

Welcome to the Cutting Edge Health Podcast with Jane Rogers, where we discuss science to help prevent cognitive decline.

**[00:00:00] Jane Rogers:** Welcome to the *Cutting Edge Health Podcast*. I'm Jane Rogers, journalist, health coach, consultant to doctors, and recovering chocoholic. My passion is helping my friends and others squeeze every drop out of life using the latest scientific breakthroughs to make 90, the new 40, extend our health spans by 10 to 20 years, and prevent the diseases of aging.

I travel the world interviewing leading experts in health and longevity to learn how to live longer, better. Buckle up. It's never too late to ride the cutting edge to grow younger, sexier, healthier, and sharper together.

If you can slow your rate of aging, you can slow your chance of getting age-related diseases like cognitive decline. My guest today is an expert at this as the former chief wellness doc at the Cleveland Clinic, an author of four New York Times bestsellers. Dr. Michael Roizen has written a new book called *The Great Age Reboot* and there's also a corresponding app for your phone called Reboot Your Age.

This guy is passionate about 90 being the new 40 and getting all of us there with him. Dr. Roizen, thank you for being with us this morning.

**[00:01:08] Michael Roizen:** It's a privilege. Thank you.

**[00:01:10] Jane:** This longevity space, this slowing aging, increasing health span space, it is so exciting and I know you just have taken a deep dive into it. Could you explain your path? How did you come across and become passionate about this?

**[00:01:26] Michael:** Well, it really started when I was running a step-down ICU at University California. San Francisco Medical Center was my ideal job. I trained in both internal medicine, anesthesia because at that time there weren't ICU training programs and I thought the domain of either was not big enough to do it. I trained in both.

They asked me literally six or seven months into it if I wouldn't run cardiac anesthesia, I'd trained in, done a fellowship in that. The reason they asked was the surgeons were difficult to work with but all they really cared about was the outcome of their patients. I got a hold of the database, California had kept the database on complications and side effects, and deaths after cardiovascular surgery since 1970.

I got a hold of that database and I found out it wasn't their cardiac history or their lung function or their liver function or kidney function or their brain function that determined outcome. What determined outcome was their age. I said, how do I make people 10 or

20 years younger undergoing surgery in the two weeks surrounding surgery? Now, what I mean by that is 10 years was a threefold difference in death rates and complications. 20 years was literally a ninefold difference.

**[00:02:53] Jane:** That's a big difference.

**[00:02:55] Michael:** The complication rates of someone undergoing the same operation, same surgeon, same physiologic variables, was ninefold more at 75 than at 55. I said, "How do we do that?" In learning how to do that, you then have to motivate patients to do that, to do the physical activity, to call friends, to do all the things we know about now.

Their data was there in the late 1970s and early '80s. For example, having six friends and its importance in managing stress and being vulnerable to them was known from the white hall studies in Great Britain and the Berkman Studies in Alameda County by then.

What I said is, "We got to motivate patients," and that's when we came up with real age. That is the actual age of your body as opposed to your calendar age. When I started to motivate patients that way, I then went to the University of Chicago and to figure out to do this really accurately, we needed to get the net present value, not just of stress management or physical activity, but of all the things and to interact with them.

We knew that if someone walked and did resistance exercise but didn't have six friends or who ate red meat, et cetera, what that meant. To do that was the net present value. I ended up caring for a Nobel Prize winner who's gone public with it. I got to take pictures with eight of them since I cared for them. I was head when I moved to the University of Chicago as chair of anesthesia critical care pain management and started executive health there as well.

Gary Becker had won the Nobel Prize for net present value of investments. He helped me do net present value of health choices and that's what real age is. It's really using the same type of formula to figure out the net present value of your choices. That's really what real age is.

That's how I got into this. Now, it turns out there's an even more interesting story how we got into the new book. The only reason to write a book is if you've got something that would change behavior that you think is important enough. That's what happened with *The Great Age Reboot*.

