# Cultivating Immune Resilience

## Guest: Dr. Joseph Mercola

**Alex Howard:** Welcome everyone, to this session where I am very happy to be talking with Dr. Joseph Mercola. I think this is going to be an important session because, obviously it's topically relevant to what's happening right now with Covid-19. But I think it's a much broader topic we're also coming into here around supporting your immunity and developing resilience. I'm sure the vast majority of people know who Dr. Mercola is, but just to give a short introduction.

Dr. Joseph Mercola is an osteopathic physician and board certified in family medicine. He served as the chairman of the Family Medicine Department at St. Alexia's Medical Center for five years and is trained in both traditional and natural medicine. In addition, Dr. Mercola was granted fellowship status by the American College of Nutrition in October 2012.

He's the author of three New York Times best sellers, *The Great Bird Flu Hoax, The No Grain Diets* and *Effortless Healing*, also the author of several books as well. He's also particularly well known for his leading website, mercola.com

So Dr. Mercola, thank you so much for joining me.

**Dr. Joseph Mercola:** Well, thank you for having me.

**Alex Howard:** So I think probably the place we should start. I think many people can have the perspective that viruses are something which attack people and how you respond to that is potluck. And the traditional germ theory perspective that many of us have been indoctrinated into. I certainly remember I had chronic fatigue as a teenager, I remember going to the doctor and being utterly horrified that there wasn't a pill that I could be given to miraculously fix what was happening.

Maybe just say a little bit about how immunity actually works in the system and the importance of the underlying health and resilience of one's body?

**Dr. Joseph Mercola** Well, viruses and bacteria and other pathogens are pervasive in our environment, they outnumber us significantly by many orders of magnitude. So because of that, we've adapted to that and we have an immune system to help us address that. And it divided into several forces, the adaptive immune system and the innate immune system. So when it works properly, it really helps us defend against disease. And the challenge with most people and experts and public health authorities view is that, this big bad virus is going to come and defeat us and we need to hide under our beds to make sure that we don't ever encounter it. Which is probably an unwise, counterproductive strategy, because ulti-

mately we want to be exposed to the virus and develop an immune response that was permanent, which is far better than the vaccine immune response, which is designed to failure.

We could talk about it now or about the failures of past immunization campaigns, especially when it relates to these viral types of illnesses. They had nothing but miserable failures in the past. And to think that they're going to come up with a vaccine to treat this in record time is beyond fantasy.

So the best strategy is to build a strong immune system, without any question. And we're recording this at the beginning of May so it might be two months before you actually hear this, some of the information may seem somewhat dated. But it appears to be decreasing, at least the United States and who knows, there may be another resurgence, there's no way to predict it, but it's seems unlikely. But whatever the case is, it clearly was different than the flu and it took a lot of people out. But if you look at the common denominators when people were impacted, they had impaired immune systems. And by that, I mean there were comorbidities for almost everyone who passed from this disease. And what comorbidities means is they had preexisting conditions that have a common denominator between all of them.

The conditions were things like hypertension, high blood pressure, or obesity or they were overweight or they were elderly. So the common thread of that, except for the age would be insulin resistance. And when you have insulin resistance, you have an impaired immune response. And how many people do you think in the United States and probably in the UK too, I don't know if this is an international audience or not. But certainly in both those countries, how many percent of the population do you think are insulin resistant?

**Alex Howard:** I'm guessing it's probably, I don't know 60, 70 percent. I imagine it's high.

**Dr. Joseph Mercola:** That's a pretty good educated guess. But actually it's closer to 90 percent, that data is actually a bit dated because it was compiled from the Nhanes Data from 2010-2016 where they looked at metabolic dysfunction consisting of high triglycerides, high blood pressure, taking medications for cholesterol or obesity. And that was 90 percent of the population, 90 ninety percent, 9 out of 10 people.

So, this illness that people were developing, Covid 19, there were certainly younger people who passed. But most of them, all of them had these risk factors that essentially consisted of insulin resistance.

So when you have insulin resistance, you do not have a resilient immune system. It is not functioning the way it was designed to, it's handicapped, it's like it's trying to fight these bugs with its hands tied behind its back and with it's legs tied too. I mean, it's just really hard to work and it's no surprise. This is exactly the type of response that you would predict when you have a pathogen coming into the community, when you have an impaired immune response, so this is predictable.

