

You're going to love today's episode because you're going to learn how to make Alzheimer's disease optional without resorting to drugs. We go really deep on a bunch of different things that you can do. The cool thing is it's not just about Alzheimer's, it's about what you can do to make your brain work better even if you're years away from even thinking about Alzheimer's. If you want to hack your brain, you want it to work better, you want it to work better now, this is the show for you. Listen through all the way to the end and you'll just get a constant flow of new information that's helpful for you.

You're listening to Bulletproof Radio with Dave Asprey. Today's cool fact of the day is that the same chemical that makes you happy when you hug, makes you attractive to dogs. Researchers in Helsinki at the K9 Mind Research Project found that oxytocin makes dogs interested in smiling human faces. That if you have that cuddle chemical in your system, it makes angry human faces seem less threatening. You can scowl at a dog if your oxytocin levels are high and the dog won't be afraid of you, but if you look mean at them and you don't have oxytocin they'll want to bite you.

Oxytocin is the chemical in your brain tied to affection and trust and community building. To dogs, it's probably one of the reasons they can work with us the way they do. The test went like this, each group of dogs was shown smiling faces and angry faces on a computer screen, because yes, dogs use computers. Each dog was tested twice, once under the influence of oxytocin and once without and the dogs eye gaze and pupil dilation was measured.

This was a first of a kind test. It shows that our best friend's dogs form relationships the same way that your actual best friends do. This is why you should never kick a dog. Dogs are nice. I like dogs. My dog's named Merlin. All right. That was your second cool fact of the day.

All right. Before we get into the show, you might not know this, but Bulletproof brain octane, which is that amazing oil that turns into ketones when you use it part of Bulletproof coffee, you can get it in a 3 oz bottle you can refill and take with you on the road or you can get it in new travel packs. These are single-serving little foil packets, kind of like a ketchup pack but cooler looking, that let you just throw it in your pocket, throw it in your briefcase, throw it in your purse, and take it with you. It's totally changed my travel life.

Go to bulletproof.com and get one of the things that let you take it with you. I put it on my salad, I put it on my sushi, pretty much if I go out to eat at a restaurant, I pour some brain octane on there so I don't get the food cravings that cause when you don't have enough high-quality fat in your diet.

All right. Let's get into today's show. Today's guest is Steven Masley, who is a medical doctor. He's also a big fan of good fat. In fact, he wrote several books on topics really close to my heart like "Ten Years Younger" "The 30-Day Heart Tune Up" "Smart Fat" and we're going to talk today about his newest book, which is called "The Better Brain Solution." It's all about improving cognitive performance, talking about your brain preventing memory loss.

Steven, welcome to the show.

Steven: Dave, I'm delighted to be here.

Dave: Yeah, we've known each other for a while through our friend JJ Virgin and Michael Fishman. It's been a pleasure to just get to socialize with you and now to get you on the show to talk about brains because there's a small group of doctors who are really focusing on the deep science of brain. Guys like Dr. [Amen 00:03:00], guys like you. I'm honored to get to have you on the show and I want to know given that you're also a fat guy and a heart guy, what's turning you into a brain guy?

Steven: Well, our clinic, we measure 100 aspects of aging. We look at how nutrition, food, fitness, all these things, stress, how they impact our brain. We've found that the same things that improve your heart function and help you shrink artery plaque, improve brain performance that increase your brain-processing speed by 25 to 30%. We've actually published that people can have a dramatic improvement in brain function. I'm really excited to get to share that.

Dave: I've talked about how I've raised my IQ more than 20 points. A lot of traditional sort of white lab coat neuro science people say that's not possible. What's your take on it? Can we really raise our IQ by some meaningful amount of points?

Steven: Well, I think there's actually pretty good data now that we can increase our brain IQ a few points. I think the thing that impacts our productivity and the thing that puts us at risk for memory loss isn't even those IQ points we can increase, it's our brain processing. How quick is our brain? How well do we process information that makes us more productive, less forgetful, sharper, quicker. Yes, I totally agree we can boost IQ a few points, but more importantly, I think we can get a big jump in productivity and brain functioning.

Dave: It's funny because IQ isn't that good of a measure anyway, compared to all the other things you could do. It's just the most famous measure. Dr. Amen said, "Well, I've seen people with metabolic problems," specifically in that case it was around toxic mold, they'll lose 15 IQ points, they fixed the problem, boom, they get the IQ points back. Maybe they were always there but they were not tapped into. They were locked. They had been taken away but they at least were present at one point. Do you see this happen as brains age or when people get toxins that their perceived intelligence goes down? What happens in a brain that isn't working right?

