THE MODEL HEALTH SHOW

EPISODE 792

Boost Fat Loss, Improve Mental Health, & Extend Your Lifespan With Thermogenesis

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SHAWN STEVENSON: Boost fat loss, improve your mental health and extend your lifespan with the science backed power of thermogenesis. Today you're going to discover how to utilize a specific change in temperature to radically improve your metabolic health. Specifically, it's the occasional exposure to cold temperatures, in a very specific way and a very specific amount of time that will deliver you some remarkable benefits. First, we're going to take a look at the impact that thermogenesis has on the systems and cellular structures responsible for burning fat. The end destination where fat is actually burned for energy in our cells is within the energy power plants of our cells called the mitochondria. Having a sufficient number of mitochondria within our cells and having efficient, healthy mitochondrial function are both keys to great metabolic health. Now, more and more science is pouring in affirming that one of the most mitochondria rich tissues in our body is known as brown adipose tissue aka brown fat. It actually gets its brown appearance because it's so dense in mitochondria. Now brown fat is a heat generating type of fat that actually burns energy instead of storing it, acting more like muscle than fat. And research has now proven that brown fat can actually be activated to burn more body fat by adapting your body's temperature.

Now maintaining a healthy amount of brown fat can be a key ingredient in a robust metabolism. Research published by the Garvan Institute of Medical Research found that once activated just 50g of brown fat on your body could burn an additional 300 calories of energy in a day, just automatically. That's about one 10th of a pound of brown fat that can burn an additional 300 calories per day. Now, several factors influence how much brown fat we have and how well it does its job, but one of the most notable ways to activate your brown fat is exposure to cold temperatures. A study cited in the New England Journal of Medicine found that brown fat activity was activated in 96 percent of test subjects during cold exposure versus when they were in thermo neutral conditions. Furthermore, the scientists note the metabolic importance of activating brown fat that has since been revealed in other studies. A study that was published in the journal Nature Medicine examined 52, 000 participants and found that those who had a detectable amount of brown fat were less likely than their peers to suffer from cardiac and metabolic conditions ranging from type 2 diabetes to coronary artery disease, both of which are leading causes of death in the United States and really worldwide.

Now, again, we're already seeing this trend in having more brown fat. Brown fat activity and actual brown fat tissue itself is deeply connected to a reduction in metabolic diseases. Now, on top of that, brown fat appears to be heavily involved in hormone signaling to other organs that can improve body wide metabolic performance.

A study titled, "The brown fat secretome: metabolic functions beyond thermogenesis" details the influence brown fat has on the entire endocrine system. So your hormone system overall, also the impact that it has on your cardiovascular system and even your immune system. Now the question is, how does exposure to cold temperatures impact these different metabolic systems? Impacting your immune system, your cardiovascular system, and your endocrine system, and really body wide. What are some of the underlying mechanisms? The recent meta analysis titled "Health effects of voluntary exposure to cold water" demonstrated significantly increased insulin sensitivity and decreased insulin concentrations in human studies. Exposure to cold temperatures, in particular, cold water immersion has a remarkable effect on improving insulin sensitivity and also circulating insulin levels. We're looking at cold water exposure, again, for a specific amount of time that we'll get to later, activates brown fat activity, improves insulin sensitivity and decreases insulin concentrations, thus decreasing the likelihood of storing excess fat in the first place. So this is a potential practice and a potential implement that we can utilize to dramatically improve our overall metabolic health in numerous ways. And to take this a hormone supportive step even further, In this meta analysis, it was found that cold water immersion can actually boost satiety and metabolism supportive hormones like Adiponectin.

Adiponectin has recently gained notoriety as one of the most potent hormones influencing your appetite and your fat metabolism. Adiponectin, like leptin, which is another powerful satiety related hormone, is primarily produced and secreted By fat cells in your adipose tissue, which is where adiponectin derives its name. Now it's been noted to help your body to move fat away from the viscera belly fat area To the less dangerous and more usable subcutaneous fat region While low levels of adiponectin have been associated with obesity, insulin resistance, and metabolic syndrome. And researchers at the University of Pennsylvania recently discovered that optimal levels of adiponectin can potentially support fat loss without increasing appetite.