The sad reality is and I know there's a lot of controversy in this, but I think hopefully by the time this interview gets posted, it'll be pretty clear that this was not a zoonotic transmitted virus, this is a man made synthetic virus. So there's lots and lots of evidence with much research behind it to support that and it'll be pretty clear if it isn't already by the time it gets

posted. So that makes this threat a little bit different because normal viruses we've been exposed to so we have the mechanisms. When you put together things that have exponential hazards, it becomes more challenging to address, which is why some of these strategies that we can discuss, which can work in light of an optimized immune system.

**Alex Howard:** I think one of the things that many people are realizing is, it's somewhat of a call to action for people to take greater care of and greater responsibility for their health. It's a similar thing on a larger scale as well when you look at businesses that have been running close to the edge, and then suddenly they get an impact and they drown almost immediately, because they're not prepared. And there's something about the necessity of people, not just because of the crisis right now, but taking care and dealing with these underlying health issues.

**Dr. Joseph Mercola:** Absolutely, yeah. I think the key is resilience, it's a great word, because we want to engage in behaviors that build our resilience, unfortunately most of us aren't doing that. We can see by the facts, the facts don't lie, that 90 percent of us are not metabolically flexible, that we cannot seamlessly switch between using glucose and fat as a primary fuel. So I'll bet you'd like to know what the most powerful physical intervention you could use to make that transition. Would you be interested in that?

**Alex Howard:** I'd be curious. Yeah.

**Dr. Joseph Mercola:** Yeah. And I can tell you again, interestingly, it's the same percentage of the population that doesn't engage in this behavior, it's 90 percent. 90 percent of the people watching this are not doing this.What is that? That is they are eating more than 12 hours a day. They're eating, and many people, maybe even the majority, are eating more than 16 hours a day.

So in other words, they're eating as soon as they get up to the moment they're going to bed. And some people even get up in the middle of night and eat too. So that is a prescription for metabolic disaster almost universally guaranteed to cause insulin resistance.

So the simple solution, it doesn't cost anything, there's nothing to buy. In fact, you save money because you just don't necessarily reduce your calories. Although the benefits of implementing this type of program provide the same metabolic benefits have been studied so carefully in so many studies, that improve longevity, which is calorie restriction.

We're not suggesting that you need to reduce your calories in any way, shape or form. You just need to reduce the time that you eat those calories. So instead of eating in 12 or more hours, as 90 percent of the people do, you eat in about 8 hours or maybe even cut it down to 6. And that's not something you rush into and do right away.

If you're eating 16 hours a day, don't jump down to 8, you go down to 15, 14, 13, you do it gradually and give your body time to adjust to it. And by doing so, you're going to build up that resilience that when the next infection comes in, it doesn't have to be something terminal like Covid 19.

It could be the regular flu or a cold or you can just have an injury. I mean, that's part of the nature of being a human, is that you have accidents occur. And when you're metabolically flexible and you're not insulin resistant, you're going to heal from that, you're gonna be more resilient. You'll have the physiology to adapt and recover and repair.

**Alex Howard:** I think part of this is, is a shift in people's psychology and their attitude to their body. I think it's realizing that one's body is something that if one invests in and takes care of and is actively working to build resilience, then when the test comes, there is the capacity to meet that. I want to come in a little bit to some of the specific nutrients and interventions that people can look at doing. But before we do that, I want to take a moment to emphasize some of the basics and some of the fundamentals.

You just talked about the timing of food. Could you mention a little bit about things like sleep, exercise? I know there'll be people watching thinking, oh, I know all this stuff, this is basic. But often these are the fundamentals that people miss and don't realize the value and the importance of.

**Dr. Joseph Mercola** Well, first, let me just explain, for those who know me that I'm a rebel, I'm an iconoclast, and that I rebel against the conventional medical paradigm. I'm a trained physician, board certified. And I know, I've gone through the brainwashing in med school, essentially, which is pharmaceutically oriented and surgically oriented. And I tried that, and that model didn't work, it failed miserably for me and many other physicians who tried that. And that's why I embrace natural medicine, to use simple, natural, inexpensive, safe underlining and bolding the word safe, therapies that have been time honored, that have been used for historically and anciently.