Steven: Well, I mean as we age we lose a little bit of speed. That's, I think, a normal process. What's not normal is like if you get toxins that impact your brain or you're in nutrient deficiency or you really eat the wrong foods and you poison your brain then you have your function plummet. That, you can get back. We can always get back, I think, the brain fortunately has some spring and in contrast to what they told us in medical school, the brain can rebuild and reform and grow. We've actually shown that 80 year-olds can increase the size of their brain if they do the right thing. I'm in complete agreement with you.

Dave: Which drugs do we need to take?

Steven: I don't know that we need very many drugs.

Dave: I was hoping you were going to laugh.

Steven: My goal in my clinic is to get people off most of their drugs.

Dave: Exactly. It's funny because the way, especially in medical schools, where the first line is sort of what's the medication for that? What you're talking about is lifestyle intervention which is awesome and that's why I like your book. One of the things that happened in my story is that in my mid 20's I made \$6 million. I ended up losing it when I was 28 and it was a really stressful time in life.

I was living in a house with large amounts of Stachybotrys, the toxic mold. I had high mercury levels and my brain just stopped working to the point that I went to the doctor, "I can't remember my meetings." I felt like I had early onset Alzheimer's or cognitive something or another. I basically had an old person's brain. I was fortunate I got to recover that because I spent a long time starting at that time, I started working with an anti-aging research and education nonprofit. The guys I was learning from were 88 years old and they were fixing their brains. I'm like maybe I could do this too. It totally restored my ability to function.

In your book, though, this is 20 years later, you've got a five-step solution to change your brain. No one had a five steps thing back then so there was a lot of what the heck am I doing? Can you outline the five steps for people listening right now can say, what are the big things that matter?

Steven: The big things that matter one, food. I like food and I want to eat well, but there's foods that improve our brain function and foods that hurt it. Number two would be nutrients. There's some specific nutrients we've got to add and a couple more we could add that'll actually give us some little extra boost. Three is for fitness. Your physical activity is so important for your brain. I think I can't emphasize that enough. Four is stress management that if we have profound unmanaged stress our cortisol's shoot high and five is toxins. There's really toxins out there that really hurt the brain. I mean I think the brain is one of the most sensitive parts of the whole body in its identifying some of these specific toxins and avoiding them.

Here's the key, when people study just one tiny aspect of this, they might see a little improvement. They could argue over whether it's significant or not, different scientist studies. When you add all five parts together, it's synergistic. Wow. Now you get a big boost, a dramatic improvement and that's what studies, I think the latest study like the Finger Study out of Finland, it's showing that when we add these different aspects all together, we get a dramatic improvement and we don't have to argue and quibble about the little parts whether they're really significant or not.

Dave: That was, it's funny you sort of read my mind on what my next question was going to be, it's that I get this a lot; how do you know that what you're doing matters? Which one of them is the one that's important? You've got five things. It sounds like you can't say which one is the most important.

Steven: It's tough because the programs that only try one, don't get nearly as good a results. I mean the analogy I always use, if you're going to climb 20 feet up in the air on a 20-foot ceiling to change a light bulb and you've got four or five prongs to the ladder, which one do you care about? You care about all of them! It's not which is the most important. The ladder is coming down if one goes out.

Dave: I like the analogy like I'm going to invent bread. I baked the water. Nothing happened. I baked the yeast. Nothing happened. I baked the flower. Nothing happened; therefore; there is no bread. Sometimes in biology we have systems instead of sole components, right? How did you come up with these five things? Just walk me through the path of discovery.

Steven: In our clinic we make recommendations. It really started back almost 20 years ago when I really looked at a comprehensive program to transform lives. I probably read over 3,000 articles. I'm definitely a nerd. I like studied, I researched, I identified what steps would really work. We put them in our program and over the last 15 years we've had over 1,000 people go through the program. Now we can look at of the hundreds of people who have shrunk their artery plaque, got off their meds, improved their brain speed and performance, what predicts the improvement and that's really what "The Better Brain Solution" is about. The research we've done, what's been shown to work, what are the critical steps that improve your brain? That's really the focus for these five steps.

We've looked at them. We've researched them. It works. I mean we've got published data that we can really help people. I'm really thrilled to get to share this.

Dave: You also talk a lot about memory loss and diabetes. I was pre-diabetic. My fasting blood sugar was 117 in my mid 20's.

Steven: Wow.

Dave: I was high risk of stroke and heart attack too. I was old when I was young. That's why have such a zeal for what I do because I don't want to go back to that because it sucks to get old with the diseases that we used to think were part of being old. They don't have to be.

What, specifically, around blood sugar and diabetes, why does that affect your brain? Because a lot of people don't know this.

