A Special Interview with Dr. James Oschman
By Dr. Mercola

DM: Dr. Joseph Mercola, DO
DO: Dr. James Oschman

DM: Welcome everyone. We’re just delighted today to have an expert in the energy medicine field, who has written a number of books and is widely recognized as an authority in this discipline. His name is Dr. James Oschman.

I am going to let him describe his professional training and his expertise that allows him to share with us some very important information about an exciting topic that I’m sure many of you have not heard about which is earthing or grounding.

Welcome, Dr. Oschman.

DO: Thank you. It’s nice to be with you. I really value and appreciate all the work you’ve done to educate people about various very important health matters. Thank you for that.

DM: It’s a great privilege to have the opportunity to do that and connect with people like yourself who have really committed so much time, effort, and energy in developing expertise that can have such profound implications. We’re going to get into your background but just let me give a brief -- well, why don’t we get into your background first then I’ll talk about my introduction and exposure to this then we’ll go into the details. Why don’t you tell us about your training and what you’re currently doing professionally.

DO: My background is that I have a Bachelor’s Degree in Biophysics and a PhD in Biology from the University of Pittsburgh. After my PhD, I traveled around the world and worked in various laboratories and met wonderful scientists and became more or less plugged in to conventional scientific processes.

I did a lot of research using the electron microscope looking at very small things. After a long period of success, I realized that I was ready to look at something else. That’s when I encountered alternative medicine. This was 25 years ago when scientists -- it just was not politically correct...

DM: Well, it still isn’t for most.

DO: I realized that if I looked at the science behind the various therapies, it would be useful, and that sooner or later it would pay off. It has paid off in that now I am connected with therapists of all kinds all over the world.

I have visited more than 20 countries and been in most cities in the U.S. talking about energy medicine, about alternative medicine, complimentary therapies, and learning a
lot from the therapists and putting the science together with the practice of every method from acupuncture to zero balancing -- A to Z and all the ones in between -- learning about these techniques. Each of these techniques teaches us a little bit of new information about the human body and how the human body works.

I brought my rigorous academic training into this rather amazing world that many people have been confused about and have been skeptical about. I just wanted to help people understand what's going on and learn. I ended up writing a series of articles for a new journal: The Journal of Bodywork and Movement Therapies. They wanted to know about energy.

Every school, every modern school of alternative medicine talks about energy and the editors of the journal wanted to know, what is this energy. They all say something different. Is there some science that can be used to demystify the word “energy”? The more I looked, the more I found very good science.

The articles that I wrote for the journal were a big hit. I validated a number of therapies that had never had any validation before. No one had ever said there is a science behind this work. The articles were a success and the journal was published by Churchill Livingstone. The publisher decided I should put all of that into a book.

The result was Energy Medicine: The Scientific Basis and the second book on Energy Medicine in Therapeutics and Human Performance.

How I got into earthing is an interesting story.

My local chiropractor in Dover, New Hampshire went to Boston for a meeting. Jeff Spencer who is a chiropractor who also works with elite athletes -- Jeff Spencer gave a talk in Boston. Part way through the talk he held up my book and said, “All of you need this book on energy medicine.”

My chiropractor went up to Jeff at the break and said, “You know that guy Oschman who wrote that book, he’s my patient.” Jeff said, “No. Get out of here.” One thing led to another and Kevin Reichlin, my chiropractor, invited Jeff to come to Dover to speak to the New Hampshire Cycle Club just so that we could meet.

Jeff gave a fascinating talk about his experience with the Tour de France, with Lance Armstrong and the other cyclists in the Tour de France. We had dinner. Jeff and I talked about exciting things that I know about from energy medicine. Jeff was all ears because he’s always working with the elite athletes, people at the cutting edge and he’s always interested in new techniques.

We were both very excited to know each other. And then what happened was we met Clint Ober who would develop the idea of grounding people -- we call it earthing now -- connecting the body to the Earth. Clint was trying to find somebody who might help do some research on the subject and one thing led to another. He ended up looking for an athletic person, an athletic trainer. He ended up going to Jeff Spencer.
One of the funny things that happened was Clint’s associate, Kaye, saw these yellow jerseys in frames on the wall. She said to Clint, “What is with this guy? He’s got these shirts with writing all over them hanging on the walls. This is very strange.” Those are yellow jerseys that Lance Armstrong wore as he rode into Paris at the end of the Tour de France, autographed by all of the team members saying, “Thank you, Jeff for all you did to see us through this most arduous event in the athletic world, the Tour de France.” They were very grateful. They all signed. He had these signed yellow jerseys.

When Clint described the earthing phenomenon to Jeff, Jeff immediately called me and had me fly out to California to meet Clint and talk about what kind of research could be done to find out what is going on. People have known for a long time that walking barefoot kind of feels good. There are places in the world like Germany and Austria and Switzerland where there are communities where there is a tradition of getting up in the morning and going barefoot.

DM: Before we go into that. I wanted to go into my experience with it too and then we’ll go into the definition of what this earthing is all about.

My introduction into this concept was also through a chiropractor who is actually responsible for caring for the dance troupe for Celine Dion in Las Vegas at the time. He introduced me to Jeff Spencer who as you mentioned, was really the chiropractor for Lance Armstrong’s team. And really, a major factor on why Lance was able to win seven Tour de France’s which is a record to this day.

It was very intriguing. It’s a simple concept. We’ll discuss it in a moment. My introduction occurred at least five years ago maybe even six or seven years ago. It’s been a long time. I had some skepticism a few years ago and some concerns that this whole concept could actually sort of self destruct and may actually be counterproductive. But those have been addressed because I actually had a chance to meet with Clint personally, not the on the phone, but personally earlier this year. I’m very excited about it and full speed ahead. I’m really very excited too for your work and really providing the scientific groundwork and basis and justification for understanding what occurs because ultimately, it’s a pretty simple concept. As you were just starting to explain, where people get some health benefits by going back to what we did -- what our ancestors did generations ago which was simply walking barefoot without shoes on the ground.