**[00:05:18] Jane:** Since you were talking about-- since you really started doing this in the '70s and '80s and '90s, look how far we've come scientifically. You had so much to put in *The Great Age Reboot* book that I read that was excellent. Also, your app.

**[00:05:31] Michael:** Oh, thank you.

**[00:05:32] Jane:** To help people realize I can make these changes. Doctor, tell me what are your top four changes that people should really think about doing if they're wanting to slow aging?

**[00:05:42] Michael:** Well, the real most important change is to understand your choices matter. You are a genetic engineer. What I mean by that is when you do stress management or when you do physical activity, you change which of the genes are on or not in your cells. Let me give you the example. When I do physical activity, I'm on a treadmill. I'm not using it because I think it is diverting, if you will.

I'm on a treadmill and I normally work on a treadmill desk to get my steps. When I stress a muscle, I turn on a gene in that muscle that makes a small protein called a resin. A resin goes to your brain and releases brain-derived neurotrophic growth factor. Essentially, it's fertilizer for your hippocampus or it's miracle growth for your brain. That means you're much less likely to develop dementia or other problems relating to cognitive dysfunction.

The most important thing for people to understand is they're a genetic engineer. Their choices, simple choices like calling friends or getting the 10,000 steps a day was started with a Japanese pedometer manufacturer, but he ended up being right by golly. It is the simple choices make a huge difference in how long and well you live and in being able to be prepared to reboot yourself.

That in 1998, when real age started our website in the book, we said, "60 could be the new 40." It's happened and that's the 20 years that we were trying for a surgery. Now, we believe that 90 can be the new 40. That is, you can function as if age 40 when you're 90. That's an unprecedented change. To prepare for it, that's what *The Great Age Reboot* app is all about.

**[00:07:54] Jane:** Let me just back up just a second. You have a treadmill in front of your computer, in front of your laptop, so you have everything all set up. You can do email while you're doing the treadmill?

**[00:08:02] Michael:** Yes, I'll turn it on just to show you. I've gotten part of our team to do it and I find that when our Reboot Your Age team to do it, it's a little distracting, so I'm going to stop it. That's right, I can do conference calls, I could do this Zoom, if you will, at 3.3 miles per hour and 2 degrees. I can do writing at about 1.7 miles per hour and 2 degrees. I can do typing at 1.8. I can do reading easily at 1.9. The only problem is, and you'll notice, I think there's a chair back there, right?

**[00:08:41] Jane:** Yes.

**[00:08:41] Michael:** You see the chair pointed here?

**[00:08:43] Jane:** Yes.

**[00:08:43] Michael:** If I forget I'm on it and go off of it, I want to end up in the chair. At least I don't fall and hurt myself. The one thing you've got to remember when you're on this and doing a conference call is that you're actually on it.

**[00:09:01] Jane:** Oh, thank you so much. You've changed my life. I think I'm going to get one because I spent way too much time on my fanny just doing an email and Zooms and that's crazy.

**[00:09:11] Michael:** It's easy to do. In fact, I bought my secretary at treadmill desk or my administrative associate so she can do that if she wants. She does about an hour a day of it. It's an easy way to help get your 6,000 or 10,000 steps a day. You get 6,000 in an hour, but I don't go to bed without 10,000.

**[00:09:29] Jane:** Fabulous. You track those with, what do you wear? A Fitbit, an Aura ring? How do you do that?

**[00:09:33] Michael:** I track it you can see yesterday I did that and the day before I did that, I don't know if you can see those.

**[00:09:40] Jane:** 15,772.

**[00:09:42] Michael:** Anyway, I don't go to bed without 10,000. I track it on that. I also use my cellphones. It automatically logs into our app, our Reboot Your Age app. Anyway, I actually have the first, this is 1977. It still is as a watch that I use. It's really the first smartwatch. It does your heart rate and your exercise capacity. It's the original Polar watch. This is ridiculous, it costs \$29.95, including strap, in 1978 or so.

