Exercise & Sauna Therapy For Hypertension Transcript

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Introduction and Background

Welcome back to the Reverse Hypertension Naturally summit. And today we're going to interview Ari Whitten Now Ari has an expertise in exercise science and nutrition.

So welcome, Ari, today to the summit. Thank you so much for having me. Wonderful. Well, in the context of hypertension, any lifestyle intervention that's moving towards a healthier journey is going to make a difference.

But today we're going to highlight exercise and particularly likes on a therapy and things like that, which is your expertise. Could you give us a little bit of a broad background of where you're coming from and then maybe highlight how we can start looking at helping people with their hypertension?

So do you want to hear about my sort of personal story or just. Yeah, my philosophy? Yeah, I think the philosophy or your background, whatever you feel would be helpful for us to understand where you're coming from.

And in reference. Well, I guess very briefly about me in particular, you know, my my background is in studying exercise, science and nutrition from a very young age.

So I'm 40 now. I've been studying this since I was about 12 years old originally in the context of being an athlete and being into fitness and bodybuilding.

Health Philosophy and Evolutionary Perspective

So, you know, my my expertise is a bit different from most people that are probably on this summit in the sense that my background is in health science, not in studying pathology and disease science.

And and this really is a very big distinction. And actually, the older I get and the more I have conversations with people, the more I realize what a big distinction it is. So I guess as an analogy, if if you know the way I perceive things as a philosophy of how we need to look at human health is you could say if if we wanted to build a beautiful garden, there might be two different kinds of expertise that we might enlist in the process of trying to do that.

And one might be to develop a whole body of expertise on the types of pathologies that might afflict that garden, like weeds and garden pests, and to develop a large body of expertise on the different types of chemicals that would be appropriate to use to get rid of each one of those types of garden pests or weeds.

It's an entirely different, entirely different body of expertise that one might have that's about how to cultivate and nurture a wide diversity of plants that yield abundant food or that build a beautiful garden.

These are different kinds of expertise. So one is about combating the negative one is about building the positive. The more that I study health and the more that I've learned about disease and I have taken lots of graduate level pathology courses in pharmacology courses in genetics and immunology and all kinds of stuff.

The more I realized that building the positive generally is a more effective approach than trying to combat the negative. So trying to, in other words, thinking about cultivating positive function, performance and health rather than trying to fight against a particular kind of disease.

Pathology tends to be more beneficial. So that's one of my core philosophies and biases. You could say. I also come from a very strong experiential background in health, meaning I've been experimenting with my own body to enhance performance for almost three decades now, as opposed to just studying in a classroom intellectually about different diseases and different pharmaceuticals that might be appropriate to describe for those diseases.

And then the other thing I would say is that my background or my bias is strongly in favor of an evolutionary bias, looking at health through the lens of evolutionary biology.

And, you know, one thing that might be important in this particular context through that lens is as as we look at hypertension and the consequences of hypertension, let's say heart disease, heart attacks, strokes, things like that, or even even other brain conditions.

What what are the incidents of those very same problems in traditional living humans? And, for example, hunter gatherer tribes that have been studied over the last few decades that still exist.

We don't have to invoke, you know, theories based on looking at bones from, you know, gravesites from 10,000 years ago. But hunter gatherers still exist in many places around the world.

I shouldn't say many, but some places around the world we can study them. They have been studied. We know about these kinds of things. For example, that Tsimané a tribe in Bolivia has been well-studied for incidence of cardiovascular disease and heart health.

They have almost zero incidence of cardiovascular disease, of heart attacks, of atherosclerosis, of hypertension. It almost doesn't exist in traditional living human populations.

Now, in any group of scientists that wasn't so uniquely obsessed with pharmaceutical interventions for diseases, that would be an extraordinarily important finding because what it would tell us is maybe the answer isn't to study disease.

Lifestyle Disease Prevention and Population Health

People with this disease to figure out the mechanisms of this disease such that we can go into a chemistry lab and synthesize manmade chemicals to fight this disease.

Maybe a better approach would be to study people who don't have this disease and figure out why they don't have it and to mimic their behaviors. So that's a bit about my philosophies and biases.

Well, I think we're very strongly aligned. So, I mean, I came out of allopathic training as a physician, but I as a family medicine physician. But have also Board Certification in Lifestyle Medicine.