It doesn't mean we have to abandon all these new interventions, but we use them wisely and carefully and only when needed. So the beauty of doing this is that it's less expensive and that's going to be a big issue because one of the consequences of this pandemic, this worldwide, is it essentially induced a global financial collapse. So a lot of people are going to be going through economic hard times and they're going to be looking for inexpensive solutions that don't cost an arm or leg, because they don't have the resources to even pay the rent or buy food.

So in some ways I'm grateful for this, the hardships that's coming, because it's going to force us to get back to basics. We're just not going to be able afford these expensive interventions. And they have cardiac bypasses that don't in any way, shape or form address coronary artery disease, really, which is fundamentally insulin resistance. So along those lines, that's why I think just addressing, because we don't have a lot of time, so I just want to focus on these. So restrict your eating, it is just so hard to emphasize in a short time how powerful an intervention that is. I've been studying natural medical approaches for over three decades and studying very carefully and teaching millions of people how to do these things. And I just don't know of a simpler, more effective solution that time restricted eating. So just put that in your books and focus on it, if you don't want to do it now, fine, just remember that it's going to be your biggest leverage you can possibly induce.
What's another one, that is not quite widely recognized and is one that I've actually popularized. I was the first medical journalist to start popularizing over two decades ago. Yes, 20 years ago I started popularizing before it was commonly known that vitamin D does a lot of

good things for your body. And that is not just to protect against osteoporosis and in fact, you need higher doses. I said of popularizing if a physician prescribed more than two thousand units of vitamin D, they would potentially have their license reprimanded or taken away, now routinely they're giving ten thousand.

So we know that it works, it's effective, but let me just share with you how effective it is. There was an interesting study that will be published by the time this podcast comes out, but essentially review 212 patients from Southeast Asia who had Covid-19. It was an epidemiological review, so it wasn't a prospective randomized controlled trial. But they found of these 212 patients, those that had mild disease, 94 percent. 94 percent had normal vitamin D levels defined by greater than 30 nanograms or more. And of those who had severe or critical disease, only 4 percent had normal levels. So this isn't a causal relationship, this is not a prospective trial, but association is not causation. But it's a pretty strong suggestion that vitamin D works, that's how powerful it is.

So if you didn't have insulin resistance and you had normal vitamin D levels, your likelihood of suffering serious challenges and complications from a Covid-19 or SARS Cove-2 infection is almost nonexistent. So that's just two things that you can do and there's a lot of things you can do if you had those things and you got an infection. Basically almost no one needed to die from this disease. If you understand normal physiology and simple natural interventions that address the fundamental underlying physiological defects that exist in this disease as a result of this infection.

So I don't know if we'll have time to go into that, but I can assure you, with the highest degree of confidence that virtually no one needed to die, no one. Now they have the infrastructure in place to do these interventions may have been a bit challenging, but it could have been done. And ventilators was not the answer, that's for sure, that was part of the problem, there was another better solution. But anyway, getting back to the basics is to build up your immune system.

So you've got time restricted eating, you've got vitamin D. What's the best way to take vitamin D? Not to swallow it. Again, simple solutions I don't want you to spend a penny on any supplements if you don't have to. So you just take off your shirt if you're a man and wear a sports bra if your woman and wear shorts, and walk outside at solar noon. Now, most of this is in daylight savings time, so that means solar noon is 1:00. So you walk out like 12:30 to 1:30 and you get the sun on your skin and you don't get burnt. So if you have a very fair complexion, it may only be 2, 3 or 4 minutes. But if you've got darker skin it could be an hour more and then you get your vitamin D levels. I have not swallowed vitamin D in over a decade and my vitamin D level is over 70. So you can do it without a penny.

So those are two powerful things and then exercise, simple walking, you don't have to go to the gym, but a gym could be really good. You're especially going to do resistance training because it does marvelous things for you and it will enhance and improve your immune response. And you can have the best diet in the world if you're not exercising is going to be really hard to live optimally.

If you're doing all these things together, you're going to sleep better. And there's a lot of reasons why you may not be sleeping better. And I'm sure a lot of your other guest speakers

are going to address them specifically, to addressing the stress and other interventions. But it's really important to optimize sleep, which becomes a challenge as you get older. So those are some of the highlights of the things that you can do.

**Alex Howard:** I think there are people that can sometimes be very caught in their life being in certain habits and routines and patterns. And often people can have stories like I work in an office, I can't get out and get vitamin D, or I don't have time to exercise. And in a sense there's this join up, let's say, between the powerlessness of I can't do these things, I haven't got time, with then the panic and the anxiety of this thing is coming out to get me. How do people square that?