**[00:10:17] Jane:** We've had inflation since then.

**[00:10:19] Michael:** I bought about five of them, and the straps still work. I send it back to the company. Every now and then it needs a new battery, I send it back to the company. It's \$10 for the battery, and \$10 for the shipping.

**[00:10:31] Jane:** You're the foster child.

[laughter]

**[00:10:33] Michael:** Anyway, I still have that. My wife has the latest edition of a Fitbit, but I still have my original Polar watch because it does the exercise heart rate the best of any of them.

**[00:10:46] Jane:** Does it?

**[00:10:47] Michael:** Yes. One of the things you want, there are four areas of physical activity that make a difference to how long and well you live, and one of those is doing cardiac activity, that's commonly called cardio or aerobic activity, for 20 minutes, 3 times a week, at 85% of your age just at maximum heart rate, which is 220 minus your age for men. It's about the same for women. It's a little off for women, but 220 minus your age works pretty well for you, max.

If you're a 50, 220 minus 50 is 170, 10% of that is 17, so 153, and take another 8 for the 5%. You want to be at 145 beats per minute or more for that 20 minutes. The Polar watch and the strap did that in 1978 and still does it.

**[00:11:42] Jane:** Cardiovascular aerobic is important. What are the other three on your mind to help someone be younger?

**[00:11:49] Michael:** It's any. People think of step and step equivalents. If you don't like walking, you can do gardening, you can play with your kids, you can play ping pong. It's any activity. The whole thing on Reboot Your Age is not sour cream or something that isn't desirable. It actually is, do things you love that love you back.

I love walking, and I love playing ping pong, and so I do those as my general activity and getting my 10,000 steps or more per day. By the way, in 13 studies prior to 1990, 10,000 was a magic number. In 13 studies since 1990, 10,000 is the magic number. We've had three more that look at brain functioning in the recent past, and it's still 10,000 is the magic number.

10,000 steps a day for general activity, resistance activity is about 20 minutes a week with getting your core muscle groups. It isn't doing bicep curls, it's your core. It's bent over, back rows and lunges and squats, getting out of a chair without using your hands, et cetera, pull-ups. Then it is cardio, I already went 3 times a week at 20 minutes at 85% of your age adjusted max.

Then the fourth is jumping on a hard surface. Simple 40 jumps. Why? It's the only thing we know that keeps-- I'll do three or four of them. It's the only thing we know that keeps your discs lubricated and builds bone and your hips. Now, if you run between 3.8 and 6.3 miles per hour, say, you like to do that, that's what you do on the treadmill, you actually get the jarring enough to do the same thing. If you're running faster than 6.3 miles per hour, you're gliding and not getting enough jarring to do that. If you are slower than 3.8, you're not getting enough jarring to do it.

**[00:13:48] Jane:** Oh, that's huge. Thank you. Do you also intermittent fast?

**[00:13:52] Michael:** The data on calorie restriction or food restriction is best when it's done 5 days, long goes data, 5 days of 750 calories. Actually, it's 1,000 calories the first

day, 750 the next 4, then go back on Mediterranean diet. It's calorie restriction for five days a month, resets every marker of aging we have, including brain aging. The intermittent fasting of 16.8 or 17.7, I do, but the data is much weaker than the 5 days. I scratch off five days. In fact, my first day is today.

**[00:14:33] Jane:** You're hungry.

**[00:14:34] Michael:** Of the 5 days, I do the 17.7 anyway. First meal is at 11:30 or so, and I finish by 6:30. I try and do a 17.7 every day, but I don't front load enough, meaning you want the earlier meal to be bigger. I'm getting to do that. Five days a month, I do the fasting mimicking diet. You can get it from-- Valter Longo has set up company which supports his research called ProLon. I just do the original one, which is soup with 36 ounces of diced tomatoes, 36 ounces of water, 12 ounces of corn Niblets, 12 ounces of water, onions, and spices to taste. You can have 17 12-ounce portions of that and stay under the 750 calories.