And so it's taking people back to those healthy behaviors and really aligning them with the understanding that they can change. So unfortunately, in the traditional medical system, we catch them when they're sick.

So we're kind of reacting and it's kind of going upstream. I like your effect there. So maybe we can start back like how far upstream is, you know, what your expertise is.

And in the exercise, like where does that come from and what what have you seen working with people across your 30 years of study? Yeah, well, you know, I think more broadly, if I can zoom out for a second.

Let's place hypertension in the context of diseases of civilization. And these are modern diseases of the modern environment and lifestyle. And they are also alternatively sometimes called diseases of aging, the chronic diseases of aging.

And this includes things like heart disease, diabetes, cancer, stroke, dementia and Alzheimer's and several other diseases. But and the what's interesting is that the number one risk factor for these diseases is actually aging itself, is actually being an old at an older age.

It is a much more powerful risk factor than any other risk factor, including things like smoking or even things like physical inactivity or something like that.

Now, the reason why that happens is many of these diseases are essentially largely the consequences of accumulated damage to the structures and functions of key organ systems of our body.

I'm trying to thinking how deep to go into this answer, but that the issue with that is the issue with our common way of approaching many of these diseases is twofold.

Number one is that once you have accumulated a very large amount of physical, it's not just changes in your biochemistry. This is a thing that many people think.

They think that they go to the doctor, they get a blood test. Their blood test shows them the chemicals floating around their blood and their health is a reflection of that.

Your health is also very largely a product of the actual physical structure of the cells and tissues and organs, systems of your body. And if you accumulate enough damage to that structure, it's very hard and at a certain point actually impossible to reverse it. And bring it back to youthful, healthy structure.

So that's one thing. The other thing I want to add to this is it is also largely an illusion that we're just working on one thing. When we look at most of these chronic diseases of aging, it is almost always co-occurring with other kinds of dysfunction or disease and damage to structures and organ systems in many other systems of the body.

The body is highly interconnected and we generally don't have isolated dysfunction and damage in just one system without it occurring in several other systems.

And this bears out in the statistics when we look at these diseases that most people who are over the age of 65 or 70 have multiple conditions and are on multiple different drugs for different symptoms or different diseases.

And so this is the reality. It's a very common misconception that many people have because we list causes cause of death. Oh, this person had a heart attack.

This person had cancer, this person had diabetes. And we have I would say, in the general public, the illusion that we're fighting against just one thing, one isolated disease.

But really, what I'm trying to do is paint a picture that as a what we're trying to do and what is most effective in actually minimizing these different diseases of civilization or diseases of aging is prevention, is being healthy, is to do interventions upstream before you have decades and decades of incurring lots of damage and dysfunction and physical alteration of the structures of your tissues.

So yeah, that that's the the broad answer to that question. I guess my question is, how do you get people to and the society that we've built, this environment I feel is it triggers, right?

So how do we get people interested outside of, you know, those who are looking to optimize human potential? There's obviously those athletes and others who like to do like, you know, in of one set of experiments, how do we encourage or get people interested in this really proactive element?

Because it's so hard to envision yourself older now when you get there, because I'm like in my mid-fifties now, like, yeah, I get it. But when you get a young person and they're like a 56 year so far away, Oh, I'm going to enjoy myself now.

How do we start that conversation? Any thoughts? Yeah. Yeah. I mean, what you're getting at is psychology and behavior and paradigm.

Exercise, Hypertension, and Vascular Remodeling

So and this is a very complex question. Obviously, if I had all the answers to that, then we could solve over 80% of the disease burden because over 80% of the chronic disease burden are these diseases of lifestyle, diseases of

civilization.

So if you can effectively do it, what you're asking, what you're alluding to in this question, get people, get the entire population. And to make smart decisions when they're young, before they have health problems, instead of trying to wait till they have health problems and then react to them and say, Doc, you know what?

What drugs should I take for this problem? If you can do that, you could eliminate 80 plus percent of the disease burden. Now, as far as you know, to be very blunt, look, I'm the way I look at health, not since I'm not a clinician working one on one.

I, I, I'm more of a teacher of health science than I am a, a clinician who works one on one with people who have a disease. And there's a place, obviously, for both.

