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

Jane Rogers: Welcome to the Cutting Edge Health: Preventing Cognitive Decline podcast. I'm Jane Rogers.

This is a doozy of a podcast. I had the pleasure of interviewing Michael Greger. He is an MD, and you may recognize the name.

He's very popular. He's written a lot of *New York Times* bestselling books, basically on how to live the lifestyle to be able to be healthy longer. And there are a ton of pearls in here.

You know him. He talks so fast. There's so much to share that you can get more in his books or also NutritionFacts.org, an organization he founded where he shares everything. Dr. Michael Greger, thank you very much for joining us today. So happy to be here. We're excited to have you.

So, your book is awesome. I've been looking through it. I'm reading it.

It's called *How Not to Age*. And this is exactly what this audience is trying to do. We're trying to slow aging so we can prevent some of the diseases of aging.

Now, you took what, four hundred pages to get through all that stuff there. I'd love you to summarize it and let us know what some of the top things are that you think we should be doing.

Dr. Michael Greger: Sure. Well, based on studies of identical twins, only about 25% of the difference in lifespan between people is due to genetics. So, for what we can do to exert control over the majority of which we have some control is to look to the blue zones, these areas of exceptional longevity around the world, where more than a hundred dietary surveys suggested that we should center our diets around whole plant foods.

Probably the most important thing we can do is to eat healthier. And that means minimizing processed foods, meat, dairy, sugar, eggs, salt, while maximizing fruits, vegetables, whole grains, legumes like beans, split peas, chickpeas, and lentils, nuts and seeds, mushrooms, herbs and spices–basically real food that grows out of the ground. These are our healthiest choices.

Jane Rogers: Okay. There are also eleven pathways to aging that you discuss at length in your book. And some of those you say can really have an impact without big pharma.

Dr. Michael Greger: Yes. In fact, that's where the whole genesis of the book came about, because there was this consensus document from the top anti-aging researchers in the world, funded by the pharmaceutical industry, to determine what are the key pathways of aging, so they could come up

with the kind of pharmacological solutions to block them. When I was looking through this paper, I was like, wait a second, every single one of these pathways could be affected by lifestyle.

And so I was like, all right, well, let's write the book. And so that's actually part one of the book, where I talk about the eleven most promising pathways for slowing the sands of time, ending each with practical proposals for targeting them naturally with diet and lifestyle changes. We're talking about boosting the anti-aging enzymes and hormones, such as AMPK, FGF-21, sirtuins, telomerase, while suppressing the pro-aging enzymes and hormones like mTOR and IGF-1, decreasing glycation, inflammation, oxidation, and senescence, while preserving autophagy, artelomeres, and slowing the epigenetic clock.

I know these all sound like kind of fancy-sounding scientific terms. I really do try to break it down into easily understandable, doable, practical takeaways.

Jane Rogers: Okay. So, give us an example. Senescent cells. What should we be doing to kill those zombie cells, in your opinion, and in looking at the literature?

Dr. Michael Greger: Oh, yes. This is an area that I didn't even know about before starting this book. Cell senescence, just for those who are unfamiliar, is the accumulation of these so-called zombie cells, considered to be one of the foundational hallmarks of aging.

Most of our cells only divide about fifty times before they kind of stall out, at which point they secrete these inflammatory compounds, the signal of the immune system to wipe them out. Unfortunately, our ability to remove these cells declines with age, so our tissues can become littered with them, and the ensuing inflammation can cause all sorts of problems. Thankfully, we can help prevent premature senescence by averting oxidative DNA damage, and potentially help clear them out by eating natural senolytic compounds in foods, such as quercetin, fisetin, and piperlongumine.

So basically, to help slow this aging pathway, I encourage folks to consider, on a daily basis, consuming quercetin-rich foods, beverages, and seasonings, such as apples, onions, kale, tea, and salt-free capers, as well as eating fresh, frozen, or freeze-dried strawberries, which is the most concentrated dietary source of fisetin, and then also seasoning meals with something called pippali, known as long pepper. You can find it at Middle Eastern spice stores, and that has the piperlongumine, which is also a natural senolytic compound.