**[00:15:23] Jane:** Are you hungry?

**[00:15:24] Michael:** Well, it turns out that is pretty darn satisfying. When you only have the soup and don't have the variety that the ProLon group has in its diet, you get pretty tired of tomato soup by the fifth day. I do 48 minutes of cardio 3 times a week, and I can tell you why I do that weird number. It's not based on what is needed, the minimum for maximum activity. It's based on the fact that I play a lot of a game called Squad or used to. It's a 48 minute, is important for the cardio in that.

Forgetting that, the first 10 or 15 minutes on day 5 of cardio, if you do it on day 5, you can feel great, but then it is really tough to push through to get the full 48 minutes. In fact, I try and gauge it so that my first day isn't-- This is crazy, I'm telling you everything I do.

**[00:16:19] Jane:** I appreciate it.

**[00:16:20] Michael:** Wednesday night, Saturday and Sunday, I do cardio. I do 48 minutes those 3 times. I try not to start on a Wednesday. I try and start on a Saturday, Sunday and go because the fifth day is, if you do Saturday, Sunday, Monday, Tuesday, Wednesday, that's a tough day, that fifth day. If you started on Friday, then you can get Saturday and Sunday cardio in, and Wednesday, you're eating Mediterranean again and not having to do it.

**[00:16:48] Jane:** It's fine?

**[00:16:49] Michael:** The ideal day to start is Friday because of my schedule, my wife likes it. She doesn't cook those days, and I don't cook for her. The Saturdays and Sundays that I miss, I usually have an egg-white veggie omelet, so I don't get any protein those

days, but in any case. I do it every month with some religiosity, and I'm doing it starting Wednesday, today, this month.

**[00:17:12] Jane:** I don't meet very many people who are trying as hard as I personally try to stay healthy, and you got me beat. A deep bow to you.

**[00:17:21] Michael:** That's my job. My job is to motivate my patients. I see patients on Thursdays and Fridays. Thursday is in executive health; Friday is in wellness. My job is to motivate them to do longevity and to stay healthy. My job is to try and help people understand how much control they have over how long and well they live, and to motivate them to do it.

I've got a guy who was a cigarette smoker who I got to quit smoking, I would guess six weeks ago. I eat out with him every day. I knew that I couldn't toss it off to our coaches. Our coaches are wonderful, but he wanted me to do it. He has literally tried 28 times to get off cigarettes. He's now off for eight weeks now. I don't consider it success until two years. In fact, my emailing with him is part of the motivation.

As a physician, I don't consider our job prescribing a blood pressure pill or prescribing something, or even getting people to eat healthier. You don't have to be perfect, but it's to eat healthier or to exercise appropriately, et cetera. It isn't to prescribe it, it's to get them to do it. The outcome is what measures, what matters. The Cleveland Clinic built its name an outcome.

We have the best surgical results based on when the patient returns to work, and the complication rate. That's the key. That's what we've done in wellness and longevity as well. It isn't good enough for me to say, "You need to get your blood pressure under 125 and under 85," if they don't do it. My job is to not only help them understand why, but to figure out, "What's that key trick? Is it their grandkids? Is it their own health? Is it their spouse? Is it whatever they're doing?"

Find that secret that motivates them, their passion, and to work on that into how they're doing it. I'm passionate about helping people live younger for longer and to understand how much control they have, but I do it because I love living too.

**[00:19:36] Jane:** I totally get it. There are some other things that people are doing like rapamycin, nicotinamide riboside, NR or NMN, glycine, trimethylglycine. Do you talk about that with your patients? Do you go that extra step? Science is showing other things.

**[00:19:54] Michael:** Yes. In the app, in the Reboot Your Age app, we cover, I think it's now 53 supplements. Spermidine, CoQ10, et cetera. We have a scientific review and then we present that review to our scientific advisory board with our recommendations and conclusions. We bat it around. We do it in a what's called an NIH study section type of

review. It turns out that about 15 of the supplements have enough data to say, "You should discuss these with your practitioner. They're probably more beneficial than not."