But given that I'm in that position, if it affords me the opportunity to look at things from a more meta perspective, if you're if you've got somebody sitting in front of you says, you know, I'm 65, I'm 70 years old, I've got hypertension, you know, I've got I've got kids.

I've got to support my family about it. You know, you have to help that person. What what are the the interventions that you can do to try to lower that blood pressure, to get that person as healthy as possible or functioning as best as possible.

I'm looking at things more on the population level from the meta perspective and saying, like I said before, this population over here that lives this way, they don't have this problem at all.

Maybe we should mimic those behaviors. Now, to answer your question, how do we get more people to do that? I think number one is education, that we can only make those kinds of decisions if we have the knowledge, if you if you have people out there teaching the science so that they even understand this, because I would say the vast majority of the population isn't even aware that there are human populations that exist without these problems, and that that is even a possibility.

Most people are walking around thinking, Oh, this disease runs in my family. Heart attacks or high blood pressure runs in my family. It's genetic. My dad had it and there's nothing I can do about it.

I go to the doctor and obviously they prescribe a drug that's that's evidence based medicine now. So that's that's most people's perception, number one, is realizing, no, this is not a genetic disease.

This is a disease of lifestyle. It is possible to not have this disease if you have a healthy lifestyle. So and then secondarily to that, what are the components of a healthy lifestyle?

How do you actually implement that so that you can be free of this disease or avoid it in the first place? And if you catch it early enough to reverse it?

Psychology and behaviorally, that's very problematic because as you were alluding to, many people operate in a frame where they're only interested in doing something about it.

When they have a problem, when they're experiencing enough pain that they go, Oh, I really got to do something about this now. I'm willing to make changes.

The reality, the harsh reality. And this is, again, something that I can do as more of a teacher of health science rather than a clinician. I can look at things from this population perspective.

The reality is kind of harsh. Reality is that some people are going to be smart enough to realize and educate themselves about the care of this physical body that they exist.

And some people are not. Some people are going to learn enough about it that they realize that the only way to

actually live a long time in good health is to to make decisions to care for this physical body before you have a widespread degeneration and damage to the different organ systems of it.

Certain people will do that. I would say the smarter people who are more motivated will do that and a certain segment of the population won't. And that's kind of the harsh reality. And like if you're asking me how do we get all the people who don't want to do that, to do that?

That's a very difficult question. And I don't think you can I think you can educate people. You can teach them the importance, and then it's up to them to decide whether they want to prioritize it or not.

Yeah, I think that goes back to a macro level, right, that we have to create environments on a society level that makes the healthier choice, the default answer, and we take the human element out of it because this is what we do in our society.

We're so far not I don't know if we can ever get back, but that's the easier answer, I think, than individual human behavior changes. So if I was in charge of health policy from the government and I was in charge of the government, the way the government regulates the food industry and the way that environments of cities are designed.

As far as how it either lends itself to non-conscious physical activity or not. If I was in charge of the way people worked such that I could create workstations for individuals in every environment that were treadmill desks and were whether they worked on cycling desks where they had to provide electrical power via pedaling the bike to charge up their computer and things like that.

Would I do that? Would I design the environment in a way that naturally facilitates that without relying on individual choice and willpower and education?

Absolutely. Yeah. I think that's a great addition to that. I think the reality is, though, that two fold, number one, we'd be waiting a long time for that to actually happen.

And sadly, there are way too many financial interests that are that are at odds with that, such that, you know, particularly the food industry and the pharmaceutical industry.

We could add to that as well. But certainly the food industry doesn't particularly, which is a very, very big industry. And all of those financial influences aren't necessarily too happy with the government deciding, hey, all this processed food and all this refined food full of added sugars and added oils, and we're just going to get rid of all that because we actually care about population health and ending diseases.

The problem is they're going to fight against that. And you know that. So it's a it's a broader, very complex battle. So this conversation is such a grim, totally grim thing.

So when we back up and think, okay, so there will be people who choose to engage in this and maybe they can have a ripple effect. There is a contagion with behaviors.

And so I guess my question would be, if we kind of go back to your expertize when you said exercise and the other things that you've seen actually can help people either prevent or even potentially reverse certain chronic diseases.

What would you like to highlight and can you give us some mechanisms of how those things work? Yeah, so I would say one of the big things we need to look out when we're talking about hypertension is vasculature remodeling.