And what's so remarkable about all of this, without tinkering with our diet, simply making a habit to expose ourselves to cold temperatures can activate metabolism. can produce and mobilize more adiponectin. And to top it all off fascinating new research published just days ago. As of this recording hot off the presses, this was published in the international journal of molecular sciences showing that cold water immersion can boost mitochondrial biogenesis. This is the creation of new mitochondria, these energy power plants of ourselves and protect muscle tissue, even in old age. These results were seen in well constructed animal models and the results are very promising for human trials as well. So many benefits are being studied right now. There are literally trials going on every day.

New studies getting published just about every week, looking at the remarkable impact of cold exposure on human health. And this is something that humans have been doing for decades. Forever, and today we know that many of our glorified creature comforts is keeping this consistent temperature, just having it at this perfect, non threatening, non uncomfortable temperature, 24/7. It's a wonderful thing. I know what it's like to be exceedingly hot at home. And I know what it's like to be exceedingly cold growing up. There were times when, you know, St. Louis, those summers they hit different. All right. The St. Louis humidity likes to do some BJJ moves, put you in a rear naked choke and put you out. All right. I know what that's like. And my parents, living at that poverty line, not want to turn the air condition on. It was dire straits and I, my room was upstairs. Once we moved into a nicer neighborhood, we were still living with the poverty vibes and my room was upstairs, so heat rises.

It was the worst sleep of my life for sure. All right. I tried to spray myself down with some water, and put the fan in the window the right way. Just, sleep bucket naked with just a sheet just in case my little brother came in, had the little toga vibe going and It was not fun. I would gladly put that AC on. And the same thing holds true many times when we didn't pay the gas and it was exceedingly cold in the house as well. And you just got to bundle up, got to walk around the house with a coat on. And so we've really come to value our ability to change our temperature. And it is of course a total blessing. It is an amazing gift and innovation from the human spirit to be able to modulate this. But the question Is this taking away something that our genes expect and value and help to function as an epigenetic controller of all types of health benefits that we've effectively just put to the side, like we've just lost and forgotten about?

And again, is this another component of why we are so radically unhealthy in our bodies? Our modern time again, we've got all of these apparent innovations and yet we're sicker and more dysfunctional than we've ever been as a species and I'm telling you now that This science around thermogenesis around thermal regulation is going to be one of those things that you hear consistently again and again.

I've been talking about this for over a decade. All right, you go back and check my track record of previous episodes of the show, but just looking at some of the longest lived cultures and seeing how. So there is this kind of proactive exposure to nature and that comes coupled with changes in temperature and our bodies thriving and our bodies desire to heat or cool itself to adapt and to elicit all these amazing metabolic changes. And so today what we're trying to do again, since we are not living in conditions where we are constantly being force to adapting our body temperature. If we start to create essentially a thermal regulation gym for ourselves, we can start to extract some of these benefits.

And again, we're going to talk about the specific amount of time and the ideal way to go about getting these benefits in a little bit.

But I want you to keep in mind, by the way, that in addition to cold temperatures, being able to directly activate our brown adipose tissue, there is one thing dietarily that has been found to have the most remarkable effects. And this was affirmed by scientists from the school of medicine at the university of Nottingham, who discovered that drinking coffee may be able to influence the activity of your brown adipose tissue. These scientists uncovered that coffee appears to be able to nudge our beige fat cells. So we have our white adipose tissue. That is really the primary storage form of fat tissue that stores energy. Then we have these beige cells that come from their own precursors that can actually change to either white adipose tissue to store more energy, or they can change to Brown adipose tissue cells.

They're really. Cool cells. So these beige fat cells appear to be nudged into the brown fat gang by the consumption of coffee. Plus the researchers used thermal imaging and found that drinking coffee actually lights up brown fat dominant locations on our body alright, indicating increased thermogenesis. Pretty amazing humans have been drinking coffee for a long time but again The coffee wars are out here, all right. There's people that are just gung ho about all things coffee. And there are people who think coffee is the worst thing ever. All right. We got coffee on one side. Kendrick Lamar. We've got non coffee on the other side, Drake, and it's just getting messy. All right. We got to chill. We got to find some common ground.