Jane Rogers: And how about turning off mTOR?

Dr. Michael Greger: Oh, well, turning off mTOR, is perhaps one of the most important things we could do. mTOR is an enzyme recognized to be a major driver of aging, perhaps more than any other single anti-aging strategy. mTOR inhibition disrupts a panoply of degenerative processes,

explaining why the mTOR-blocking drug rapamycin is the most effective pharmacological approach ever devised for targeting aging.

But non-pharmacological approaches to the so-called pacemaker of aging enzyme include the restriction of certain amino acids, such as methionine and leucine, protein restriction in general, or full dietary restriction. To help slow this aging pathway, I encourage people on a daily basis to follow all the steps to boost AMPK, which is kind of like the reverse of mTOR, which I can talk about, and try to stick to the recommended daily intake of protein, which is 0.8 grams per healthy kilogram of body weight, or 0.36 grams per pound. Translates to about 45 grams of protein a day for the average height woman, 55 a day for the average height man, and then choosing plant-based protein sources whenever possible, because those tend to be lower in the amino acids we're concerned about, such as methionine.

Jane Rogers: So, let's get back to AMPK. You want to boost it. How do you do that?

Dr. Michael Greger: Yeah, so AMPK, actually the discovery of AMPK is probably one of the most important biomedical breakthroughs of the last few decades. It's activated when we eat less or when we move more. Some food components, like saturated fat actually actively suppress AMPK, whereas others, like fiber, can boost it.

Then there's specific AMPK-activating compounds in barberries, black cumin, hibiscus tea, and vinegar. To help boost this anti-aging pathway, I encourage people to consider at each meal reducing your intake of saturated fat, which is mostly meat, dairy, desserts, increasing one's intake of fiber, which is concentrated in legumes and whole grains, and then taking each of the following. Two teaspoons of barberries. It's like a rice dish, you can find them dried at like Indian spice stores. A dash of ground black cumin, which is like a twelfth of a teaspoon of ground black cumin, and three-quarter cup of hibiscus tea mixed with a quarter cup of lemon verbena tea, also shown to boost AMPK, as well as two teaspoons of vinegar, though never to be taken straight. We should sprinkle on food or dilute in tea or something. Otherwise, we can burn our esophagus.

Jane Rogers: So, all of those things impact your cognitive vibrancy as you age, but so do cardiovascular things. So, we get the panel back, and your cholesterol is too high, and you've got problems in that area. What are you recommending for natural remedies to help the heart?

Dr. Michael Greger: Well, indeed. I mean, what's good for our horns is good for our head, as atherosclerosis clogging the arteries inside our brain into our intracerebral arteries plays a role in the development of Alzheimer's dementia. Those with a total cholesterol of 225 or more have twenty times the odds of ending up with amyloid plaques in their brains ten to fifteen years later.

In terms of improving our artery function, there's a saying, you know, we're only as old as our arteries. Basically quitting smoking, lowering saturated fat intake, eating a plant-based diet can help increase our endothelial and progenitor cells, which are these stem cells that regenerate the

inner lining of our blood vessels. By age 10, nearly all kids raised in a standard American diet develop the first stage of atherosclerosis, our number one killer, these fatty streaks.

And so, you know, having a normal cholesterol or a normal blood pressure in a society where it's normal to drop dead of a heart attack or stroke is not necessarily a good thing. We don't want normal, we want ideal. So, the ideal blood pressure may be 110 over 70, and the ideal LDL cholesterol is a lifelong 100 mg per deciliter or less, or 70 starting later in life and as low as 30 or less for those with pre-existing heart disease.

Statin drugs are recommended for those with history of stroke or heart disease or those otherwise at elevated risk. The side effects include increased risk of developing type 2 diabetes. And so dietary control of LDL cholesterol is the first approach, which means dramatically reducing one's intake of trans fats, saturated fats, and dietary cholesterol.

And a heart-healthy diet is a brain-healthy diet, is a kidney-healthy diet, is a liver-healthy diet, because all of our organ systems, critical organ systems, rely on getting oxygenated blood, getting rid of waste. And so that's why improving the health of our arteries can help us from, you know, stem to stern.