It doesn’t look like much is happening but in the physics and an electronic level, which you have specific training in, there is quite a magic that occurs. Largely because of the industrialization in wearing shoes and living in buildings now where we’re really isolated from that.

Why don’t you discuss this whole concept of earthing. What actually happens to an individual when they start walking barefoot on the ground?
**DO:** To find out, we had to bring the Earth inside of the laboratory. One of the very good methods is to have a person lie down in a room that is very quiet and peaceful and connect their body to the Earth. You can do a period where you measure all of the physiological processes.

**DM:** How do you do this connection? Do you just put a ground to their back or their feet or hands?

**DO:** It turns out the skin is a good conductor. In any place that you connect the Earth to the skin works. It turns out that if you check various places there is one place that is especially good for connecting the body to the Earth and that’s on the ball of the foot; a point known to acupuncturists as Kidney 1 (K1). A well known point that connects electrically -- conductively connects to all of the acupuncture meridians and essentially connects to every nook and cranny of the body.

So that point, Kidney 1 on the ball of the foot, is a good place to put a little patch. These are electrode patches like you would use for taking an EKG or measuring brainwaves or whatever, little conductive patches. So you put conductive patches on the balls of the feet and then you have a period where the person is not connected to the Earth and you measure every physiological parameter…

**DM:** Sorry for the interruption again. You mentioned the ball of the foot, this point K1, the acupuncture point. For those who aren’t familiar with acupuncture, where is it on the ball of the foot? Is it the middle tarsal? Is it towards that outside or the inside of the foot?

**DO:** Right in the middle of the ball of the foot. It’s actually a well known point in many therapies because a lot of therapists like massage therapists will put their thumbs on a person’s Kidney 1 and hold it for a minute or so at the end of a massage. It’s a very nice connection. Now, because of the work we’ve done, we understand why that’s so important and why that makes people feel good.

**DM:** Is there a benefit when you’re connecting them electrically to the grounding to have both feet or one foot or is one foot better than the other or it doesn’t really matter as long as one of the feet are connected at K1?

**DO:** As long as you connect one of the feet. We do both just to have a good connection. That’s the only thing that’s being done. Of course, these rooms are very quiet and nothing else is going on so it’s a controlled situation. We can see what the grounding or the earthing is doing and every major shifts.

The first thing is the skin resistance within a fraction of a second. That’s indicating an autonomic nervous system -- it’s indicting a relaxation going from sympathetic to parasympathetic state. It’s sort of described as stress draining out of the body. It’s very relaxing and then things begin to happen with the heart rhythm and the breath and so on.
We have now published probably a dozen papers. We have I think a dozen scientists working on the project. We’re finding out a lot about what happens when you connect the body to the Earth and what it’s really helping us with. That is tremendously exciting. Is that it’s helping us understand inflammation.

As you know, inflammation is one of the hottest areas in modern biomedicine. There are hundreds of thousands of papers correlating chronic inflammation with chronic diseases of all kinds. My curiosity is why? What is the connection? Why does inflammation, how does inflammation correlate with every disease -- Alzheimer’s, kidney disease, diabetes and so on and so on.

Virtually every chronic disease -- for example, cancer, there are over 30,000 scientific studies reporting a correlation between cancer and inflammation. Why is that? What’s going on? What’s going on is now understandable from the kinds of results we’re seeing from studying earthing.

So that’s a very exciting thing. For me, this is the most exciting. I’ve worked on a lot of projects. This is a project that can literally help the lives of millions of people around the world.

DM: I would have to disagree with you there. There are somewhere between six and seven billion now. I think it’s billions. I mean, there is virtually very few people that wouldn’t benefit from this. The only ones who wouldn’t are those who are actually being grounded everyday themselves because they live in Third World countries. But for those of us who live in industrialized societies, I think that it’s going to benefit virtually everyone.

My understanding of this process, this magic that occurs when you’re grounded whether it’s walking barefoot or being connected electrically on K1 or sleeping on grounding sheets, is that there is this transfer of free electrons from the Earth into your body. And these free electrons are probably the ultimate and most potent antioxidants known to man.

These antioxidants are responsible for the clinical observations that you’re noticing such as the change in the heart rate variability, the decrease in skin resistance, the decrease in inflammation and all the associated consequences.

I’m wondering if you can discuss the science because I couldn’t agree with you more. I think that the potential implications for this innovation -- it literally is Nobel Prize winning but it is just beyond phenomenal. It’s such a simple basic concept.

Really part of my reluctance to sharing this initially was it is so simple and there is a lot of skepticism on this. But many years have passed. You’ve done a lot of science. There is a lot of research and studies that have been done.
If you could expand on this concept of the free electron transfer and how that impacts the body, it would be great.

**DO:** I have to say that I’m very proud of you for doing this because you provide antioxidants. I take some of your products everyday. You have a deep understanding of the importance of antioxidants. It’s very special to me that you have seen what earthing can do and that you appreciate it. I’m appreciating your appreciation for this phenomenon.

What is going on? The first discovery was that people sleep better if they’re grounded. This was done by bringing the ground into the laboratory or into people’s homes and just checking to see how well they could sleep when they’re sleeping on a sheet that is connected to the Earth. Why do they sleep better? It turns out they sleep better because their day-night cortisol rhythm evens out. You can’t sleep well at night if your cortisol is elevated. It’s the stress hormone.

That was the first thing that we found out that stress is reduced and people reported feeling better, sleeping better. It turns out that when you sleep better, everything in your physiology works better. There is thousands of studies of the correlation between sleep and health. So that was the first thing.

And then we realized that people were sleeping better also because they had less pain. It’s hard to sleep when you’re in pain. So we did some thermography studies. With thermography you can see where inflammation is in the body. It’s a very sensitive method that picks up the heat associated with inflammation.