So the way that blood vessels remodel themselves over time and in particular in the absence of the certain forces that are present in, for example, those hunter gatherer populations that I was speaking about earlier and the absence of those forces, the vasculature remodels, in a way where it becomes stiffer and more fibrotic.

So in particular, the the the sort of middle layer of the of the arterial vessels develops more what are called synthetic fibers instead of contractile fibers.

So it develops like more if you want to think about it, think about it as sort of stiff, stiff fibrotic tissue instead of muscle that can move. Okay. And the more that your vessels remodel themselves over time to have more of those synthetic fibers as opposed to the the contractile fibers, the stiffer those vessels get, and the more total peripheral resistance you get.

And this is a term that describes how much essentially how much resistance the heart has to push against when it contracts. So how much if if you have a physical pump, like when I was a kid, I did aquariums a lot.

So I was I was very into coral reef aquariums. I worked in a coral reef aquarium shop. I was very into marine biology. So I experimented a lot with plumbing.

So if you take a pump and you and you have to pump through a longer distance of tubes or the tubes are thinner or, you know, those kinds of things, it influences very heavily how effectively and how fast and how much water will be pumped through those tubes.

The same thing is true with the vast bulk of the vasculature and in our body and what we I think what most people don't realize is just how malleable that vasculature is.

So what I mean by that is we all have, let's say, in aorta. You know, there's you know, we have we all sort of have certain vessels. But there's there's a big difference between a high level athlete's vessels and a sedentary person's vessels.

One of the things that exercise does is it stimulates capillaries ation. So you get you actually build a whole bunch more capillaries in the different tissues of your body.

You also build the ability to to, to perfused those tissues more effectively to pump blood in those tissues. You also develop adaptive changes in the heart muscle itself to be able to pump blood more effectively and all the those vessels themselves and including the bigger vessels also have more of the contractile fibers instead of the synthetic fibers, so that they can expand and and contract more easily instead of being stiffer and kind of stuck in a more rigid position.

So all of those changes hugely influence essentially how easily the heart is pumping fluid through all of those vessels. And the the the stiffer that those vessels become, the more they lose their elasticity, the more peripheral resistance you get.

And the more and this is actually a hugely predictive factor of of generating hypertension, of of developing hypertension, I should say. So one of the big factors I would say one of the the biggest factors, risk factors for developing hypertension is is lack of physical activity.

And this is a major reason why hunter gatherer populations don't have this condition. They do lots of physical activity. There are many different studies, and you can measure this in a variety of different ways.

You can measure it like total amount of sedentary time during the day. And there are studies where they've shown 50 to 60% increases in and people who have more sedentary time versus less sedentary time versus during the day, 50 to 60% increases in the risk of developing hypertension.

You can also measured in terms of total physical activity per week and this differs depending on the country that you measure it.

Best Exercise Types for Blood Pressure and Longevity

You have like studies in the United States where it's 50 to 60%, 70% increased risk for developing hypertension if

you have lower levels of physical activity in other countries, like I found a broad review of studies from Ethiopia and in the population there, the difference between which is you would say more traditional living people, where I'm well, there's a probably a broad range of differences, but maybe less contribution from factors like a processed diet in a population like that.

And the studies there generally show somewhere between 250 to like 700% differences in the prevalence of hypertension among physically active versus physically inactive people.

So this is a huge, huge factor. It can also be measured as a function of VO2 max, which is your body's maximal oxygen utilization capacity, essentially a function of how fit you are.

It's like it's a reflection of what is your built capacity of combination of your muscles and your cardiovascular and respiratory system and your mitochondria to utilize oxygen.

And that shows about 90% increased risk. Or you could say 90% reduced risk over a period of five years in the people with high levels of VO2 max versus low levels of VO2 max.

So this is not you know, I'm not talking about 5%, 10% increased or decreased risk. We're talking about very, very huge numbers in terms of how much this one factor alone, physical activity, influence does our risk of developing high blood pressure.

And of course, there are lots of other factors like smoking and alcohol consumption and night shift work and stress and obviously a poor diet. And one of the other big factors is, is excess body fat itself.

So a huge proportion of the of the population in the U. S. is overweight or obese. I think last I checked, it was 70% is overweight or obese. And there is a there's a few different mechanisms at play as far as how excess body fat relates to this.

