible master classes and world class guests coming for you very, very soon, so make sure to stay. Take care, have an amazing day, I'll talk with you soon.

And for more, after the show, make sure to head over to themodelhealthshow.com, that's where you can find all of the show notes, you could find transcriptions, videos for each episode, and if you got a comment, you can leave me a comment there as well. And please make sure to head over to iTunes and leave us a rating, to let everybody know that the show is awesome, and I appreciate that so much, and take care, I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.