You could literally see the inflammation go away as the heat went away. Joints that were inflamed and were painful stopped being painful and stopped being inflamed sometimes in 20 minutes.

There were people who haven’t been able to walk without a cane for years just as one example, after 20 minutes, they said, nothing happened and then they stood up and they said, “Oh my goodness. My knee doesn’t hurt anymore.”

**DM:** I’ve got a point of clarification for you. This improvement that you’re describing occurred when they were connected to K1. Is that correct?

**DO:** Sometimes it’s good to just put the patch right on the place that hurts.

**DM:** That’s what I was asking. Does it make a difference whether you’re in K1 or on the point that is causing the health challenge or pain?

**DO:** If you really want to be sure, you put it on K1 and on the joint that’s painful. In the Tour de France when a cyclist was injured, Jeff would put patches all around the site of injury. They have lots of patches on.
**DM:** Do you think there is a significant additional benefit from the patches versus just sleeping on the grounding sheets?

**DO:** The patches are very useful in a clinical situation where you have a person with a particular -- for example, if you had surgery, it would be good to have the patches post surgical around the site of the incision to speed the healing process. The healing process is definitely speeded up.

So the patches are useful in the clinical situation. But for day to day life, the simplest thing you can do is put the sheet on your bed and forget it. You don't have to do anything else. No refills, you just have the sheet. You don't have to change your lifestyle in any way at all. It benefits your physiology by every measure that we've been able to make.

**DM:** Now that we’ve created some confusion talking about the mechanical logistics of how this works -- let me just clear that up and then we'll talk about the science again -- the sheets are essentially bed sheets that have silver threads in them and they’re connected to -- these threads are obviously electrical conductors and they're connected to a grounding device.

Initially, that grounding device was a pole that stuck in the Earth and led by a wire up into the bedroom. But now you've got an easier, less complex process where you just plug it into the grounding outlet so that you create a grounding circuit and essentially achieve the same process.

**DO:** Right but you have to be sure that the outlet in your home or your apartment is a good ground. We have a little tester that you can use.

**DM:** So you just confirm that. Most of the times, they are but if they’re not of course it’s not going to work.

Ultimately, any of these systems are designed to transfer these free electrons. Why don’t you pick it up there and kind of help us understand how this process works because that’s really the key, the foundation. Actually, it’s just such a profoundly beneficial concept that I really want to make sure that we’re clear about the science.

**DO:** This is so interesting. It has to do with what happens when you have an injury. Even the slightest bump, if you bump the door, the immune system immediately responds and sends white blood cells to the place that’s injured. Bigger injuries more white cells. The body knows the size of the injury and how many cells to send to the site of injury. The white cells, they’re called neutrophils. That’s one type. There are a variety of white blood cells.
The neutrophils secrete -- it’s called the oxidative burst. It’s basically a reactive oxygen species or reactive nitrogen species sometimes called free radicals. These are like Pac-Man. They are very important molecules that tear things apart.

If bacteria have gotten across your skin, these free radicals will destroy the bacteria very quickly. If you have damaged cells, the free radicals will break apart the damaged cells so that there is a space for healthy cells to move in and repair the tissues.

That’s known as the inflammatory response, very widely studied.

What he have discovered that is truly profound is we understand now why you get the inflammatory response which has five characteristics: Pain, redness, heat, loss of range of motion, and swelling.

All of those are the five hallmarks of inflammation and it turns out that that doesn’t have to happen.

Inflammation in medicine is considered an important part of the healing process. Inflammation is really an artifact caused by lack of electrons in the tissues. What happens is, the neutrophils deliver the Reactive Oxygen Species (ROS) to the site of injury. Some of those free radicals can leak into the surrounding tissue and damage healthy tissue. That’s what gives the inflammatory response.

If you have your feet on the ground after an injury; If you fall down and hurt yourself, if you can put the injured area or put your feet on the ground, electrons will come in to your body and spread through your tissues. Any free radicals that leak into the healthy tissue will immediately be neutralized electrically. The electrons are negative, the free radicals are positive, they neutralize each other.

So really what is happening with grounding or earthing is you’re protecting your body from -- I call it, collateral damage. Damage that was not intended to take place but does take place because we have disconnected ourselves from the Earth by putting rubber and plastic on the bottoms of our shoes.

DM: Let me interject something here too just for clarification. In that the way the traditional antioxidants work such vitamin C, vitamin E, astaxanthin, lutein, all of these powerful biochemicals that many of us take as supplements, the way they work and the only way they work -- coenzyme Q10 is another one -- is that they transfer free electrons. Because once they are oxidized -- they only work in the reduced form.

For those who haven’t taken chemistry, that means they have an electron to donate. If they are oxidized, an electron is gone, they don’t work.
Perhaps maybe you can help us understand the differences between these traditional antioxidants that most of the people listening to this call or watching it, are taking themselves and this transfer that one gets through grounding or earthing.

**DO:** The difference is that when you take an antioxidant in your diet -- I take Mercola antioxidants everyday and turmeric and other materials that are known to have antioxidant properties -- they of course are digested and they have to cross the digestive tract into the blood stream and they have to make their way to any place where they’re needed.

The grounding is a completely different pathway. It’s up through the feet, through the tissues of the body that are able to conduct electrons.

One of the problems with the inflammatory response is that it’s well known that when you have inflammation, there is a barricade that forms around the site of inflammation. It’s made from injured cells. It actually is a barrier to the antioxidants that can get in to your system. It’s difficult for them to get across that barricade.