One is how it modulates the autonomic nervous system. You get increased sympathetic nervous system tone decreased parasympathetic tone. But there is another factor to play, which is the actual physical fat itself compresses the vasculature in many places, particularly the kidneys, for example, which is another way that increases this peripheral resistance, that increases the amount of force that's necessary to pump blood through through the arteries, through the vasculature. So I think, you know, when we look at things from the perspective that I like to look at things from, which is this evolutionary biology perspective, it becomes very obvious that, hey, if we just did two very simple things, if we weren't overweight, if we didn't have an epidemic of overweight and obesity, and if we were physically active, we would probably reduce the epidemic of high blood pressure by I mean, I don't know the exact figure, but I want to say maybe 80, 90%.

I mean, just those two things alone. So, you know, these are these are huge things. And I think the key message that that I would say to people is, is realize like get out of the mentality of, number one, thinking that there's a remedy for your condition, that that either it's a chemical drug that is going to solve that issue, which is an issue that is caused by lifestyle factors over many years or decades, or even a natural remedy.

You know, whether it's garlic extract or whatever or supplement, there are supplements that can help, you know, and it's not that I'm opposed to doing that.

It's that we need to think about root causes first and foremost. is there a particular type of exercise, a regimen that you like to encourage people to partake in, to really help in their overall health?

Yeah, great question. So I would say a few things on this. Number one, before we get into types of exercise or structuring a routine, one point that I would make is almost all types of exercise that have been tested have a beneficial effect on reducing blood pressure.

We can quantify the differences between different types of exercise and say, this one's better than that one. This question is also more complicated than just what type of exercise is most effective for reducing blood pressure.

Because we have to realize that blood pressure itself really isn't the end goal. Blood pressure is a marker that is a it's a physiological marker. We're measuring something that is predictive of other bad things happening to us, in particular heart attacks and strokes and things like that.

So we have to make sure that we're not so obsessed with the marker that, you know, sort of the famous the Chinese proverb is like, don't you know, don't focus on the finger pointing to the moon.

Focus on the moon. Right? So we have to remember what the actual end goal is. And we can talk about types of exercise that have a greater or lesser impact on on blood pressure, specifically.

But we need to think about the bigger picture context of also what is the the best type of exercise or best exercise regimen that is effective for actually reducing the thing we are trying to prevent when we're talking about blood pressure, like heart attacks and strokes, and that changes the discussion a bit and I'll tell you why in a minute.

And if we could further expand it out, which is what we really care about, is not dying from a specific disease, but dying at all, you know, from anything.

Right. And so that's even a bigger picture context. What are what's the most effective exercise regimen as far as reducing all cause mortality and improving the the reverse way of saying that is improving overall health of the most systems of our body most effectively.

Okay. Now, in terms of specifics, let me say, first of all, there's research showing that there's a transient effect from exercise and a longer term effect of exercise.

So one is a transient effect is you do a workout for the next 15 minutes or hour and for the next 24 hours after that, you will have a reduction in blood pressure, maybe five, ten millimeters, mercury.

So and that's a nice thing. And we should capitalize on that. And the way we capitalize on that is do exercise every day, some type of exercise, some significant thing beyond just walking.

Some like real exercise and walking doesn't really count. Walking's great. It's a great start, but we shouldn't count walking as exercise. We should think about exercise as something at a bit higher intensity than not.

But we should, number one, make sure we are doing some kind of moderate intensity or vigorous exercise daily that irrespective of what type of exercise it is now in terms of types of exercise.

Well, actually. So that's a transient effect. The longer term effect is that when we do exercise, we are actually creating a stress on the system and fortunately for us, we have this magical ability to sense these stress signals and adapt to them.

And we have the ability to adapt at many different levels in our system. We can sense when there is a need to have bigger, stronger muscles and we can do that.

We can sense when there's a need to grow faster or to develop more balance or stability. We can sense when there's a need to develop more mobility. We can sense when there's a need to do all kinds of things.

You can sense when there's a need to grow more mitochondria in our muscle cells. We can sense when there's a need for our heart to become stronger, for our vessels, to become more elastic, for our lungs to develop greater capacity.

We can make many different layers of adaptations and many different in many different systems of the body and those longer term adaptations particularly.