Steven: Well, that's such an important question because I think a lot of people know that diabetes impacts their heart attack risk but not their brain. Here's the amazing thing. When our sugar goes up, insulin pushes to push and store that energy in the cell. Insulin

is the storage hormone that stores sugar in ourselves. If we keep eating too many refined carbs, we're not active enough, we're nutritionally unfit, any of those or all of those, our blood sugar goes up, our insulin goes up and eventually the cell is full. It can't store anymore energy and it becomes resistant to insulin's message.

When we look at brain cells when the body becomes insulin resistant, the brain cells are unable to utilize glucose sugar as energy. When you do a functional MRI and you look at a PET scan of the brain and you try to look at the brain burning energy like fuel, nothing's happening. When an insulin-resistant patient, someone with diabetes, it's just quiet. The brain is dysfunctional. Our brain cells become dysfunctional and they're at risk if that's prolonged of dying.

Two, here's the really weird thing, there's an enzyme that removes insulin. Because if our insulin was too high and our sugar levels drop, we could have a seizure for 100,000 years that means someone would eat us while we're down on the ground. The same enzyme that removes insulin removes beta amyloid and beta amyloid is the protein that forms this sticky inflammatory protein.

We have sugar and that means we're not able to remove beta amyloid when we're eating too many refined carbs. That's a really big problem to think that half of baby boomers and 30% of all adults are insulin resistance and they're growing beta amyloid, the protein associated with Alzheimer's disease in accelerated rate. That's a big problem. That's why diabetes rates are skyrocketing and that's what causes Alzheimer's and memory loss rates to skyrocket.

We're predicting that the rate of Alzheimer's disease is going to double 200% increase in just the next 12 to 15 years. On a national level it's terrifying, but the good news is we can stop this.

Dave: Yeah, if you and I and this group of other people working in this field do our jobs right that ain't going to happen. Seriously, it's not that hard to prevent this from happening. It's just a matter of knowledge that we already have getting out there. It doesn't require new discoveries, right? We know enough to fix it, do you agree with that?

Steven: I totally, yeah. I think we can prevent probably 90% of memory loss and Alzheimer's disease just dealing with blood sugar alone without the other steps we could probably get rid of 60%. I agree with you. This is a national disaster unless we make a change. I don't foresee that happening with traditional healthcare.

Dave: No, it's not going to happen, but we can make Alzheimer's mostly optional. There's probably a few corner cases, especially around traumatic brain injury, or something, where maybe you've just had enough damage, it's going to take heavy lifting to fix it. For the vast majority of people listening who are 50+ worried about Alzheimer's, well let me ask it this way, if you're in that category, all right. Either my parents are there or I might be getting there to the point where I just start paying attention to it, how much work is it to do this stuff? How many hours a day do I need to spend? How much money is it? Walk me through it, how hard do you have to work?

Steven: I don't think it's that hard to prevent it.

Dave: What if you already have the beginnings of it?

Steven: Easy steps, "Better Brain Solution." Now if you're in the early parts, basically by the time you're already noticing memory loss, your brain has shrunk. I mean it's basically shrinking like a grape to a raisin. The longer you wait, the harder it is to change that. Someone with Alzheimer's, I have a five disease, I think we're looking at more something like a 30, 40 step plan. A lot more steps, a lot more expense, harder to do.

My emphasis is on preventing it or if someone's mild, getting them out of it and getting that boost, that 25, 30% improvement in their brain function. If you really wait til you really disabled, dementia, Alzheimer's means disabled with memory loss. That's pretty tough. I still think we can reverse that but we're talking like a 10,000; 12,000 dollar workup. 35 steps to follow. I think we can make improvements on it but I'd much rather have prevented people from getting there, or pick up the ones who have just, I'm feeling a little forgetful, subjective impairment not disabled impairment. I mean I think we can help so many people and we've got to make a better impact.

Dave: How bad are French fries?

Steven: Fried sugar and toxic oil. I mean like them, but yes I like sugar too but I just try.

Dave: And heroin, right?

Steven: There's just some things that are toxic.

Dave: Yeah, heroin is good except well, we know not to use that. Just because you like it doesn't mean you have to use it.

Steven: Yeah. I mean it's like French fries would be worse than eating table sugar with a spoon.

Dave: Well said. This is one of those things that is so critical and so easy. Look, if you care about your brain and you don't want to get Alzheimer's disease, when you go to the restaurant, if it says fried, it's not food so don't eat it. It's that easy. All right.

Next question for you. You have a choice, something made out of whole wheat flour and fried food, which one would you eat?