It turns out the barricade is conductive to electrons. It’s actually made of collagen which is a semi-conductor. There are semi-conducting molecules all through the body so the dietary antioxidants are very important. I take them everyday. This other method is also very important to deliver antioxidant electrons to any place where there might be free radicals. One of the places that is very important has to do with aging. We could talk about aging if that is a subject…

**DM:** Sure we can go right into that but before we do, I just want to clear up some of the distinctions. Do you believe that there is a synergy -- obviously, you do since you do both, you do the grounding and you take antioxidants. I guess, could one just do grounding or earthing and achieve most of the benefits or is there a synergistic benefit from taking the oral antioxidants or the dietary ones?

**DO:** I think that’s a great question for research. I don’t have an answer.

**DM:** Alright, we don’t know. That’s interesting. It seems to me we need both. Many of these approaches are just based on observation of what our ancestors did. Our ancestors ate healthy raw foods that typically were loaded with these antioxidants and they also walked barefoot on the Earth. It does seem to make sense that we should be doing both, not just one or the other.

**DO:** It makes sense.

**DM:** And then we’ll let the science prove it later. Why don’t you talk about the implications of this transfer of free electrons on our aging process because unless
you're going to die prematurely of an accident, that's something that all of us are challenged with. We like to retain as much of our function as possible.

I think ultimately, we are getting close to the technology where we actually develop the ability to lengthen our telomeres which, I'm sure you're familiar with it, believed to be one of the primary causes of aging. But until we're at that level, we need to keep ourselves and our tissues healthy and this transfer of free electrons is one way to do it.

Why don’t you help us understand some of the implications on this technology it has for us.

**DO:** The dominant theory of aging is the free radical theory which is that aging occurs because of accumulative damage to the body caused by free radicals. You get free radicals when you have an injury from breathing toxic materials, from breathing, from eating food.

If you don’t want any free radicals in your body, you can stop eating and stop breathing but that doesn’t work very well. The reason being that oxygen is very active, very reactive and oxygen is all through the body and can be damaging to the tissue. So there needs to be a balance.

That’s probably the answer to your previous question maintaining the appropriate balance of antioxidant molecules and antioxidant electrons in your body. Having everything balanced, we know, is the secret of life.

One of the things that happens is we know that dietary restriction -- animals live longer, if they eat less. That’s another practice that I carry out very much. I like to eat and a lot of people do. The reason is there are three kinds of sub-models of the aging process caused by free radicals.

One is the mutation idea that free radicals damage DNA. DNA can repair itself to some extent but if you keep damaging it, eventually you can get a mutation which can lead to problems like cancer. The mutation model is one free radical model of aging.

Another one is the mitochondrial theory. Mitochondria in every cell in your body are very busy carrying out oxidative metabolism and a byproduct is free radicals. So the mitochondrial theory of aging is that eventually the mitochondria wear out or they just self destruct because of these free radicals.

Another theory is the protein cross linking theory which is why you get wrinkles in your skin. The proteins stick to each other, and enzymes don't work as well.

Those are the theories of aging. It looks to me from my study of biophysics and cell biology -- it looks to me like the body is designed with its fabric, its semi-conductive fabric it goes everywhere in the body including inside of every cell. I refer to this system
as the living matrix. Those electrons that enter the bottom of your foot can move anywhere in the body.

That matrix is poised so that any place where a free radical forms there will be electrons nearby that can neutralize that free radical and prevent any of those processes, mitochondrial damage, cross linking of proteins and mutation, genetic damage. So the whole fabric is basically an antioxidant defense system that is in every part of our body. We have this material called ground substance which is part of the connective tissue. It also goes everywhere in the body. It’s a gel material and it stores electrons.

So that if you go barefoot, you will take in electrons and your body will store them and they will be at any point where you might have an injury or any point where a free radical might form nearby will be ground substance that can deliver electrons to prevent collateral damage in case of injury or the other kinds of damage that I just mentioned.

**DM:** I kind of like to view those theories of aging that you mentioned as really more of an accelerated aging because there is this basal rate of aging that even if you're doing everything perfectly, you’re going to age. That’s believed to be related to telomere shortening.

**DO:** Exactly.

**DM:** I don’t know that optimizing free electron flow would optimize telomere shortening but it would certainly -- that would be the goal to get just to the base and have everything ideal.

I really do believe very strongly that within the next decade or two, we’ll have some clinically proven approaches to actually increase the length of our telomeres which is essentially the same as reversing aging. You will grow younger if your telomere is lengthened. At least that’s what it shows in the test tube. The evidence seems pretty compelling which is pretty shocking if you think about it.

But in the meantime, we’re not there yet so we need to implement these things. That’s why I think grounding has such profound potential to extending our lifespan to the point we’ll be able to apply these as yet to be discovered technologies.

**DO:** It’s great that you’re on top of all of these. A lot of information comes to you everyday. You process it and pass it on to everyone.

**DM:** I like to share it with people because my passion is health. Not only to stay healthy personally but to teach people how to do that and in the process, uncover a lot of the fraud and deception and the brainwashing that’s occurring because of essentially corruption in the multinational corporate interest who are really deceiving people for their own financial gain which is really sad but nevertheless the reality that we have to deal with.
I’m thankful that the internet allows us this platform to help educate people and to share the truth and to give us the opportunity to discuss these new technologies with people like you who are really advancing the science in this really important area. It’s just massively important.

Last week, I had a chance to interview another exciting scientist who I believe is one of the top experts in the world on structured water, Dr. Gerald Pollack out of the University of Washington. He’s a professor of Biology there.

The reason I mentioned him is that it occurred to me during our discussion that one of the benefits of grounding maybe that it actually structures the water in your body. I certainly didn’t know it before that a quantity of molecules, 99.9% of the molecules in our body, is water. It’s actually the structuring of the water that has this profound amazing benefit. When you actually expose regular water to a negative electrode, it will start to structure. That’s his concept.

He put a positive electrode and then it will start to destructure. Of course, when we ground that’s exactly what we’re getting. We’re getting this negative, this transfer of free electrons into our body.