Jane Rogers: Oh, great information. And some people may be saying, I can't write it down fast enough. This guy talks really fast.

Dr. Michael Greger: That's why I write books!

Jane Rogers: And also you founded NutritionFacts.org.

Dr. Michael Greger: Yes. So all my work is available free at NutritionFacts.org. It's a nonprofit public resource. No ads, no commercial sponsorships, not selling anything, just put it up as a public service, as a labor of love. So I encourage people to check it out.

Jane Rogers: And Michael, you're an MD. How did you get into this little niche? Because you're very good at it. When I saw you speaking at the conference in West Palm Beach, you have groupies. There were a hundred people that right when your name was mentioned, they stood up and started to clap.

Dr. Michael Greger: Yeah, yeah. That's sweet. Yeah. You know, it all started with my grandma, actually. I was just a kid when my grandma was diagnosed with end-stage heart disease and sent home in a wheelchair to die. She had so many bypass surgeries and end-stage heart disease that she basically ran out of surgery at some point, confined in a wheelchair, crushing chest pain. Her life was over at age 65. She heard about this guy Nathan Pritikin, one of our early lifestyle medicine pioneers, and what happened next is detailed in Pritikin's biography. It talks about Frances Greger, my grandmother.

They wheeled her in, and she walked out. Though she was given her medical death sentence at age 65 thanks to a healthy diet, she was able to enjoy another 31 years on this planet until age 96. To continue to enjoy her six grandkids, including me. So that's why I went into medicine, why I practiced lifestyle medicine, why I started NutritionFacts.org, why I wrote the book *How Not to Die*, why all the proceeds from all my books are donated directly to charity. I just want to do for everyone's family what Pritikin did for my family.

Jane Rogers: Oh, that's beautiful. And I loved it that 100% of your proceeds from your books go to charity. Which charity have you selected, by the way?

Dr. Michael Greger: Oh, well, it changes every year. So I'm a big fan of the effective altruism movement. And so there's wonderful charity evaluators like GiveWell, where they go around the world and try to find out where is one's biggest bang for your buck.

So typical things are like providing bed nets to prevent malaria in sub-Saharan Africa. It's a very cost-effective way to save lives. And similar things like that, where it's just like for a small amount of money, we can be heroes and save lives.

Like if you save someone's life, you drag someone out of a burning building, you would remember that for the rest of your life, having saved a life. We can all save our lives by donating to some of the most effective charities in the world. And so I'm honored to be able to do that. And so I'm like saving lives to putting out this information and then can take the money and put that in to save even more lives.

I live a very privileged, gifted life.

Jane Rogers: You do, you do. So, to keep your brain firing as fast as it's firing this morning, what are you doing to keep it going?

Dr. Michael Greger: It's eating a healthy diet. Controlling one's cardiovascular risk factors, making sure to normalize blood pressure. People are hypertensive, you need to bring people's cholesterol down. Alzheimer's, as I said, is related to the Alzheimer's plaque within the brain.

So. things that help cardiovascular help, help with cognitive health. Aerobic exercise is critically important to improve brain function, both normal and cognitively impaired individuals. Perhaps by boosting something called brain-derived neurotrophic factor, which is also boosted through meditation, caloric restriction, reducing saturated fat intake, and eating high flavonoid fruits and vegetables, and rye groats, which are intact whole grain kernels of rye, also boosts BDNF.

So basically the best dementia-deterring diet would be low in added sugars, salt-saturated fat, animal products, processed foods, high in whole plant foods, particularly greens, beans, and berries.

Jane Rogers: And you should be starting this at age 10.

Dr. Michael Greger: Earlier. But critically important, it's never too late. And it's not all or nothing, right? It's not black or white. It wouldn't even make drastic changes. Even basic, common-sense lifestyle factors can mean living a decade longer, not smoking, not being obese, regular exercise, more fruits and vegetables. It's never too late. Never too late to start eating healthier. Never too late to start moving. Never too late to, you know, stop smoking. We really do have the power.