Steven: Neither. I mean flour by itself, I don't see any difference between any time you take a flour, whether it's white flour, whole wheat flour, it has the same glycemic table load as sugar. Right there it's just harmful. Now fried food, I mean you could be frying it in like avocado oil and you've only heated the oil for like two minutes and it hasn't been damaged yet, but most fried food is just basically it's embalming fluid. It's hydrogenated trans fat and you're being embalmed when you eat it. So I mean neither are good.

Dave: Neither are good. I'm always looking at promising treatments for Alzheimer's disease. I have a brain that functions better than it ever has in my life. My hippocampal volume is 88th percentile, but I'm still I don't want to go back to the way I used to feel, so this is like a hobby at this point rather than I'm adjusting something.

Steven: Yes.

Dave: We know that having ketones present has a very powerful effect on Alzheimer's disease. Anything you can do to raise your fat-burning molecules in the body helps. I've also looked at intra-nasal insulin as probably the second most effective treatment for Alzheimer's after ketones. What do you think about it? Have you used it in your clinic or come across just the cognitive impacts, not the systemic impacts of that?

Steven: Well, I mean I'd really like to see some long-term data on that. I'm not a big fan of upping insulin levels. I can see that it would help potentially improve brain sugar on glucose levels, so I can see in theory why there might be some attraction to that. I'd much rather someone uses MCT oil and gets their ketones from doing a partial fast a few days a week, skip breakfast, have your Bulletproof coffee in the morning instead of breakfast. I'd much rather see a partial fast several days per week, add some extra MCT Oil to get your fats up. To me that's a much more effective treatment than using intra-nasal insulin.

Dave: I will admit that I tried intra-nasal insulin a few times while fasted to see what it would do for my brain. It's a pretty nice cognitive enhancer but like you said, if you have insulin levels that are high all the time in your brain, you aren't going to have your insulin-degrading enzymes working very well. If you did that every day you might not like the levels of plaque that you build up over time, right?

Steven: Yeah. Yeah, so you exactly got my concern. Yes, you might in the short term be sharper, but in the long term are you growing more beta amyloid? I mean maybe not, but no one's studied that. I'd like to see them study it. In the meantime, do something we know that's a slam dunk works.

Dave: What about nicotine? Smoking we know is going to give you all sorts of brain problems, but nicotine itself seems like it does some interesting things for blood flow. Have you seen any studies or anyone in your clinic who uses nicotine, maybe to lower their risk of Alzheimer's, even though smoking raises the risk of Alzheimer's?

Steven: The perception is nicotine increases focus in your ability to pay attention. Actually, when we've done testing on smokers, we've noticed that on average, a smoker has a higher ability to focus and pay attention, but their executive processing speed drops. It's a playoff. Yes, you can focus better but your ability to process information and do executive thinking and problem solving decreases and overall, neurocognitive function dropped. Yes, motor speed went down.

Dave: That's when they're smoking, though, right? Because they're getting carbon monoxide and all?

Steven: Well, yeah. They're getting some. I think most of it is probably- yes and there's tar and there's other chemicals in there. There have been studies that maybe nicotine could I mean but I have found, at least for people using tobacco on a regular basis, yes their attention goes up but more importantly, more functionally importantly their overall cognitive performance seemed to drop.

Dave: That's a huge thing. I would feel really comfortable if a family member came to me and said, "Look, I've just found out I have Alzheimer's." I would be like, maybe you should try a nicotine patch because it might help to turn things back on. There's some very interesting effects there separate from smoking or even chewing where you get all the other crap that's in tobacco that's bad for you. That's cutting-edge stuff and there's some in reductions and inflammation that can happen from that function.

That's something that's very controversial in the medical field because we have this big anti-smoking in the idea that tobacco equals nicotine even though medically nicotine's not the same thing. It sounds like you don't have strong data on that one yet.

Steven: I don't. If someone had Alzheimer's I would be willing to try a whole bunch of things and see what worked. I agree with you there.

Dave: What about caffeine? Mother Nature's other smart drug?

Steven: Well, caffeine does clearly have some improvement in brain processing speed and neuro function, but coffee's even better for you. Because even decaf coffee has shown to improve your brain function. If you do caffeine and decaf, well caffeinated coffee, it's even better. Yeah, there is, I think, when we really look at the data so I looked at almost 15 studies globally that looked at caffeine intake and cognitive function, executive performance, memory loss. They treated people who had memory loss. I think the overall take is it's a J shape which means a little bit of coffee is really good for your brain. There is a point where there is just too much. A pot is clearly too much, it's not going to help, it's going to make it worse.