I’m wondering if you have been exposed to that concept or if you have any familiarity about grounding as it relates to structuring the water in the matrix in our body.

**DO:** That’s very interesting that you say that. I have not looked into that. I know Pollack’s work. I know of the importance of water. There are people who think there is water system in the body and it is a conductor of protons actually, so we have electrons and protons. There is a relationship between the movement of electrons through the fabric of the body and the structure of the water related to that fabric.

I’m getting around to the answer to your question is yes, there is a relationship between free electrons moving in the system and water. It turns out, hydration is extremely important as you know.

One of the discoveries made actually in Woods Hole -- when I was working there at the lab across the hall where Albert Szent-Gyorgyi was working on the electronic properties of tissues -- they discovered that if you change the moisture content of tissue by a small amount, there is an enormous increase in conductivity, of semi conduction. So the water shell around the proteins is highly structured and very important to the conduction of energy through the system. Hydration is vital.

**DM:** Is it just simply making sure you’re drinking enough water, high quality water? Is that correct?

**DO:** Right.
DM: It’s so easy to get dehydrated. The mistake that most of our culture makes is assuming that tap liquid, as Daniel Vitalis likes to refer to, what flows out of most people’s home faucets is actually suitable for drinking. It really isn’t because it’s loaded with so many toxins like chlorine, disinfection byproducts, fluoride, arsenic, drugs that have been consumed in the community. We really need high quality water to achieve this ideally that’s free from the toxins.

DO: One of the things is that a lot of people are dehydrated. Most of the people you see walking around are dehydrated and they are electron deficient. I refer to them as being electron deficient. Their immune system is not ready for an injury.

People for example, a lot of people get headaches and they take an aspirin and drink a glass of water. The headache goes away and they give the credit to the aspirin. It’s actually the glass of water that makes their headache go away. So the aspirin bottle should say on the side, in case of a headache, drink a glass of water.

DM: It’s certainly a simple…of clean water as you mentioned but that certainly is simple enough and one of the best approaches that most of us don’t do. Actually, sort of taking that a step further, the best water you can get would be highly structured water and the best structuring you can do is to squeeze fresh from organic vegetables and having that green juice. Not so much the fruits but the green vegetables. That will do an enormous benefit for body hydration and something I recommend that people do on a regular basis. It’s a very powerful habit to get into.

DO: These are wonderful natural things that can -- natural medicine is on the upswing for sure.

DM: As it needs to be. Our current system isn’t working. We’re spending literally well over 2 trillion dollars and it’s vastly on its way to approaching 3 trillion especially with the new healthcare plan passed and really not getting much benefit. Our system is such that we’re really ranked not very high in a world perspective of the quality of care that’s being rendered in this country. We got to make some changes if we’re going to see some improvement.

DO: We have the most expensive healthcare system in the world but it is not the best. It’s far down on the list in terms of the quality of healthcare. It’s a tragedy. I’m really hopeful that things will swing around pretty quickly.

DM: I think things have to get worse before they get better and then people realize that the current system is not working and they’re going to be seeking alternatives. We’ll be there with the simple ones that people can do with strategies like this that are so powerful.

I mean, it’s just basically simple things, you exercise, stay away from grains and sugar, you make sure your vitamin D is optimized and ground yourself. I mean, that is so basic.
These things will clearly address the majority of illnesses and probably get up to 70, 80 maybe 90 percent of the challenges that people suffer with.

Of course you’re there is going to be room for fine tuning in professional health coaches to help figure out the subtleties of why that isn’t working but that’s a basic strategy that everyone needs to implement.

**DO:** One of the important discoveries, the most recent discovery is that grounding thins the blood, makes it less viscous. This is a profound discovery. Cardiovascular disease is the number one killer in the world. It turns out that every aspect of cardiovascular disease has been correlated with elevated blood viscosity.

**DM:** What’s the best measurement of that problem, the blood viscosity? Is there a simple tool that people can use or it has to be done in a laboratory?

**DO:** I’m sure you know Dr. Sinatra.

**DM:** Yes.

**DO:** He has been coaching us in how to do the measurements and the method of choice is called zeta potential. Measure the actual potential on the red blood cells by seeing how fast they migrate in an electrical field. It turns out that when you ground to the earth, very soon, your zeta potential goes up which means the red blood cells have more charge on their surface and they force each other apart. The blood gets thinner and flows easier. Blood pressure drops.

All aspects so far with just our experience with patients with different kinds of cardiovascular problems, all aspects of cardiovascular -- all of the issues are mitigated by grounding. High blood pressure is caused in part because the blood is too thick. The heart has to pump harder.

**DM:** The obvious implication for those who may not fully appreciate that is -- well, these red blood cells are kind of like magnets so they're repelling each other and as a result, they're not able to stick together and form a clot. These clots don't have to be very big to form like a pulmonary embolus which would kill you instantly.

But in my mind the more dangerous ones are the really small ones that tend to clog up the arteries in your brain and you get these multi-infarct dementias where you start losing your brain tissue because it’s clotted. If you got this high zeta potential which grounding can facilitate then you’re really radically decreasing not only the heart disease but the brain disease.

That is an absolutely frightening epidemic that’s coming up to have one in three Americans losing their brain from Alzheimer’s in the next few decades is not a pretty picture. So we need these basic strategies to help us. To me that’s even more exciting are the neurological implications of this improvement on the blood thinning.
DO: Exactly. We’re talking about cardiovascular disease, stroke, all of the inflammatory neurological issues that people can have that can be very disruptive and very painful.

DM: That’s exciting. Dr. Sinatra has done a lot of this research too.

An interesting component is that when I first was exposed to this as I mentioned earlier, a lot of this research wasn’t done. We didn’t even know about the zeta potential and the decrease in the blood viscosity at that time and since it’s been learned, that that is the case. I mean, this is new great science.