Jane Rogers: And what are your thoughts about the community that says, we can increase our health spans. We can have a shortened time when we're really sick before we die, instead of a prolonged period. Do you think that is an achievable goal?

Dr. Michael Greger: Oh, absolutely. We already know that. I mean, if you look at what's causing the most disability, whether physical disability like osteoarthritis or mental disability, like cognitive dysfunction, mild cognitive impairment, these are all things that we can largely prevent, treat, or reverse with lifestyle changes.

The flip side, the fact that lifestyle, about 80% of what we see in primary care are these lifestyle diseases. That's good news because it means that, well, if this is causing the disease, well, then we can treat the root cause and prevent these diseases from getting worse at the very least and often stop them and reverse them because our body wants to be healthy. It's just when we stab ourselves with a fork three times a day, we may never heal.

Jane Rogers: That's a good way of putting it. Stab ourselves with a fork. But why is it then that a lot of people have trouble adopting the lifestyle changes that are pretty clear, in your opinion?

Dr. Michael Greger: Oh, well, I mean, it's like anything else, human psychology. Particularly when it comes to food, food is so deeply ingrained in our culture, both our families and holidays and business lunches and you name it. If you're a smoker and all your friends are smokers and you're all going, it's just part of a social thing, you know, it may be more difficult to quit.

Just because you know something is bad for you. I mean, who doesn't know that doing cocaine is bad for you? Why does anyone do cocaine or heroin?

It's because the kind of short-term gain they get, like, oh, this tastes really good. Even if they know, well, long-term, this isn't good for us, you know, we have difficulty kind of discount the future and have this very kind of short-term thinking, where it's like, if you think about it, anything you want to do in life, you know, you really need your health.

Jane Rogers: It's the foundation.

Dr. Michael Greger: So whatever goals you have, whether you want to see your kids grow up or get married or travel the world or whatever, I mean, you need to be healthy. For people who are, particularly for young and healthy people that have never really had a serious illness, we physicians, you know, we see people really sick in hospitals and realize how much it robs people of their independence. Imagine being in chronic pain every day.

I asked some of my younger patients to think about when the last time they had a really bad cold, and it's like, oh, my God, you're stuffed up, you can't sleep, your face, blah, blah. Okay, that's a cold. That's like the least thing, right?

Like the least worst thing in all of medicine, right? Okay, now imagine, and then you can go through this just litany of horrible things that can happen to you that just take over your life, take over your psychic space, you know, just limit your possibilities. And so it's important to think about your future self, oh, you know, when you're deliberating, not just what will feel good or taste good right now, but like, okay, I'm gonna be in this body for a long time, you know, hopefully.

So it's like, you know, people take better care of their cars than they do their own body, you know, they put in the good oil and the good, you know, because you can get a new car, but you can't get a new body.

Jane Rogers: Oh, very well put. So you read the literature. How many hours do you spend reading literature, medical literature? A day, tons.

Dr. Michael Greger: When I'm in research mode, it's all day, all day, every day.

Jane Rogers: That's what I thought. So in your reading, what is on the horizon that may help us stay vibrant longer?

Dr. Michael Greger: All sorts of juicy stuff. So, one of the latest things, it's actually taurine. So the seminal paper came out on taurine supplementation after the manuscript for *How Not to Age* was actually submitted. This important paper showing that taurine supplementation improves the lifespan and health span of animals. The question is, does it do in humans too?

So I've just recently done a big deep dive and in February doing a webinar on the subject on whether people should consider supplementing with taurine every day. It's something that our body makes, but as we age, the ability of our body to produce taurine tends to decline, so we may need to ensure we get some in our diet. And the question is, what are the best sources? What are the risks and benefits? What kind of dosing schedule? So that's something I'm looking forward to sharing with everybody.

Jane Rogers: And taurine is something that is affordable.

Dr. Michael Greger: Oh my God, it's dirt cheap, literally a penny a day. So you can get about a gram for a penny and you don't even need to take a gram. Oh yeah, yeah. And you just get pure taurine, one ingredient.

Jane Rogers: What are the downsides of taurine? It sounds great. Why do you hesitate?