Because both people have some valuable perspectives, but the reality is in this analogy probably results in J. Cole, the middle child. Oh, this is getting good. This analogy is crazy. Seeing that there are benefits to this, but it's within context. All right. So it's not the coffee itself that is out here messing up people's health, especially if used respectfully. All right. It is primarily the garbage that's added to said coffee and the quality of the coffee itself. All right. Now, with that being said, a meta-analysis of 40 studies published in the European Journal of Epidemiology revealed that regularly drinking coffee was associated with a lower risk of death from cardiovascular disease, certain types of cancer, and all cause of mortality.

We've done masterclasses on the benefits and concerns of coffee here on the Model Health Show. So we'll put one of those episodes for you in the show notes. But just keep in mind that utilizing high quality coffee is well documented to be health affirming. Of course, we want to avoid all of the ultra processed nonsense that can go into a cup of Joe and Ensure that we're getting high quality coffee that is not laced with pesticides and herbicides and rodenticides and heavy metals and all that stuff.

And this is why I'm a huge advocate of the coffee from Four Sigmatic. Now, not only do they have organic high quality coffee from select farmers, but they also infuse the coffee with well studied science backed medicinal mushrooms like lion's mane, reishi, chaga. Cordyceps. The list goes on and on. Check them out.

Go to foursigmatic.com/model. And you're going to get 10 percent off all of their incredible coffee blends. And Hey, if you're not a fan of coffee, they've got incredible mushroom teas as well. Dual extracted. This is what makes them different. They were the first company to utilize a dual extraction of these medicinal mushrooms. So you actually get. the beneficial compounds that are seen in these peer reviewed studies. And so again, I highly recommend checking them out foursigmatic.com/model. And keep in mind the benefits that you can potentially see on our metabolism with high quality coffee. All right. Now we've already dipped our toes in looking at the benefits of cold immersion on our metabolic health and fat loss.

Now let's look at another area of health that is extremely important today more than ever, because we're seeing chronic rates of mental health issues in our society today. And let's look at the potential impact that cold water exposure has on our mental health. Several studies in that recent meta analysis That we mentioned this was published in the International Journal of Circumpolar Health demonstrate remarkable benefits of cold immersion on our neurochemistry, "indicating that regular cold water exposure could relieve depressive symptoms rather efficiently". The scientists noted people who do cold water immersion tend to be, "more energetic, active and brisk compared to the control group". They also noted that participants with painful chronic conditions who do cold immersion had less pain in their day to day lives than the control group. Now pain can be a primary driver of symptoms of depression and so this is addressing this in multiple levels already.

Now, another study published in the peer review journal, QJM monthly journal of the association of physicians investigated the antioxidant based stress response in cold water swimmers versus a control group of healthy subjects who don't engage in cold water exposure. They were looking to see because one of the hallmarks of mental health challenges, ranging from depression, anxiety, bipolar disorder, the list goes on and on. There's an underlying component of stress and some form of dysfunction or deficiency and overall stress resilience. So they were looking at how to potentially improve stress resilience. Now, their definition of adaptation in the study is "adaptation to oxidative stress is an improved ability to resist the damaging effects of reactive oxygen species, resulting from pre exposure to a lower dose. So a lower dose stress".

Now, after obtaining blood samples from the winter swimmers and examining their antioxidative defense systems, they determined the swimmers developed "An adaptative response to repeated oxidative stress and postulate it as a new basic molecular mechanism of increased tolerance to environmental stress".

This process, as the researchers indicate, increases our tolerance for stress in the external world outside of that cold exposure. Having that practice, this hormetic stressor makes us more resilient to stressors in our day to day lives. According to the latest data, it makes us more resilient. Now, one of the foremost experts in the world running studies on cold immersion is Dr. Susanna Soberg. And she received her PhD in metabolism, specializing by the way, in brown fat from the University of Copenhagen in Denmark. And she actually shared with me here on the model health show, how cold immersion increases stress resilience. Let's hear what she has to say.