One of the other interesting areas that I was very excited to learn about and actually have started to do it myself now is to ground when you are exercising. Previously, it was really obvious to me that we should be taking antioxidants during exercise because it increases free radicals and it’s probably a good idea. But it would seem the best way to do this is to be grounded when you’re exercising. Ideally the simplest way is just to run barefoot.

I’m not a particular fan of long distance running but you could do sprinting and stuff but if you’re doing it while you’re connected to the earth, there is no problem. There are other systems that you can do that while you’re exercising in a gym or something. I’m wondering if you can comment on the benefit or the recommendation of grounding while you’re exercising.

DO: Actually, we did a study and this was done at the University of Oregon using a method called delayed onset muscular soreness. It’s the only way that we can in the laboratory cause inflammation to human beings legally. What happens is with delayed onset muscular soreness is that you over exert. You lift something that is too heavy and you do it too many times and then you stop doing that and the next day, your muscles hurt and they are inflamed.

DM: Which many of us view as actually a good thing. We like to push to the point where we have a little pain the next day that we know we’re really worked out.

DO: Exactly. This is a way of doing that in a controlled manner and seeing if you can speed up the recovery, speeds up resolving the pain. Grounding, earthing seems to be the best method that’s ever been found for speeding the recovery from delayed onset muscular soreness in a controlled study. This proves the pain reduction aspect of grounding.

DM: Let me try to understand a little better. So are you suggesting that by grounding during the exercise you actually were able to prevent the delay of the onset of muscle soreness or actually just increase the recovery from it?

DO: You speed the recovery. What you’re recovering from is inflammation. Dr. Brown who did these studies measured the changes in the blood in all of the various cells of
the immune system and you could follow the changes in the immune system. There was definitely less inflammation as shown by changes in blood profiles and in recorded pain that resulted from the excessive exercise.

**DM:** So it seems like that really should be a new almost universal recommendation when you’re exercising especially when you’re pushing it and you’re creating all these free radicals or also doing strength training exercises is to really make sure that you’re grounded. And sleep grounded because it’s going to continue the healing process and decreasing inflammation and improve the recovery rate.

**DO:** I gave a workshop in London, a two-day workshop, and I talked about grounding the first day and the second day, when I got there to the class, one of the students was all excited. He said, “You know, I’ve been doing this exercise where I go up on the balls of my feet. For 20 minutes, I just lift my heels off the ground…”

**DM:** Calf raises.

**DO:** Yeah. “I forgot this is a chi-gong exercise.” He said, “I forgot that the chi-gong teacher told me to do this barefoot on the earth. So I’ve been doing it for 20 years in my living room. This morning, I went out and I did it in the garden in my bare feet. It made all the difference in the world. It was fantastic.” Yoga should be done grounded. Exercise grounded, fantastic idea.

**DM:** Especially if you do many of things like tai chi or chi-gong. Ideally you would do it outside.

Let me just expand on that too and maybe you can help us understand the differences but this grounding can occur when you’re connected to the earth. So that will interestingly also occur when you’re on concrete because concrete I believe has water going through it so that allows electrons to pass through.

But materials like asphalt or any wood or any typical insulators, plastic; certainly, that will not allow it. But being in the water at the beach or on the sand that will also work. Maybe you just expand a little bit on that so people can understand how they can get grounded outside and how they might not get grounded.

**DO:** The best thing you can do is go to the beach and put your bare feet into the sea water. It’s fantastic. Sea water is a great conductor. That’s probably the best grounding you can get at the beach. That’s part of the reason people like to go to the beach and run along the beach. The wet sand in their bare feet, it’s so good for them. Concrete is a good conductor if it hasn’t been sealed. If it’s been painted it probably is not a good conductor.

**DM:** Interestingly, I live in Chicago and then as we have this interview it’s 4 degrees outside. So I escape to -- previously in Maui or South Florida this year but it’s all in the beach. Can you help us understand the differences between actually being in the ocean
and getting grounded that way versus being just on the grass or walking on ground. Is it just a matter of the quantity of the electron flow?

**DO:** I think so because the sea water is a very good conductor. So when you put your feet in the seawater, your feet are just surrounded with this great conductor. The electrons from the Earth travel better through seawater probably than through the Earth’s crust. Although the Earth’s crust is a good conductor of electrons, seawater is the best.

We have seawater inside of us in our circulatory system. So that’s a very good connection. Asphalt is not a good way to get grounded and as you said, wood isn’t. Moist grass is fantastic -- when the dew is still on the grass. In Europe, there are places where people go for two hours. There is a custom of walking first thing in the morning, two hours walking through the grass in your bare feet. They’re very healthy people.

**DM:** So the converse of that is if you’re in more arid or dessert-like environments where the grass or the shrubbery is really parched and there is not a lot of water in the top soil that’s not going to be as good a conductor. Would that be true?

**DO:** Probably not as good but there is still some connection.

**DM:** There was a book published earlier this year which I believe is called Earthing. Really a phenomenal summary of what we’re discussing. One of the interesting concepts in that book which I wasn’t aware of prior to reading it was that and I like you to review is that the further you go away from the surface of the Earth the larger the differential is in the volts. I don’t really quite fully understand it.

I mean, even just standing from the ground to the top of your head either five or six feet there is over 100 volts difference and if you go to 10 or 20 or 100 feet, where you go on a high-rise building, it becomes enormous because it’s a difference.

Can you help explain that and expand on the concept which I’m a bit confused on but I thought it was a really very crucial point to consider and one that I wasn’t aware of before reading the book.

**DO:** There is a huge difference between standing outside in your bare feet and standing outside in shoes. Basically the Earth’s surface is electrically charged and can push electrons up in your body. So the top of your head to the earth, there is a potential as you described, you don’t feel it particularly. It doesn’t cause any -- even though it can be a couple of hundred volts -- it doesn’t cause any particular current to flow. It would give you a shock.