Where we are in rapamycin and NAD, rapamycin is a little different, so I'll come back to that in a second. With NAD in the NMN and the NAD precursors is we know they are safe. They're safe in humans at the doses. We don't know they're effective in humans. They are effective in animal models at restoring energy function in the mitochondria and you get a decrease of NAD as you go on.

These do increase NAD somewhat the precursors do, but we don't have outcome data that you've heard. I'm outcome-driven. We don't have outcome data in humans. They're fine to take, but we don't have good enough data to say, "This is something that everyone should talk to their physician about." We do with, for example, phosphocreatine, we do with CoQ10. We do with, as I said, probably about 16 of the 53, but not with those two.

Now, rapamycin, we don't know the right dose. We don't know the right dosing interval. We don't know its full side effect profile and healthy profile. The problem with rapamycin, it probably is beneficial, but we don't know how to adjust the dose. Is the dose different in women? It looks like it is than man. Is the dosing interval different in different-sized people and what is it?

Is it the body mass index? Is it they're fat-free? Is it they're water-free? We just don't have enough data with rapamycin and we do know it has some side effects and we do know it affects more than one system. It slows growth. That's one of the things you do with that five-day fasting-mimicking diet. You turn off growth, that's what rapamycin does. Then when you get to the Mediterranean diet, you regenerate proteins.

You have recycled and regenerated proteins. That's the goal of rapamycin as well. It also seems to impede some other functions and energy transfer, if you will, in the mitochondria. We know it has both some generic side effects as an immune suppressant at high doses, that's what it was approved for. We know it has some side effects on mitochondria. I don't think we've got enough data to say, "This is something everyone should take."

Now, what if I was feeling like I'm going to die within a couple of years, and I was losing everything and I was losing function? Would I talk to my doc about it? Well, I wouldn't talk to my doc, I'd talk to Dr. Alan Green who's the world's expert in rapamycin and I'd say, "Would you take me on as a patient?" I'd say, "This is what I believe in the rapamycin, but we don't have enough data for everyone, and we don't have enough expertise for every doctor to do that."

**[00:23:46] Jane:** I agree. As Dr. Green said to me, he said, "You know what? I think every primary care doctor should only be focused on longevity and they can farm out the other



stuff. They can farm out the cardiovascular and the kidney problems or anything, but you want your doc really to be focused on longevity," which I thought was interesting. Just like you, if you can improve that, it's better.

**[00:24:04] Michael:** You see, I think cardiovascular disease and preventing chronic disease, that is the things we do normally are very important in preparing for the longevity revolution. We don't quite have enough data to say-- In the book, we go through the 14 different areas of research into aging mechanism that teach people what is about to come.

The middle third or the middle, if you will, fifth of the book is about the policy changes and what you can do from a financial standpoint and what will happen and what is needed for society so that we thrive when we get this 30-year boost. The last third of the book is on all those things you can do now and where they are in doing now.

There are many things we can do now to get prepared for this 30-year exponential jump so that you're living to 80 without any or 90 without any structural changes because until you get fibrosis, we think you're going to be able to revert things. In other words, liver dysfunction, you can reverse now, but fibrosis, we don't know that you're going to be able to reverse that.

Maybe someday, maybe as we say in the book in 2050, you'll go in the carwash as a 90-year-old at one end and you'll come out a 40-year-old at the other. For now, it's going to be organ by organ. You want to protect all your organs from structural change as much as possible till the reboot comes.

**[00:25:46] Jane:** That and just stay alive because it's coming, it's coming quickly. You want to be here and all in one piece so you can take advantage of that.

**[00:25:54] Michael:** That's exactly how I feel, Jane.

**[00:25:56] Jane:** I loved your chapters on how to prepare for this financially and how to prepare as a society because all of a sudden, we're going to have people living easily to 90 and 100 and that's going to change the whole fabric of our society.