In fast metabolizers, I think two or three cups of coffee a day is great for your brain. In slow metabolizers, probably not more than two, one or two cups of coffee, I think is good for your brain. It's actually good for your heart too if you use those same dosage regimens. We do have to, I think there's that little distinction how well you metabolize it. You can do genetic testing for that, but most people just know it intuitively. A little coffee's good for you.

Dave: When I read, probably the same study as you did, as I was writing Headstrong, I actually have been doing two cups of coffee a day since I came about Bulletproof coffee. I do one cup of Bulletproof in the morning and maybe sometimes Bulletproof always the same beans but maybe black, maybe not at lunch. Then after that I switch to decaf and I was sort of forced myself to make the habit of drinking two to three cups of decaf. I do one after dinner, one mid afternoon. As long as it tastes good, like it's good decaf, I'll plug my own there because it's lab tested and all, but I actually noticed a difference.

I actually started to like it and look forward to it, whereas my entire life I'm like blah. The studies did show the black stuff in coffee is good even without the caffeine.

Steven: Yeah, I mean those flavonoid pigments have a lot going for them. I mean flavonoid, they're in berries, in dark chocolate, in coffee and green tea too. I try to have two cups of coffee in the morning and then I try to have a cup or two of Matcha tea for the extra thiamine in the afternoon.

Dave: That is an awesome recommendation. Green tea flavonoids are important. In fact, we just came out with something called polyphenomenal, which is ten different kinds of polyphenols in capsules that include some green tea. I also drink Matcha when I get a chance. The idea here, and the recommendation that I would make for people listening is lots of herbs, lots of spices, chocolate, coffee, tea and probably not red wine, though, even though it has some things in it because of the alcohol. What's your take on getting your flavanoids from wine? Should people be doing wine because it's "good for the brain" or not doing wine because it's got alcohol that shrinks the hippocampus? Where do you come?

Steven: Well, different types of alcohol, different effect. Clearly, I don't get hard liquor and beer have no benefit for your brain and in excess they're definitely harmful. I don't see- so sorry, for those beer and bourbon drinkers. Apologize. Just ruined your day. I mean that's the bottom line. I guess if you do just keep it moderate. Red wine, though, I think there's a little more controversy there.

Most of the studies I've reviewed, and I've looked at least a dozen studies that looked at red wine intake in France, in Europe, in the US, in New York, in Canada. If you're drinking one or two servings of red wine with dinner, could have benefit. Some of them have even showed there's no drop in the hippocampus size on imaging, but I mean alcohol is a double-edged sword for anybody.

A lot of people cannot drink one serving a day. They have one and it ends up with a bottle and that's absolutely harmful. It's really hard to say, control yourself like that. I'm okay. I can't say the evidence is conclusive. Most alcohol minimize it, avoid it. Red wine, I mean that's one area I'm thinking one serving a day with dinner might be a good thing for the brain but we still have more research to do on that.

Dave: Yeah. It's a tough call. I enjoy wine and one of the things that we know is bad for your brain is glyphosate. Some studies have shown that pretty much all California wine, including organic, is contaminated with glyphosate. Then there's the notion of these fermentation toxins that also inhibit cognitive function. American standards are much more lax than European.

When I drink, I'll drink European wines even though I used to live in California. Sorry, my Napa wine friends. There are some good California wines, but most of them aren't tested yet. I usually go to my friends at Dry Farm, you can go to, let's see, Bulletproof.com/wine. That's actually the stuff that I'll drink when I'm drinking, but I'm still, I'm not confusing myself but I'm doing it for my brain or that it's good for me, I just

enjoy it. I would encourage, I think like what you're saying, it's controversial, it may be okay, it may be not harmful but probably not something you want to do a bottle of, right?

Steven: Absolutely not.

Dave: How much do you think?

Steven: Now, another pigment that's really good for you, I got to throw in there, is greens.

Dave: Oh, yeah.

Steven: We haven't mentioned greens yet and I think of all the foods, probably the one food that has the biggest bang for when you eat them, if people eat one cup of green leafies a day on average, their brain is 11 years younger than someone who eats none. 11 years, I mean that's a lot. I think people should be eating three cups of greens a day and hopefully one of them is like cruciferous vegetables too.

I'm definitely into another pigment. I mentioned blueberries, dark chocolate, coffee. But greens should really be in that conversation on the foods we want to add.

Dave: All right. This is going to be a fun question for you. I'll preface it. I don't think kale is nearly as good a super food as coffee. When I eat kale, I tend to get, especially raw kale, I tend to get pain in my joints. I looked into the plant defense systems. The polyphenols and flavonoids that we just talked about are good, those are plant defense systems. Caffeine, nicotine, plant defense systems. These are things that we can use, but a lot of plant defense systems can kill you. They're there to keep you from eating the plants.