What happens is when the weather changes the potential can go up enormously. It can go from a hundred volts per meter to 10,000 volts per meter. That’s pre lightning. We’re talking about the potential that gives rise, that causes lightning to come to the earth. That voltage is well known and well understood.
Trees, it sort of creates an umbrella effect that protects you from electromagnetic fields actually. We talked about the umbrella effect in the book.

**DM:** How does this potential get there? Is it an artifact of just a separation from the Earth, the further you go, the bigger the difference is and as a result of that difference, there has to be an electrical potential?

**DO:** It’s the potential between the surface of the earth and the ionosphere hundreds of miles up which is very electrically active, very much charged by the solar wind, the charged particles that come from the sun. Those charged particles eventually reach the Earth by lightning and electrify the entire surface of the Earth so that anywhere you touch the Earth, there are electrons. They come originally from the sun, to the ionosphere to the earth.

There is no lightning happening right here right now but somewhere there is lightning, a constant current flow from the ionosphere to the earth. Those are the electrons that our body needs to have the immune system function properly.

**DM:** So the higher up you are separated from the surface of the Earth, the higher this difference would be and the worse the implications for your health if you’re not grounded, is that correct? So that if you live in a high rise building and you’re not grounded and you’re on the 20th floor or the 50th floor, that’s going to be a potentially more significant health consequence to you than just living on the first floor or even the second floor. Can you go into that?

**DO:** I think you’re right about that. I think eventually, we will have our buildings redesigned, our living spaces, our working spaces redesigned in a way that keeps us in contact with the Earth as much as possible. The key thing is not the voltage. The key thing is having those electrons enter your body so that they are available for your immune system to function properly.

**DM:** Because modifying your living space to have this free electron availability to you is relatively easy to do if you design it in from the beginning. But this is a totally new concept and it’s not recognized and utilized at all in any of the professional architectural plans but it’s just a matter of us bringing this awareness to them and it should be easily adopted.

**DO:** I talked to a spa conference a couple of years ago in Monaco. I told them they need to be aware of grounding because it makes such a difference. They have lovely pictures of people stretching out in the sun on a piece of wood. If they were stretching out on a grounded surface, it would make all the difference in the world.

So you go the spa to get healthy but there should be a place where you can go and learn how to be grounded and the importance of grounding and you should be grounded.
as much as possible all the time. I have a pad under my computer desk and I have my bare feet on it all the time while I’m using my computer.

Just as an example, you can’t get carpal tunnel if you’re grounded. Carpal tunnel is tendonitis and inflammation of the retinaculum, connective tissue around your wrist. That inflammation will not happen if you’re grounded. So you can use the computer all day, all night and not have it bother you. So that’s very important for people who work at computer stations.

**DM:** Absolutely. They still should probably have an ergonomic keyboard and pay attention to the biomechanics but clearly, I mean, just for health reasons, they should be grounded but it’s certainly nice to get the additional benefit of reducing carpal tunnel. You can also do this in your vehicles.

A significant risk for those of us who travel is being 30 to 35 thousand feet up in a plane and being exposed to radiation dangers because we’re so high up. It is possible to ground yourself on a plane. Forget the plane, we can just talk about the more significant dangers of living in our environment either at home or work or school the electromagnetic radiation in that. I’ve talked a lot about it on the site. It’s clearly a danger and a risk.

You don’t want to be holding a cellphone to your head. Even the most committed person is going to be exposed to the radiation just in the environment.

Can you help us understand how being grounded will minimize your health damage or risk from this radiation whether it’s in your homes, school, at work or at 35,000 feet in the air.

**DO:** We don’t emphasize this as much as we emphasize the importance for your immune system to have electrons from the Earth. However, you can measure the potential on your body with a simple volt meter.

This is really how Clint got started on this. He had a volt meter. He made a little thumbtack sized terminal that he could hold with his thumb and the other terminal on the volt meter measuring AC volts connected to a wire that he plugged into the ground about a foot long plugged into the ground. He was measuring the potential on his body relative to the earth.

He walked around his house and found some places where there is a lot of electricity on his body. If you put your head near a fluorescent lamp, the voltage goes way up. He found out that his bedroom was very electrically active. The wires that are hidden in the wall behind the bed. The wires that go to your bed lamp; to your clock radio. The worst thing of all is an electric blanket. It really electrifies you.

Once he realized that, he wondered what would happen if he grounded his body. So he rigged up a simple thing on his bed so that he could ground himself and he laid down on
the bed. This is the real story of how all of this began. He laid down on his bed that was connected to the Earth, he looked at his volt meter and he was reading just a couple of millivolts, a few thousands of a volt. The next thing he knew it was the next morning. He had the best sleep he had had for years. He didn’t take his pain meds before he went to sleep. He was totally surprised.

So that’s what got him started in realizing how important it was to sleep grounded. For sure it lowers the voltage that’s induced into your body basically capturing your electrons and making them vibrate back and forth 60 times a second. That goes down to virtually zero when you ground yourself while you’re in bed. It’s like your body repels the electrical field in your environment.

Those fields are there even when your bed lamp is turned off. The wires going to your bed lamp and to your clock radio, and to other appliances are irradiating you with 60 cycle electricity. There is controversy about whether that is good for you or not good for you. We don’t want to get too wrapped up on that because the main thing is the importance of the electrons as antioxidants. But you definitely have less induced voltage on your body if you’re grounded.

DM: So this less induced voltage will translate to a protection against the well documented damages from exposure to this type of radiation?

DO: Exactly.

DM: Whether you’re flying which is a significant issue or being exposed sleeping in your bedroom. A number of really astute clinicians advise for everyone to actually have a switch where you could turn off all the electricity to your bedroom at night so that you’re sleeping in an electrically neutral environment. That’s a bit cumbersome for most. More than likely one would achieve the same benefits if they were grounded.