**Dr. Joseph Mercola:** Excellent question and I think it's so apt, it's just everyone in life gets a choice. My understanding is that there are certain requirements we have just because we are human. Now, you may not find it convenient to take the time out to drink water or drink some type of fluid replacement and eat because you're just too damn busy.

But at the physiological consequence of ignoring to do that for a few months is going to kill you. Right? You just have to do it, that's the nature of being human. You just can't walk off a four story roof and expect to survive and do well, unless you're wearing a parachute or something.

So there's consequences of being human. One of the consequences is that we need food, we need healthy food, and we need to avoid toxic influences. We need to have regular exposure to sensible, sensible exposure to sunshine and we need to exercise. In fact, I was just reading a book this morning on exercise which quoted Thomas Jefferson who was one of the top presidents in the United States from my perspective. And he said, "you need two hours of hard work a day".

So just because you're human, you need that and most of us have desk jobs or office jobs or we're not getting the two hours. If you were a farmer, do you think I would be telling you to go out and exercise? Heck, no. That's the ideal, you've got physical labor in your job and you're doing it. Exercise is merely a contemporary replacement for the physical labor that almost everyone was required to do to put food on the table and to create a shelter to stay home at night for you and your family. But most of us don't need to do that physical labor, we've created environments where we're able to create capital and financial resources to provide those basics without getting the labor, without doing the physical labor.

So you have to understand that mentally we bypassed this only relatively recently, and that bypass creates a deficit that we can choose to ignore. And choosing to ignore and failing to implement that physiological reality into your life results and consequences. And everyone gets a choice, but you're going to have the consequences. And a lifelong choosing to avoid that will result in eventual insulin resistance and obesity and sarcopenia, a loss of muscle mass and frailty. Which to me is almost as bad as dementia, when you're losing your mind it's pretty bad. But it's not bad in some ways because you don't know you're losing your mind.

**Alex Howard:** It's worse for everyone around you.

**Dr. Joseph Mercola** When you're frail and that is your inevitable consequence if you choose to avoid physical movement and labor. You're going to get frail and both of my parents died from frailty and despite my incursion to do more physical exercise, they both died from it and it's a sad reality. It's an almost inevitable consequence, unless you're hyper diligent about it. And frailty it's just S.O.S. it sucks on steroids, you lose your movement, your ability to enjoy life, to engage in life, to experience it the way you did when you were young.

There is no reason that you can't live to 80, 90, 100 years old and be able to do the same darn things you did when you're 20 and 30. Maybe not the same level of intensity, but you should be able to have that range of motion and freedom of movement to be able to do almost everything the same. That's my view. You're never going to do that if you ignore your physical labor requirements.

**Alex Howard:** I want to backtrack something on the vitamin D that I realized that I was remiss to not ask you. What if you live somewhere that has less sunlight?

**Dr. Joseph Mercola:** I unfortunately neglected to mention that that was the optimum and I live in Florida, so it's relatively easy for me to do that year round. And I understand that even if you've lived in Florida, many people don't have the luxury of going outside at noon and doing that.

So if that's the case, then you can spend a little money and vitamin D happens to be one of the most inexpensive supplements on the planet, and you can swallow it. It's not as good as the vitamin D that you get from the sun because you get other benefits from getting solar radiation exposure, such as the UV-A, which stimulates nitric oxide production and also improves mitochondrial function. So you get that benefit too, which also helps protect against heart disease.

So ideally do that, but if you don't at least swallow it. And there's virtually no side effects if you take in reasonable things. Now, it's important to understand that the ideal range is somewhere between 60-80 nanograms for ML, and might be different units in the UK. I think it is, it might be nanomoles per liter, which in case you have to multiply that by 2.5. There's no way that you can know you can't feel your vitamin D level you have to have measured. So you have to go to a lab, you get it measured, there are finger sticks you can do through the mail and get it, but you've got to get a blood test to figure that out. And then just moderate your dose based on what your blood test is. If it's really low like under 20 then you might be looking at ten thousand units a day, if it's closer to 30 or 25 or 40, then you certainly can be lower.