DR. SUSANNA SOBERG: 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 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 drip. 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 hermetic stress, so it's healthy stress. So short term stress which will build your cells stronger, and if you don't overdo it, you won't exhaust them. So it's really important to. 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, 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're 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 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 reason or 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 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 you can lower that inflammation in the body, we will lower the stress in your body and your brain, and you will lower your, you 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 your, increase your insulin sensitivity, which is actually some of the findings from my research. Also, what are the things that I just mentioned? 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 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 maybe chronic inflammation as well.

And of course 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. Basically we're like waterboarding ourselves. with stress over time and help it to reduce inflammation through this practice and opening the door for improvements. And obviously obesity is a huge issue today in particular here in the United States, seven, about 70 percent 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. Let's talk more about that.

DR. SUSANNA SOBERG: 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 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 parts 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 bloodstream. 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.

with that also mental diseases or that depression is associated with or Obesity is associated with also having a higher risk for depression. So it all comes down to the inflammation part of it so if you increase your insulin sensitivity by activating your brown fat and also your muscles. Exercise is excellent.

So it's just, yeah, just part of your, you can say your regime for lowering your stress and lowering your inflammation. So if people want to 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: Now, as mentioned, Dr. Soberg has conducted and reviewed a wide variety of studies on cold immersion. And in addition to her own studies, she actually shared with me a study that was cited in the journal biology where researchers used fMRI scans and looked at the brains of study participants before and after the cold.

Cold water exposure and the scientists found remarkable changes in the brain indicating better overall brain functioning, improved integration between different areas of the brain and notable improvements in mood and mindset of test subjects. Specifically, they found participants had improvements in their attention spans, self control, and most notably, They became more confident and inspired. And this is one of the consistent things that you see with people who consistently do cold water immersion. All right. Many of the people who've made this practice a part of their lives report just this invigorated energy, improved ability to focus, to get stuff done, more motivation, better resilience against the stressors in their lives.

And really it's this practice of choosing. to put ourselves into a stressful condition, a safe stressor, a safe hormetic stressor, and thereby building up that resilience of our nervous system, building up the resilience of our biology. Now, keep in mind a wide variety of cold exposure practices have been studied from cold showers to cryotherapy chambers and more, but the most effective science backed method is cold water immersion via open bodies of water or cold plunge tubs. And countless people all over the world, literally millions of people are making a cold plunge as a part of their weekly health practice. The most recent published data affirms significant reductions in inflammation, improvement in sleep quality, increased mental resilience, and so much more. And it's pretty astonishing to see all of these things That this practice can improve. Now, my entire family has been doing this practice for several years from my now 12 year old son, all the way to my mother in law who's thriving in her senior years. In fact, she actually does it more than any of us when she's over at our place and utilizing our cold plunge tub, which partly explains, I think, why she's running circles around her peers.

But she is somebody who is. been adamant about studying wellness, studying longevity. And she's been my greatest teacher on this mission of wellness, and I just appreciate her so much. And just even seeing how she takes on this practice was motivating for me as well. And now the only challenge for us has been having a place to actually cold plunge that doesn't require us to consistently.

Find bags of ice and to constantly clean and constantly setting up the space to do it. But all of that changed when we found out about the incredible tub from the plunge. This incredible tub is always ready to use and has some incredible features. Number one, it has a long lasting durable build. The plunge tub is made of acrylic and fiberglass with a reinforced metal base That will last a lifetime.

It is incredibly durable. It's clean and ready to use whenever you want. It has a continuous water flow and a 20 micron filter that pulls out debris from the water and it's self contained. There's no need for additional plumbing, no need to repeatedly find ice and to get cold water. Once you fill it up from your hose, the water can last for months without additional maintenance. It's pretty incredible. And also this is what I valued the most with it because not having space in my house for something like this, being able to have this outside in our backyard and have this durability because it is incredible for indoor or outdoor use. And actually you can set the temperature to whatever you want.