DO: I think so. It is a good idea to switch off your electricity. You have to put a relay on your power system for your home or you’ll have to isolate which circuits are the ones that are electrifying you while you’re in bed. That’s a process and it can be done. The grounding does the job.

DM: For those who maybe engaging in a new home construction one of the simple strategies that they can use is to make sure that their wiring is actually in a metal conduit which will essentially cancel out, because it’s a cylinder, the radiation. Then there will be no radiation behind the walls, it will only be coming out if you plug something in to an outlet.

You can actually get electrical cords that are either grounded or neutralized so they don’t have that field either. I forgot the term that it’s called for. It is important to pay attention to details here. Ideally, you want to do both. I mean get rid of that radiation and then also be grounded for all the other benefits and reasons.
DO: Yes, and you also need to be sure you’re not sleeping next to a source of a rotating field such as a refrigerator has. Those fields aren’t good for you.

I did a survey of a woman’s home. She was very particular. She had her whole house rewired, electrical metal conduit put in everywhere. She had me checkout her house and everything was good until I got to the desk where she sat to open her mail. On the other side of her wall, was her refrigerator in her kitchen. She was opening her mail in a place that had a rotating magnetic field from the refrigerator motor. She was horrified. But she realized that she was now aware of something in her environment that she could change that would probably have a health benefit.

DM: In any of the electrical devices in a home it’s probably is the most pernicious and dangerous is that refrigerator. That field will go through like a hot knife though butter through a wall. That wall will not stop it or slow it down in the least. The only way to minimize is to really increase the distance between yourself and that source. You go to look at the back of your refrigerator as a very dangerous source. You want to stay at least 5 feet away from that on the other side. The more distance the better.

DO: And don’t have your kids watch the food cooking in the microwave oven.

DM: Ideally, you don’t have the microwave oven. We strongly recommend that people consider safer forms of heating your food like infrared but not microwave. The only way why I tell people to do the microwave oven is if you have a relative or a neighbor that they don’t particularly care for and give it to them as a gift. Get it out of their house. A really important thing.

Do you have any other points of information you would like to share about the science or the benefits of this earthing and grounding.

DO: One of the things that’s very important to me is that my dog sleeps on a grounded pad -- we have these little cushions that have the silver material on the surface. If your dog doesn’t go outside, it’s very helpful to have a grounding place and they love it. They go there. Dogs and cats will go and sleep on a grounded surface. They can tell that it’s good for them. That’s a very important aspect of our lives, our pets.

DM: I agree. My girlfriend has two cats. I would just confirm the same observation is that there is a grounding sheet on the end of her bed and the cats just absolutely migrate to that and they spend most of their time on that sheet in the winter so they’re not going outside. Typically in the summer, they would go outside on the patio but it’s interesting that they will migrate to that one. They like it. They’re smart.

DO: They know what’s good.

DM: We can learn a lot from our pets. No question.
I want to thank you for your time, effort, and energy in your work in this field and helping us understand that profound benefits of this. The book is a good resource, Earthing. Do you have any other recommendations that you would advice for people who would like more information?

**DO:** The book refers to the Earthing Institute. EarthingInstitute.net has the research papers, information on the benefits and information on the research that we’ve done. Earthing.com is the place to go if you’re interested in connecting yourself to the Earth inside your home and where you work or getting the various technologies for bringing the benefits of Mother Earth right into your home. So you can spend as much time as you can grounded.

It turns out that the autoimmune diseases especially, Clint has found that in every case of autoimmune disease -- and there are a lot of them -- people benefit from grounding. This is MS and lupus and countless others.

**DM:** Rheumatoid arthritis and inflammatory bowel disease would be the other big players in that area. It is a profoundly important area. It’s interesting too that my observation is that there are two other characteristics of those with an autoimmune disease is that they almost universally have a low vitamin D.

If you think about it, the way we’re ideally designed to get vitamin D is to be outside having the sun on our skin and typically at least our ancestors when they were outside were frequently grounded and barefoot. Obviously, there is a very strong correlation there that it would make sense. I wasn’t aware of it until you mentioned that there was this connection.

That’s something I want to add to my recommendations for those with autoimmune disease because vitamin D works really well as does addressing some of these emotional traumas that occur in earlier age. But grounding should be clearly added to that list of recommended therapies.

**DO:** People are stronger when they’re grounded. The weightlifters notice the difference. My recommendation for any athlete is before an event, stand barefoot for 15 minutes and two things will happen. You will have more energy and your electron reservoirs in your body will become saturated so that if you do fall down or bump into somebody or have some kind of injury, it will heal very quickly.

**DM:** How long does the saturation last? Is it a matter of seconds, minutes, hours? What rate does the dissipation of those free electrons occur?

**DO:** I don’t know. We need to find that out. Definitely the body changes back if you’re wearing insulating shoes. You lose your electrons and I don’t know how quickly.

**DM:** I think the take home message is to get grounded as much as possible. Ideally you do that through the environment. If that’s not a practical option as it is for most of us
certainly in the northern areas of the U.S. and most of the U.S. in the winter that's just not going to be happening regularly because it's just not part of nature for us to do that. But if you can, you know, it's the summer then definitely get outside as much as you can barefoot.

I'm very excited about applying this personally when I leave for my winter retreat in South Florida to be grounded. One of the things I despise most about winter is the fact that I actually have to put shoes on and socks. I just don't like it. I like to be without shoes on the ground. It really is personally very appealing to me to not to have to do that.

**DO:** Good idea. When are you heading South?

**DM:** After the holidays. Thank you again, for all your time, effort, and energy and information in helping to enlighten us on this really important area, an emerging area, an innovative component of understanding how we can benefit from exposing our bodies to these free electrons from the Earth.

**DO:** I thank you for helping people understand this and many other important emerging techniques that can make us feel better and get more out of our lives. Thank you for all your good work.

[END]