**Alex Howard:** You mentioned briefly a little bit earlier about sleep and you recently shared some interesting research on your website about the impact of sleep on gut bacteria. And of course, that has a whole influence then in terms of immune function.

Can you just say that about that, because that's an interesting relationship?

**Dr. Joseph Mercola** Yeah, well, sleep has so many benefits, the repair, restorative function. Matthew Walker's done a lot of work on this and most of us, and I'm certainly guilty of this on steroids.

We think we're special that we can get by, because there's so many things to do, and I'm just so busy. So if I can just sleep 4 hours, I'll get so much more done in 5 hours, and think that we're special because we're healthy and we eat right and we're exercising.

But no, the human requirement for almost everyone is somewhere between 7 and 8 hours. And if you don't get that, you will most likely suffer. There are some, very few and I mean by few means less than one in ten thousand people and believe me, those are not good odds, so don't think you're one of those that can get by with less than do okay.
But most of us need that time. If you're not going to get that, you're gonna have a wide variety of dysfunction and one of them is a disruption to your microbiome. And your microbiome is really key for health, and your immune health is enormous interplay there. And if you get that wrong, it's going to have challenges for you, so clearly want to get sleep right.

It's also important for your brain health because many of these toxins get removed from your brain at night and if you're not allowing it that time to do it, they'll build up and accumulate. You'll accelerate your risk and radically increase it for Alzheimer's disease, which is not a pretty picture. But as I said, if your brain's not working well, then you may not know it and it may not bother you at all.

**Alex Howard:** One of the things that also strikes me is, and I think sleep is a really good example of this is that. Often people think because in the short time they're getting away with certain things, they're getting away without exercising, or they're getting by on 4 or 5 whatever 6 hours of sleep a night. They think because they feel okay and they've got used to it that they're okay. And often it takes a health crisis to wake people up to the fact that it's not okay. And I think sometimes it's really challenging for people that don't get the major wake up to realize the seriousness in time.

Because, of course, resilience is something that people build through habit and through practice. What helps people wake up, that's not a crisis, that gets people to take health more seriously?

**Dr. Joseph Mercola:** Well, it depends. That's an interesting question. But the younger you are, the more resilience you have and it's just the nature of the resilience capacity, adaptive capacity that you have.

A 20 year old, you've got to be real, I mean, it just really surprised and shocked me that so many people can abuse their bodies so badly and still do relatively well. You see this in the Covid-19 crisis, that's why mostly, there are some younger people dying, but they're not teenagers, they're certainly not children. And it's pretty rare to find a 20 year old passing away, there are 30 and 40 year olds for sure. But it's pretty uncommon for people under that and the 30, 40 year olds are the ones that have been metabolically compromised, that are abusing their body and have been abusing them for decades. So this is the consequence. But the question you have is, my response is that the younger you are, the harder it is to figure this out, because you have so much built in resilience. That's just the nature of being a human being, when resilience capacity dissipates with time.

So the younger you are, the more important it is to have a good attitude, to understand this at an early age. And if you don't, you're just going to have to suffer and there's no other way

around that. I mean, hopefully you're open to it and you're a lifelong student and on a journey to understand more about reality.

I mean, you can take it from a positive perspective, because it's not just about preventing things it's about improving health too. You can think better, you can feel better, you have more energy, your more resilience to all other diseases. A young person following these principles could probably avoid coughs, colds and flues for many decades. And that is very common, I can't tell you how many people tell me that once you're following this, and the younger you are, the more diseases you're gonna prevent. And interestingly, I wasn't following this when I was younger, my parents didn't understand this and I'm suffering the consequences now in my adult years. Because I had a lot of cavities when I was younger because I ate food, the standard American diet and my parents had no clue about this.

If you're eating the right foods and have the right health habits, there is almost no reason you're going to ever have a dental cavity. Who wants to spend time in a dental chair? Not only is it expensive, painful, but it takes time out of your life, and it actually takes time out of your life big time on both ends because it's going to make you live not as long. I mean, dental health is really important for overall health. A lot of people don't understand, a lot of physicians don't understand but it is crucial. So you just look in your mouth and if you're having cavities, that's a clue that you're not doing something right.

**Alex Howard:** I want to take a bit more of a step into some of the specifics here and some of the ways that one can support and boost immunity. You talked about vitamin D, another one that people would have heard quite a bit about possibly is zinc. Say a bit about how that can also help support people.