It cools down as low as 39 degrees Fahrenheit for those who like it extra frosty. And it works seamlessly indoors or outdoors. And I also love that they're hooking people up with an exclusive discount on their tubs as well. And right now you get 150 off the plunge tub of your choice by going to plunge. com/model. I go to plunge.com/model. Get hooked up with $150off their incredible cold plunge tub. And they also have a lot of new cool things there as well that I'm excited to test out. But again, this is a great investment into your health and longevity. So just think about it like that. And because it's a great investment into your health and longevity, plunge also has no interest finance options. Protection plans, free delivery, and other cool perks. So definitely pop over there, check them out plunge.com/model. And more importantly than those additional perks is the perks and benefits that we get for our customers.

Our metabolic health and also for us in my context, my family unity and something that we do together as a family. And I wanted to give you a couple of extra tips. Again, this is all affirmed in the science in particular, in my conversations and the research coming from Dr. Susanna Solberg, who is one of the leading experts in the world on cold immersion therapy and all the different benefits. And she shared with me our brown fat and being able to actually immerse our primary brown fat areas of our bodies in the water elicits additional benefits. And brown fat is mostly located on our upper back, our neck. And our chest as well. So aim to get the water to those parts of the body. You don't have to, you're still going to get incredible benefits. But if you can go low, get really get down into the water, get that water up to, up over your shoulders, if you can. It's just going to be even more with the benefits, but you don't have to.

I don't know if you've seen this. Kevin Hart has a show called Cold as Balls. All right. This practice is so popular. There's an entire show that he does interviewing all of these incredible entertainers and athletes and all this stuff while getting into a cold tub. All right. And he doesn't tend to get all the way in, by the way. All right. A lot of his guests do. But if you happen to have not seen this show, it's interesting content.

Definitely out there in the Internet verse. So in addition, according to Dr. Solberg, in terms of our perception of water temperature, because if you're wondering where to put the water temperature. There is a threshold of around 60 degrees Fahrenheit. All right. After which we experience the water as freezing cold and incite the most notable metabolic changes. So really, anything under 60 degrees. Now, you'll definitely notice, I think it's more of an adaptation or how quickly you adapt. That the colder the water is the longer it takes for you to adapt. That's kind of been my experience but, You know, we can have the thermostat on the plunge set at say, 49 degrees for example, and it's still Frosty cold.

All right We don't need to necessarily go all the way down to 39 But you can and just putting it at the temperature that you feel is ideal for you And the question Should also be what is the minimum effective dose? How much time a week do we need to utilize cold immersion to get these benefits that we're talking about? According to Dr. Solberg's data, 11 minutes total in a week. 11 minutes total in a week. This doesn't mean one 11 minute session, all right? So that could be broken up into three sessions, you know a little bit around three minutes ish three times a week get these maximum benefits, but you don't got to even do that, you know once or twice a week just Dabbling in cold exposure is going to build up your Cold exposure mental and physical resilience, support your metabolic health.

And also now we're going to move on to another science backed benefit of this cold immersion therapy. Number three is the impact that it has on our longevity. Now, keeping in mind a big part of the longevity equation is not dying. Now that seems pretty obvious when you say it out loud like that, but not dying prematurely from largely preventable conditions. That is one of the key aspects of human lifespan, of human longevity, and the number one killer worldwide, and in particular here in the United States, we have the highest rates is cardiovascular disease. So doing what we can to eliminate that risk, to fortify ourselves against cardiovascular disease is going to boost our longevity.

And a fascinating study tracked a wide variety of biomarkers from people who are well adapted to cold water immersion and people who are not. The 2015 study titled Could human cold adaptation decrease the risk of cardiovascular diseases, tracked inflammatory biomarkers like homocysteine, antioxidant defense biomarkers, a variety of hormones, and more.

At the end of the study, the scientists uncovered that cold water adaptation can significantly reduce the risk Oxidative stress biomarkers reduce inflammation and provide, quote, cardio protective benefits. Now these are some of the overlooked aspects of cold water immersion. A lot of people do it for the mental health benefits, for the benefits that they see with their energy, for the improvements in sleep quality, and might not think about or even know about the benefits that it has for our cardiovascular system.