When I try to give kale to my sheep, they spit it out. They don't want to eat it. Same thing with beet greens. These are things that people can eat, but they're higher in one of the plant defense systems called oxalic acid.

Steven: Yes.

Dave: I don't know if studies of oxalic acid in Alzheimer's but I do know for kidney stones, joint pain and things even vulvodynia, just painful pain in the sex organs for women. It's a problem. What do you recommend people do for the types of greens or for the preparation of greens if they want to eat a lot of greens?

Steven: Well, usually like blanching them or lightly steaming them. If you overdo it and they're soft, you've lost the cancer-fighting abilities disappear when you eat them soft and yuck. I actually think they're easier to digest if either blanched or lightly steamed or lightly sauteed. Obviously, don't overdo it.

There are people who clearly have food sensitivities. I mean look at the nightshade group. Generally speaking, lycopene in tomatoes are really good for the population but there's definitely certain people out there who react to them. If you react to it, I mean

whether it's dairy or gluten or nightshades, I mean if you react to it you have to avoid it. I think everybody's got their own unique sensitivities. Some people are sensitive to a lot and some people are sensitive very little so I think it varies a great deal.

Dave: It does. If-

Steven: I actually think they're easier to digest when they're lightly cooked than eating them raw. I'm not a big kale fan when it's raw, but if I saute it with a little olive oil and garlic, I'm in. I'm going for it.

Dave: Yeah. I'll eat some too if it's cooked but I won't eat masses of it. The little hack there that I came across when working on the research for my last book was that if you eat a little bit of radish or a little bit of raw, whatever, broccoli, along with the cooked broccoli, even if it's overcooked a little bit that you get the enzyme that's necessary to unlock the DIM indole-3 carbino and all the good compounds that are in there. Is that something that you've considered or something that you make a practice of?

Steven: Well, like that to get sulforaphane to its you need this enzyme for it to work. If you cook it too much it's gone and you're never going to actually get the benefit from that food. I mean some people are just taking a plain supplement. If you're they won't convert it. They'd have to eat broccoli with it.

Dave: Yeah.

Steven: I think it's in those cell walls so as long as it's al dente and you feel a crunch when you bite it ...

Dave: You're still getting it.

Steven: I think you're still getting enough enzyme to make that conversion. If you overcook it and it starts to droop, then it's ruined.

Dave: All right. A good backup plan I'd say, put a little bit of radish on your salad. It's not going to harm you.

Steven: Yeah, or as you said, actually that was pretty insightful. Just eat a little bit of raw with the cooked and then if you really like your vegetables cooked past al dente, I think that was actually a really smart thing to suggest just eat a little bit of raw with it. That would work. I completely agree there.

Dave: This is something that I've been experimenting with. I'll make a pesto. I'll throw some walnuts or pine nuts, although pine nuts have their own issues. We'll say American-sourced pine nuts, anyway. Whatever kind of nuts you like in a little chopper thing with some of whatever I'm going to cook and some olive oil and some brain octane and salt. Then you just eat a little bit of that on everything and then I got the maximum vegetable extraction value I could get. Yes, you could say I'm a little obsessive. Whatever. I don't

care. I like pesto. If I was going to make the food anyway, I might as well just make that little side dish.

Steven: That sounded really good, by the way.

Dave: It's pretty edible. Even my kids will eat it which is a pretty good thing.

Steven: Good pyrometer.

Dave: What are your other top brain-boosting foods? We talked about the polyphenols. We talked about green vegetables. Are there other things that you,

Steven: Well, fats. I mean your brain is mostly fat and it's 40% by weight. One, we need some source of long chain omega-3 fats whether it's wild salmon or sardines or oysters, something we need omega-3 fats for our brain. It lowers inflammation but it nourishes our brain. That's a big part of what our brain is DHA and EPA, especially DHA. If you're vegetarian, you can get it from seaweed extract, DHA seaweed extract. That's essential.

We also just need plain fat, smart fat. For me, smart fats are like avocado. I love cooking with avocado oil. I put extra virgin olive oil on my salads and I drizzle them on food. I think we should be getting at least one or two tablespoons of extra virgin olive oil a day. Nuts, we should be eating one or two handfuls of nuts every day. Dark chocolate, it's got the pigment but it also counts as a smart fat.

Then MCT oil. Your brain cells, even if they can't use glucose, they can use the ketones and the beta hydroxybutyrate that's in MC. Now I think people think of coconut oil is but coconut oil is only like 20% of these medium chained triglycerides that the brain can use. Yes, I think coconut oil is a healthy fat but it's not as potent as MCT oil. I think we need the omega-3 fats and we need the MCT fats and omega-9 fats like from olive oil and avocado oil. I think we need all of those. All of those fats, notice I didn't say vegetable oil and I certainly didn't say hydrogenated oil. Don't fry your food and damage the oil.