Dr. Michael Greger: Yeah, well, there's some contraindications. There are some people that shouldn't be taking taurine. The biggest issue is these taurine conjugated bile acids. When you take a lot of taurine, you produce these bile acids that can result in increased hydrogen sulfide production, which is kind of the rotten egg gas in the colon, which can have carcinogenic effects. And so the concern is increased risk of colorectal cancer with taurine supplementation, which is the number one cancer killer of non-smokers. But there are ways that you can mediate that effect.

And that is, one, by eating high-fiber diets, for example. So high-fiber diets can actually counteract the butyrate, which is a postbiotic produced by your good gut bugs when you eat fiber, can counteract the deleterious effects of the hydrogen sulfide. So that's one way to go about it. There's another way that I'm exploring now. And so like any powerful thing, yes, medicine, there's like pros and cons or surgery, but somehow natural approaches that have no downsides. But it's just like anything that's powerful enough to make you healthier.

You know, you can exercise too much. It's important to really know the pros and cons. It's your body, your choice. And so you really have to have fully informed consent before deciding to go down any particular route.

Jane Rogers: So what else is on the horizon? Taurine and what else are you excited about?

Dr. Michael Greger: Oh, I just did a deep dive into cold water emerging, these cold plunges. Yeah. So there's, you know, it's purported benefits for immunity, purported dependence for mood and athletic recovery.

And it's interesting, most of the effects really appear to be placebo effects. So, you know, you can randomize people to, you know, a sugar pill and get very similar effects and actually may impair muscle growth. So I'm surprised people continue to do it.

Although at certain times, so something called whole body cryotherapy may improve mood. Again, it may be a placebo effect all in your head, but guess what? That's what mental illness is. It's all in your head. If you feel better, you feel better. Who cares, right? Whether it's a real effect or a placebo effect, but there's some riskier things like winter bathing or cold water swimming that

have some serious potential downsides that you really want to make sure that you're actually getting benefit out of before, you know, undertaking.

Jane Rogers: Oh, my friends from Copenhagen swear by that winter bathing.

Dr. Michael Greger: Oh, boy, people do. Absolutely. But it's interesting So for example, cold water swimmers self-report that they get less respiratory infections, et cetera, but it's look, they're also swimmers. And so maybe it's just the exercise. So they actually did a study where they compared upper respiratory tract infections, which is kind of a proxy for immune function between not just cold water swimmers and people that don't cold water swim, but cold water swimmers versus indoor heated pool swimmers and found that there's no difference and that they both had fewer infections than people who didn't swim at all. But it was the exercise. Exercise boosts your immune function.

Jane Rogers: That's interesting.

Dr. Michael Greger: But there was no benefit of the cold water versus just the warm water. So those are the important things to do to tease out. Look, if you like the cold, then there's ways to do it safely and blah, blah, blah, but it does not appear necessary, at least from an immune function standpoint. Although there's interesting work on cold showers suggesting decrease in upper respiratory tract infections versus those randomized to not do cold showers. So it's a really fascinating literature.

Jane Rogers: Is there anything else?

Dr. Michael Greger: On and on. It goes on and on. Everything, everything. My book has 13,000 citations. There's a lot of science out there. People should feel free to dive in.

Jane Rogers: Where are you on hyperbaric oxygen?

Dr. Michael Greger: Oh, good question. It's not something I've looked into. I'm skeptical, but in the few areas I have looked into it for, I've been very disappointed, but it's like if you use it for 20 different things, maybe it works for two of them or one of them. And so you don't want to have just kind of some kind of negative across the board.

Many times there's any kind of gimmicky, expensive thing. There's just like a profit motive. There's a commercial incentive to present the data in a way that their really expensive toy would appear better than it is. And that may be true, but it may not be. And so you want to know, because you could be spending that money on kale.

Jane Rogers: We're heading into a new administration in our country, and it may be that big pharma sees some changes under this new administration.

Dr. Michael Greger: If you look at the stock market, big pharma is not feeling good right now.

Jane Rogers: No. What are your thoughts? Do you think things are going to change from what we've been seeing, status quo?