**Dr. Joseph Mercola:** Well, zinc is really important for the immune system, especially we're seeing a lot about that with the Covid-19 infection. There's a drug, a popular drug now, though I think there's far more effective strategies than using a drug. But one of the ones that are being promoted in the U.S. at least is a drug called Plaquenil or hydroxychloroquine. And the reason they're using that is it appears to be a drug that works to take the zinc molecule and actually put it inside the cell where it needs to be. Because if you have zinc circulating in your blood or in your plasma doesn't work that well. It has to be inside the cell where your immune cells can get to it and make use of it to stop these viruses from replicating.

So that's why drugs, like hydroxychloroquine, are being suggested. But there are other zinc ionophores, that's what the term is called, that are natural things like quercetin, which is a natural bioflavonoid, actually the most common bioflavonoid out there, or flavonoid.

So Zinc is a simple one that is safe and inexpensive and pretty readily available, maybe in the UK, I think the UK has different rules and regulations on supplements.

**Alex Howard:** Yeah zinc is easily available in the UK.

**Dr. Joseph Mercola:** Well, quercetin may not be, but that's good. So just zinc by itself isn't necessarily going to be useful, so that's good if you're eating zinc. You don't necessarily have

to take a supplement, I'm a big fan of eating a lot of high quality meats that aren't CAFO confined animal feeding operations, they're grown naturally in free range.

So meat has a large concentration density of zinc and probably more than enough that you need if you're having a significant portion of that in your diet. But if you aren't then zinc maybe something you want to consider.

**Alex Howard:** So where my mind goes now is, we talked quite a bit about supporting overall health and well-being and fundamentals around that. Some of the things that people can do to help support overall immunity and build up resilience.

Let's say that someone or someone's loved one is currently battling, be it Covid-19 or be it any other kind of viral load on their system. What are some of the things that people can do in that instance to help their body mount a response and help their body to fight the virus?

**Dr. Joseph Mercola:** Well, that's a great question. I actually did a video on this at my site, www.mercola.com and you can type in like nebulizer and hydrogen, hydrogen peroxide, actually. So that's a pretty novel component. I think I got, actually this is a UK doctor that was like you've got major press on this because they were criticizing me for suggesting this. But hydrogen peroxide, I go through a 20 minute presentation on this in the video I created and go into the details. But it's a topical disinfectant and can be used and put into a nebulizer, which converts it into these very small mist droplets that you inhale.

The virus tends to reside in your nasal mucosa cells and in the sinuses, in your upper airways, in your lungs. And when you breathe it in the peroxide can actually land and kill it. So if you take that early, it can be pretty effective at eliminating these types of viral upper respiratory infections. Covid or SARS Cove-2 being one of them, but flu viruses are simple, cold viruses being another. So the earlier the better the details are in my video, but essentially you don't want to use straight peroxide. Food grade would be better because it doesn't have stabilizers in it, you want to even delude it further maybe by 10 times. So you would put like 5 c.c.'s of this food grade 3 percent into 100 c.c.'s of normal saline and nebulizer that you just breathe it in. Maybe a few times a day and it shouldn't burn, it should be really easy to do.

It takes about 5, 10 minutes and it can be very, very effective. But that's a simple one. It's almost free, you just have to have it, if you have nebulizers free, essentially. But if you don't you have to get a nebulizer and nebulizers are under a 100 dollars. So that's a good tool and it could be used and it's very safe.

**Alex Howard:** And how about any things that one can use, that's acting locally in terms of the nasal pathways? Anything else that one can do in terms of supporting the overall system response?

**Dr. Joseph Mercola:** Well, you want to become metabolically flexible, it's going to be really key. One of the other things if you were sick, that would be an interesting one, especially if you're sick where you're having a significant oxidative stress. Because that's how the damage in this Covid-19 works is this virus initiates a cascade of reactions which ultimately results in increased oxidative stress, or reactive oxygen species and reactive nitrogen species.

So one of the ways to compensate for that would be to take a selective antioxidant called molecular hydrogen. Which is a gas, and can be created by taking a tablet that would dissolve into hydrogen gas, into water. You have to let it dissolve for about a minute and a half or so, then you swallow it. And this hydrogen gas is known to activate endogenous antioxidants in your body selectively. So it won't cause your body to make them unless you need it, which is really beneficial because you take high dose antioxidants which can be highly counterproductive. Because it will suppress all free radicals indiscriminately and many free radicals are beneficial things like nitric oxide that the body makes that we need in certain levels. And if we don't have it, we have suffered complications, typically cardiovascular complications.