And when we're talking about hypertension, particularly at the level of the heart and the vasculature, have a big impact on baseline levels of of, of blood pressure beyond just the 24 hour period after you do a workout.

But we're talking about actually regulating your blood pressure at a lower level than you did before. So that's really what we're after. I think the transient effect of reducing it for 24 hours is kind of we should just look at that as like an added bonus.

Okay, you do some type of exercise every day to get that added bonus effect. But really what we're trying to do is change the physical structure of our systems, particularly the last history of our vasculature, so that we can regulate our blood pressure at a new lower baseline.

Now, how do we do that? There's different studies, and depending the studies have limitations, depending on how they look at it. There was an interesting study that got a lot of press that just came out a few months ago, I think in October 2023, that compared different types of exercise in terms of its effects on blood pressure, and they compared they compared high intensity interval training to aerobics endurance training to resistance training or weightlifting to combined resistance training with aerobic training versus isometric training.

And the big press, the big headlines from all of the study was that it turns out surprise, surprise, isometric training was actually the most effective.

So going back to what I was saying earlier about the importance of context, we might one might conclude from this study, okay. Well, I don't need to do all those other types of training.

I just need to focus on isometric training because that's the best one. It reduced blood pressure by, you know, eight or ten millimeters of mercury versus, you know, four or six from these other types of training.

So therefore, you know, that's the one I should focus on. However, when we expand our context to what I was describing earlier, how do we actually prevent heart attacks and strokes?

How do we prevent dementia and Alzheimer's? How do we prevent diabetes? How do we prevent cancer? How do we prevent dying from all causes? How do we have the most energy and vitality in terms of positive function, but not just this fixation on disease, combating disease or preventing disease.

But how do we actually have a higher performing and more energetic body and brain and reduce our risk of dying from any cause and living a longer time with a longer health span to not just lifespan.

When we expand to that context, which I think is really what we should be doing, we don't want to become fixated on one disease or one marker of disease.

Then we realize, Oh, well, resistance training actually induces many different adaptations that are unique to resistance training, that are beneficial.

For example, one of the leading the leading cause of early death in people over the age of 65 is sarcopenia. And frailty, loss of muscle mass and physical weakness.

Resistance training is uniquely good at that and also has a benefit combating hypertension and lots of other benefits and combating osteoporosis. Uniquely good at that aerobic exercise is uniquely good at inducing adaptations at the level of the heart and and the vasculature and inducing more capillary development and reducing peripheral resistance and inducing and reducing our risk of heart attacks and strokes and inducing beneficial changes at the level of mitochondria throughout our body, which improve our energy and our overall metabolic function and metabolic health, which translates into reduced risk of all kinds of other diseases, even psychiatric diseases, diabetes or all kinds of different things, and improves our overall function and energy levels.

So what I would say is when we expand to that bigger perspective, we want to have endurance training and we want to have resistance training and we probably want to have some high intensity anaerobic training like high intensity interval training or sprint training.

And if you want to add as a bonus some an exercise that has been found just shown recently to be uniquely

beneficial in reducing hypertension, add in some isometric training, which is really easy to do in the context of your weight training, resistance training workouts.

Add a few minutes of wall squats, which was in that study. The most effective exercise in terms of reducing hypertension. So you can, every time you work out in the gym, do a two minute wall squat, build on it, try to do 2 minutes and 10 seconds.

The next time you do it, 2 minutes and 20, build up to 5 minutes, build up to 8 minutes. And as you do that, you know, you can have that that effect. But again, it's in the context of an overall structured regimen that includes many of these different types of exercises that together create broad protection against a whole range of different diseases, while they are affecting hypertension and boosting positive function, boosting energy and performance.

At the same time. I think you've really painted a beautiful picture of get out and move in your body. Either you're describing endurance training, strength training and of course, flexibility, balance training, especially as we get older.

Yeah, the wall squats and there's a really cool study. I read it a while back that was like, remember those times when you're in the gym and you're a kid and they made you said, Well, but this is great.

Well, this doesn't encourage everyone to get out and move their bodies a little bit more than they did yesterday. I don't know what will, but thank you so much for your time today, Ari.

It was really, really interesting and we loved during our conversation. It was a pleasure. Thank you so much for having me.