I got to say though, when you're having oil, it's got to be cooked at the right temperature because if you overcook it, you turn it into hydrogenated fat. You turn your oil into embalming fluid. That's why for sautéing I would use avocado oil or ghi or ... I save coconut oil for low heat, extra virgin olive oil for low heat or no heat. I think it's very important use the right oils and use them at the right temperature.

Dave: I tend to look at can I cook it with water and almost no oil and add the oil at the end? Because the less you heat the oil, the better it is for your brain.

Steven: Totally.

Dave: It's funny, it tastes better if you add the olive oil at the end because stuff sautéed in olive oil still gets a bitter taste as the oil starts to break down. It may not be harmful yet but it's not as good as it would have been because of things like hydroxytyrosol and

other things do break down before the oil itself breaks down. You want those delicate flavonoids, even if you sauté it, add some more afterwards to get all the good stuff, right?

Steven: Yeah. If I'm going to cook with an oil, I probably cook with avocado because it's got a 520 degree smoke point. Then it's really a gentle subtle oil. Then I can sprinkle on some extra virgin olive oil just at the very end when I put it to simmer before I turn it off.

Dave: There you go. That's such good advice. Now this is actually really cool because you're going to be able to answer this better than any other doctor I've ever talked to. Have you ever seen a commercial kitchen that does that, that what we just talked about, cooking the right oils and adding a little bit at the end?

Steven: I wish I could say yes, but no.

Dave: I know one place, it's in Santa Monica. We do that kind of stuff at the Bulletproof coffee shop, but you actually did an internship at the Four Seasons restaurant in Seattle, which is crazy.

Steven: Yes.

Dave: I mean you're an MD doing this. Tell me about what you learned and why you did that.

Steven: I was doing research on group protocols for helping people reverse diabetes, heart disease, hypertension, cognitive problems. I was one of the first physicians in the country back in the 1990s to see 15, 20 patients at a time in a room had the similar diagnosis and come up with a lifestyle plan to reverse that. At the end of the year, we had all these improvements. We had people who had on insulin shots for uncontrolled diabetes were off all their meds and their blood sugars were normal.

Here is what my patients said to me. They said, food recipes that's all I'll cook. I don't need to know all this information about food. Give me a recipe that's easy to follow. I can find the ingredients in the store and it tastes great and that's all we're going to eat. It was like a light bulb. I said, okay. I got to get better recipes. First, I went to Café Florence in Seattle. I spent a summer working. I took a summer sabbatical and I worked like 50 hours a week in a restaurant just to get some kind of hang of it. It was actually really fun.

I worked really hard three years and they said, "You're a doctor. You wrote cookbooks. You could qualify." I applied. I got in. I spent a year. Now I had to go back to work. I spent three evenings per week, the evening shift, like 3 to 1 am and every other weekend for a year doing a chef intern. It was awesome. That was one of the places I learned that if you're cooking garlic and oil and it starts to, if you burn it at all it gets bitter. When they said it gets bitter you've ruined the flavor and I thought I've oxidized it and I've damaged the health properties.

I learned a lot from excellent chefs about how to prepare food so it tastes great. I always put recipes in my books and that's a big part of my message is let's make it easy. "The Better Brain Solution" has got 50 recipes, delicious, easy to make and they boost your brain function. I love your recipes. It's kind of the same concept. I think that's how we make it approachable and easy for people to follow.

Dave: It's tough because at a restaurant, I say this because now that Bulletproof has the restaurant, I've learned more about this than I knew. The average place, you order vegetables, they give you three spears of asparagus. The reason they do that is the cost of vegetables, especially organic vegetables is high. They don't want to give you too many.

I like to order a plate of vegetables at a restaurant. I'll say if you have good fats, like actual real olive oil that's not cut with canola oil and most of it is. If not, I bring my own brain octane. I pour that on there. Sometimes I'll bring my own butter even and if necessary, just to get some sort of undamaged natural fats in there.

Most restaurants just won't do that. They won't give you enough vegetables no matter what. What do you order? When you sit down at a restaurant and you look at the menu, now that you've worked in restaurant kitchens and things like this, what's your typical go-to meal at a restaurant?

Steven: I look at it the whole menu as I'm not going to usually order an item on the menu. I'm going to look at for a clean, I'm going to look at what would be the cleanest, freshest protein on there? I don't want something that's from a feed lot. It's got to be pasteurized, cage-free wild. That's usually easiest to do probably if it says wild seafood on there that's the easiest to pick.