So this molecular hydrogen activates a pathway called NRF-2, which activates these transcriptions of genes in the DNA that make endogenous antioxidants like glutathione, superoxide dismutase, catalase and about 400 other antioxidants. But only if you need them, which is really cool, so it's one of my favorite antioxidants.

Then exercises is another simple one and then one that's been shown to radically decrease or to improve overall mortality and decrease death rates, in Finland. It'll be very interesting to see what the statistics on Covid-19 are in Finland, because they, more than any country in the world, engage in this practice, which is sauna therapy. They do the traditional saunas, but by just engaging in this behavior which exposes your body to a heat stress improves resilience. It increases things called heat shocks proteins, which are very useful for helping your body remove misfolded proteins in your system, that clog up your system through a process similar to autophagy. So that is a very useful strategy not so much to treat the illness if you have it, but it's certainly a preventive strategy. I mean, it would be actually somewhat counterproductive. And one of the things you can do too, that I forget sometimes to mention and this is well known now or documented that. It's not so much what you do, it's more what you don't do.

So if you get a fever, the last thing you want to do is take an antipyretic like Tylenol or a paracetamol, I think they call it in the UK. Acetaminophen or ibuprofen or aspirin as these will lower the fever, lower the temperature, and your temperature is your body's response to fight this infection.

Your body's not stupid, it does it for a reason. And an increasing temperature is one of the ways your body defeats this thing and you can similarly provide a benefit by increasing it artificially with sauna. Although, as I said, if you're sick it may not be the wisest strategy to use a sauna, it's more of a preventive prophylactic approach.

So that's another really powerful one and I personally do sauna pretty much every day I'm home, which has been pretty much a lot.

**Alex Howard:** Like the rest of the world, it's most days. A big central theme I think through this interview and I want to highlight a bit more is the importance of trusting the body's own innate wisdom. That you're re-creating what the bodies have been used to doing for thousands of years, creating that and rusting the feedback loop that it's giving you.

**Dr. Joseph Mercola:** Honoring it, yes. Recognizing that that's what it requires. And I've been a physician for almost 4 decades, yeah, 4 decades and the more I study this, the more I real-

ize the simpler it is, it really is pretty basic. If you give your body what it needs and stay away from things that it doesn't like, your body is going to adaptively track a course towards health. It doesn't want to be sick and this is a direct counter to the pharmacological paradigm, which is that humans were created to have a doctor prescribe a drug for them.

When you go to med school, that's what it is, you learn this constellation of symptoms, which they label as a disease. And for every disease, you have to learn the strategy of what drug to use. That's what it is. They don't teach you these basics. I mean, they superficially go over it and maybe in physiology class, when you're a second year med student, but that's it. That's the last thing you ever hear about that therapeutically. But that's what it is, it's understanding what your body requires to build resilience and giving it to it.
And just continually refining it through your continuous journey of knowledge, of acquiring knowledge to learn it at a deeper level.

**Alex Howard:** What's the potential? So someone that's watching this and I think that the Covid, in a sense is probably being a wakeup call for a lot of people in a lot of ways.

**Dr. Joseph Mercola:** Yes, for all of us.

**Alex Howard:** There may well be people that are watching this, perhaps particularly because they've come through an interesting trauma or kind of mind body healing. That perhaps hasn't focused so much on the physical side of health, which are hopefully feeling inspired. And a lot of what you're saying is resonating and makes sense.

What is the potential for someone that perhaps has neglected their health for a number of years, but makes the decision to re-engage and reprioritize? What's the capacity for the body to respond to that?

**Dr. Joseph Mercola:** Excellent question. What I was going to say is that mental health and physical are intimately connected, they're entwined, you cannot separate them. So if you're physically not healthy, it's almost in my mind impossible to be optimally, mentally healthy, it's possible but very, very difficult.

So the potential capacity for your body to recover its full potential is variable. It really depends upon your current setting and your age. The older you get and the sicker you are, the more difficult it is to recover things. So the more resilience you have, the younger you are. There are so many studies that show really clearly, you can have 70, 80 year olds who are absolutely sarcopenic, have almost no muscle mass, can't even hardly raise their arm, let alone raise a weight. And you put them on and engage them in a regular exercise program, and they radically improve their strength and their health and decrease their frailty.