Dr. Michael Greger: One can only hope. It's hard to imagine things getting worse. So yeah, we'll see. And so there's been talk about perhaps cutting ag subsidies. Why are taxpayers making sugar artificially cheap? Why are we paying sugar subsidies to the industry? Like, why are we making feedstuffs for livestock artificially cheap to make dollar menu burgers? It's like if you're going to subsidize any food, which is, and there's an argument, we shouldn't subsidize anything. But if you are going to, why not make fruits and vegetables cheaper?

Why not make our country healthier? And so there's all sorts of things we could do build incentives to make healthy food more affordable, more convenient, and kind of the default choice, particularly in institutions over which the federal government has power. Federal school lunch program, prisons, military. I mean, they feed millions of meals. And so there's no reason why they can't have a huge lever in terms of making the food industry healthier.

Jane Rogers: Three quarters of us are obese, and there's a reason for that.

Dr. Michael Greger: Oh, it's outrageous. Three quarters overweight or obese, yeah.

Jane Rogers: Where are you on toxins? And how important do you feel it is that we try to not harbor too many of them in our bodies?

Dr. Michael Greger: Yeah, there's big emphasis on detoxification. So two things. One, we have a liver that detoxifies. I mean, we have a built-in detoxification system. So by supporting our liver, for example, by eating cruciferous vegetables, which is the broccoli, kale, cabbage, cauliflower, actually boosts our liver's detoxing abilities such that, you know, if you know you have a barbecue coming up and you're going to eat some ribs or something, having broccoli even a week before can so rev up your detoxifying enzymes. You get less of these polycyclic aromatic hydrocarbons flowing through your system. You get less of a caffeine buzz drinking coffee after you've eaten some broccoli. I mean, it's really powerful. So we can naturally detox and even better, not tox in the first place, right?

And so there are certain foods that are more concentrated in some of the things we want to stay away from, like the dioxins and PCBs and, you know, banned pesticides and these forever chemicals and flame retardants and on down the list. They tend to accumulate up the food chain. So eating lower on the food chain is helpful.

So either eating plants is lowest on the food chain or eating just plant eaters. Unfortunately, you know, as we learned from the mad cow debacle, we don't have herbivores anymore. We feed cows and pigs and chickens millions of pounds of, you know, slaughterhouse remains and on down the list.

And so actually the animals we eat we're like polar bears at the top of the food chain. We're getting a lot of these concentrated toxins. But there's ways we can reduce our exposure in the first place.

Which is really the best way to do it because some of these compounds have very, very long half-lives. Something like mercury, within a few months you can detoxify. Have people eat tuna or swordfish or something and then you stop it and you can see the levels in their bodies go down.

But, you know, something like PCBs or DDT or something, you need centuries to get rid of some of these compounds. Although they are stored in fat and when you lose weight, you can ironically get higher levels in your blood as it's released from your fat and that can impair your cognition and do all sorts of terrible things.

So you got to eat particularly healthy, high fiber diets when you're losing weight because you want to take those toxins, grab onto them, get out of your body. But no, no, not toxing in the first place. That's always the best.

Jane Rogers: Yeah.

Dr. Michael Greger: And then there are safer ways to lose weight. I've got videos about that on nutritionfacts.org.

Jane Rogers: Speaking of lifestyle and cooking, what kind of cookware are you using? Because you don't want stuff with those forever chemicals like with the Teflon.

Dr. Michael Greger: Absolutely not, right? We want to stay away from nonstick surfaces. Probably stainless steel is probably the safest. We don't want to use aluminum cookware. There's a whole long list. I've got a lot of videos on various cookwares and utensils and ways to reduce our exposure to, you know, plastics, chemicals, etc. Unfortunately, I got to run to my next interview. I'm so sorry.

Jane Rogers: Okay, Michael. Thank you.

Dr. Michael Greger: But thank you so much and keep up the great work.

Jane Rogers: Thank you. T

Dr. Michael Greger: This has been such a pleasure.

Jane Rogers: Keep up the great energy and the health.

Dr. Michael Greger: Indeed. Thanks so much.

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