And it's one of those things that can seem kind of logical, our circulation is going to be altered when we're in that cold experience. And then there's going to be this kind of vigorous circulation that happens when we come out of that cold plunge. And again, helping to fortify our cardiovascular health is one aspect, but worldwide, again, the leading causes of death are cardiovascular related diseases.

From there, we move into a variety of lung diseases from COPD to infectious diseases. And all of these major lung related conditions are dictated by the function of the immune system. Now there is a plethora of studies affirming how cold therapy, cold water immersion fortifies and supports the immune system. But I thought I'd share another insight from Dr. Soberg. Again, sharing a little bit about how cold immersion fortifies immune system function.

DR. SUSANNA SOBERG: Our immune system is definitely activated or affected by cold exposure because it's part of our stress stress syndrome as well. So when we are exposed to some kind of stress, it could also be exercise. Actually, you are activating your immune system. So going into the cold. That is very potent for this because that's gonna increase your leukocytes and monocytes in your body. And these are, the monocytes 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 going, taking cold plunges. So it could be winter swimming, it could be cold plunging, or you can call it what you want, ice swimming, but it's just going into cold water. But when people do that, then, 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. I mean, a few hours is 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 low inflammation in the body, and they don't need as much leukocytes and monocytes in the body, because you have to think about as a feedback loop every time you 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 you benefit from, right?

So it could be a virus also. So when you decrease that, 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 good thing.

SHAWN STEVENSON: Now, in addition to supporting our cardiovascular system and our immune system, we know that a huge aspect of longevity is retaining our valuable muscle mass and defending ourselves against age related sarcopenia. Referring back to the study published again just days ago, as of this recording in the International Journal of Molecular Sciences, cold water immersion is showing strong evidence of increasing muscle performance and enhancing mitochondrial biogenesis and increasing muscle energy metabolites, even in advanced ages. All right. So there's so many factors here with this practice being able to support our longevity. So I hope this gave you a little inspiration, a little nudge, a little encouragement to utilize this because we're now living in a time where we're constantly operating and living in this creature comfort temperature and not giving our bodies the opportunity to adapt. And we're seeing today that this is a powerful epigenetic influence when we're able to get ourselves exposed to exceedingly warm temperatures and exceedingly cold temperatures. There is an abundance of health attributes to be unlocked.

Now, in closing, I want to share with you a couple pieces of practical advice when utilizing cold thermogenesis to improve your health. Number one, the intention here is to improve your stress resilience. It is not ideal to utilize a cold plunge when you're already exceedingly stressed. If your stress inputs are already exceedingly high, there's no need to throw this in on top of that. This is something to be utilized more proactive so that you could better manage the stressors in your life. This is to build up stress resilience, not to dig you out of a hole. All right. So keep that in mind when utilizing this practice. And also it is not ideal to cold plunge when you're feeling sick or under the weather.

Again, your system is already experiencing an excessive stressor and it's adapting to that. And there's no need to throw this in on top of that. So just making sure that you're feeling good. Already, not under the weather, not experiencing an infectious condition. Just keep that in mind as well. And most importantly, again, this is about being proactive. This is a preventative health practice that has a tremendous amount of benefits from our energy levels, our mental health perspective, our metabolic health, our cardiovascular health, and so much more. So I wanted to do a masterclass so you have this knowledge base.

You're going to be hearing much more about this out here in the internet sphere and published data about the benefits. And so I just wanted to keep you up to date and also again, make sure to check out plunge.com/model. They have the very best cold plunge tub. I've been utilizing it. Now it's been a couple of years almost. And this is something that my family, again, it's a bonding thing for us too, which I really love, but also just the benefits. One of the remarkable things that I do see and experience myself personally, is greater stress resilience. Yes. There's an energy aspect to it as well. That's pretty notable, but for me, just handle stress.

better when I have this as a consistent practice. So again, check them out plunge.com/model. And listen, we've got some epic masterclasses and world class guests coming your way very soon. So make sure to stay tuned, take care, have an amazing day. And I'll talk with you soon. And for more after the show, make sure to head over to TheModelHealthShow. com. That's where you can find all of the show notes, you can find transcriptions, videos for each episode. And if you've 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.