So you can have improvement at virtually any age. The extent and the relative level of improvement, a percent of improvement is going to depend upon where your starting point is and your age. So the younger you are, if you catch this thing in your 30s, 30s or 40s, if things start to drop at that point, certainly in your teens or 20s, you can almost recover everything back. But the older you get, the more difficult it is to regain your fullest potential.

**Alex Howard:** But it's possible to make significant progress.

**Dr. Joseph Mercola:** Oh, you'll definitely make progress, you just could have made more if you started earlier. That's it, just to give an example of strength.

If you wanted to be a bodybuilder or a strength trainer and you wanted to deadlift like 500 pounds and you started when you're 65 years old, I don't think it's going to happen. You know, you got to start when you're in your 20s or 30s, because it takes a lot of time to build that muscle mass up.

**Alex Howard:** And there are many, many people which if you've neglected your health for a long time and you start to prioritize it, it's amazing how much can change that has a meaningful impact on someone's quality of life, right?

**Dr. Joseph Mercola:** Absolutely. Yeah. You're going to enjoy life. Your ability to engage and meet your goals and fulfill your ambitions in life are going to be far greater. So you'll be happy, which is what we all want ultimately to be happy.

**Alex Howard:** And of course, what people are doing then is building up some of that resilience and that capacity. So when the next viral load or trigger or whatever comes around, they've got the capacity.

**Dr. Joseph Mercola** Or stress, stress in your life. One thing that's 100 percent guaranteed in life and that is change. No question about it, change is going to be coming and you can count on it.

So it's that adaptive capacity or responding to the change in a beneficial way will build your resilience, because change can be bad or change can be good. But a lot of it is your perspective, too. And that's been my approach for many, many years, is to have a perspective of that, when bad things happen to you, because they invariably will but they happen to all of us. Looking at this is an opportunity and just being very grateful to see how you're going to improve from this and what the good is going to do in your life.

**Alex Howard:** And also, one of the things that you said earlier about, it's not just pain that's a motivator, it's also the potential for one to optimize. And what was coming to my mind is, what's become a big buzz phrase over recent years of growth hacking.

That one of the pieces around that is also one listening to their own body, like running experiments. And I know that's something that you've spent many, many years doing.

**Dr. Joseph Mercola:** Decades.

**Alex Howard:** Of using your own body as effectively a sample group of one, of running experiments and testing hypotheses. That people are learning to listen to their bodies as their own laboratory of what's true for them and what works for them.

**Dr. Joseph Mercola:** It's a very effective strategy for sure.

**Alex Howard:** So for people that want to find out more, obviously they can go to your website, mercola.com.

What would be your recommendation for people, where to start if they're feeling inspired and motivated? I'm sure they are, through this interview. Where would you encourage them to start with your work?

**Dr. Joseph Mercola:** Well, the website's probably the best at mercola.com. I realized that you can't go to Google and look me up because I've been out of Google for almost a year now, more than a year. They removed me and hundreds of other good sites, too, not just me.

Because there is this agenda that really seeks to remove this knowledge and keep it secret or hidden, because ultimately they don't want competition. And Google's and most of these are companies in bed with these multinational corporations, specifically pharmaceutical companies, that offer very expensive solutions to their benefit and not to yours.

So it's been the paradigm for a long time. They're just seeking to hide the competition. So you won't find it on Google so you have to go to my website. And there's literally tens of thousands of pages, my sites have been up since before Google existed, since 1997. So I've been up there a long time, I've been one of the early adopters in this space and I'm actually quite surprised they didn't take us out of their search engine until last year.

I thought they would have done it in the early 2000s or 2010s, but they can't let this out there and help expose our work to many hundreds of millions of people. I mean, we were getting 35 million views a month for a while there.

So, but not now, some of which are out of the search engines. But that's fine, so it has to spread by word of mouth. So if you find this information interesting, go to our website, sign up for the newsletter, look up articles. We have a treasury of information, there's no charge for it and you can send the information to your friends and family.

**Alex Howard:** Fantastic. Dr. Mercola, thank you so much for your time today. I really appreciate it.

**Dr. Joseph Mercola** All right. Well, thanks for having me.