**[00:26:09] Michael:** I think that if I was going to say why we really wrote the book was to motivate people to understand not that new science because we don't know which of those things, but we wanted to show that this is coming. It was to say this is what we need to do in a policy procedure in the country and this is what you might do to help prepare yourself financially to thrive in this period.

**[00:26:37] Jane:** I thought it was interesting you said we're going to need basically to work longer.

**[00:26:41] Michael:** In fact, the co-authors are a demographer, Albert Rattner, and a finance professor emeritus that from Wharton, Peter Linneman who's probably one of the most famous of the real estate financial because a lot of this will change your housing stock and where we leave.

**[00:27:03] Jane:** I thought it was fascinating that both of them were advocating, don't think about retiring at 65. You have so much to offer. You're going to be vibrant, you're going to feel good. You should think about doing something you're passionate until you're 80.

**[00:27:15] Michael:** Or later. Albert was chair of the board of Forest City for 25 years and retired from that I think at 88. He is full-time active now at, I think he's 94 and has a birthday coming up.

**[00:27:34] Jane:** May we both be like that at 94.

**[00:27:36] Michael:** He's fully active and this book really started because he was trash-talking me. He and I played ping pong every Saturday and he was trash-talking me to get an advantage on ping pong. He said, "Okay, what's happening in medicine?" he'd say every week, which was really to get me to divert away from thinking about how I was going to play him in ping pong, the strategy.

**[00:28:00] Jane:** That devil.

[laughter]

**[00:28:02] Michael:** That's how this book really started because as we talked more about what was happening in science and what it meant to demography changes everything if you will. That makes it possible for society to really thrive if we do it right. I would talk to them back and say, "How will this change Forest city redeveloped Stapleton Airport, Forest city did the Guggenheim, Forest city did Berkeley's Place and the New York Times building and they redid the naval yard in Washington, DC, et cetera." They're big development companies. I would go to him and say, "How will this change how we do housing?"

**[00:28:43] Jane:** Then he couldn't hand you a slam then. That's great.

**[00:28:46] Michael:** We were trying to divert each other. Our difference in age is what he wants in a point spread every game. He constantly negotiates with me for points. He went to college on a basketball scholarship. He is still incredibly coordinated and doesn't need points.

**[00:29:03] Jane:** That's just great. Anything we are missing before we wrap up? There's so much I want to talk with you about, but is there anything on your mind that we have missed?

**[00:29:13] Michael:** Well, if you go to our website, [greatagereboot.com](http://greatagereboot.com), you can try to Reboot Your Age app for free. We have a number of subsidiary apps built into it for no extra cost. After 10 days, there is a subscription fee, but for example, brain age queues, double decision, and freeze frame, which have studies showing how they prevent cognitive dysfunction as you get older are embedded in the app as well as a bunch of coaching and stress management processes as well. That's Reboot Your Age app. The other thing I did want to, I suppose mention is just to make sure people understand they get to control a lot of how fast they age. Don't put it off on someone else. Don't think your choices don't matter. Your choices matter a huge amount.

**[00:30:11] Jane:** Dr. Roizen, thank you for your time and for your energy doing what you're doing.

**[00:30:16] Michael:** Thank you, Jane.

**[00:30:16] Jane:** I'm very impressed. Your patients are incredibly lucky.

**[00:30:19] Michael:** Oh, it's my privilege. Anyone can be one of my patients, so thank you.

**[00:30:24] Jane:** You're welcome. Have a great day.

**[00:30:26] Michael:** You too. Thank you.

[music]

**[00:30:30] Voice-over:** You've been listening to *The Cutting Edge Health Podcast* created and hosted by Jane Rogers. The website is [cuttingedgehealth.com](http://cuttingedgehealth.com). We hope you enjoyed the show and would very much appreciate your writing a review. They help a lot, and we read each one. Any information shared on this podcast is for educational purposes only. Guest opinions are their own. This podcast is not responsible for the veracity of their statements.

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