I'm going to double or triple a vegetable portion. I'm going to ask them to sprinkle some extra virgin vegetable was cooked. I'm going to have them just skip the starch. I don't need the bread or the pasta or the rice. Just I'll usually get a salad with Italian vinaigrette. A salad with Italian vinaigrette. I'll pick the cleanest, best-looking protein on the menu. I'll double or triple whatever other vegetables I see elsewhere. I'd say I'd like these. Maybe if they've got some nuts they could sprinkle some nuts on it for a little crunch, a little garnish, extra garlic, extra ginger, spices and herbs. I'm big, spices and herbs are anti-inflammatory. I think we've got to add a lot more Italian herbs, curry spices, paprika, ginger and garlic to our food all the time.

That's what I usually do in a restaurant. You couldn't do that 10, 15 years ago but today it's so easy just to walk in, pick your protein, double your vegetables, skip the starch, order a salad, boom. I'm set.

Dave: You know if we were going out to eat and you ordered, I'd just say give me what he had but hold the paprika.

Steven: Right. Well, yes. When I actually said that I thought okay, well you would probably skip the-

Dave: Well, the reason for that is it's a nightshade but more importantly, paprika is the number one source of mycotoxins in spices. It's the moldiest of all the spices. Quite often, unless it's a super high-end organic, carefully treated paprika, you might feel different after you eat it and not know why. If it's a paprika extract, that's just MSG. You got to skip that stuff, right?

Steven: Yes. No, I get, the one we use at home- well, in a restaurant, you're right. That would be questionable. At home we've got this special Hungarian paprika.

Dave: Yeah. That stuff is good for most people unless you're one of the whatever, the one-third of people that might be nightshade intolerant to that species. You might be nightshade intolerant but fine on paprika because it's individual, right?

Steven: Yes.

Dave: How fun. Just for people listening, this is exactly what people who know what they're doing, what their brains do at restaurants. Now that you've worked at a restaurant, what is the server going to say when someone orders that way?

Steven: I smile. I'm very polite when I ask. I just, they don't say no, really. I mean if you're in a fast food place, well you probably shouldn't be there. They can't do anything. They could skip the rice in a fast food place or skip the noodles and if you offer to pay, "Can I pay an extra two to three dollars for an extra plate of vegetables?" Fine. In a nice restaurant, sit down, casual dining even, usually they say, "Oh, excellent choice."

Dave: Yeah. They don't give me a hard time anymore. 15 years ago it was like somehow I was putting them off. It's like, hold on a second here. I'm willing to pay you whatever the right cost is for this stuff. It's like we have this deal where you always want to be polite to the servers. The bottom line is, look, this is what is compatible with my biology. It's not meant to be an insult to you. It's not, but here's the deal, this is what I'm going to pay for. Usually servers know too that if you're friendly to them and they're friendly to you, let's see. They like their job better if everyone's friendly to them and they probably get better tips too.

Steven: I'm happy to tip better for them.

Dave: I do too.

Steven: If they'll do something like that, I'll make it worth their while and the next time I come in they want me at their table.

Dave: Exactly. Take care of the people who take care of you is kind of the background message for this. The other trick that I've found is if I look at a server, even at a nice star restaurant, let's say, I need real olive oil. Is that real olive oil? They'll say, "Yes, absolutely." You'll go, "Thank goodness. Because a lot of restaurants put canola oil in their olive oil and if I have canola oil I start frothing at the mouth and I'll fall down right there on the floor and start twitching so it's really important." They go white in the face

and they come back and they're like I'm so sorry, I didn't know. We actually have canola oil in our olive oil. We can't use it for you." I'm like, "Yeah, see. I told you."

I don't actually froth at the mouth, but if they think that and they know it's important, they're not going to tell you what you want to hear, they're going to tell you the truth.

Steven: Yeah. Usually if you throw out the line I'm allergic to it and will probably have to call 911, that'll get their attention.

Dave: It certainly will. Well, it's awesome because you've done more work than I have around actually going out and working in a real restaurant for many hours, which is super cool and just unheard of for a medical professional to do so kudos to you for doing that. Now, I'd like to hear a couple of your success stories. Tell me about a couple of patients who just completely turned things around?

Steven: Just before that, though, I want to say that we've had our average patient gets mentally sharper quicker and improves their cognitive function. We've done randomized clinical trials with average people and their brain processing speed goes up 25 to 30%. That's the average response, not the best response.

Dave: How do you measure processing speed?

Steven: I use the CNS vital signs cognitive testing. It looks at memory, attention, psycho motor speed, executive function. In milliseconds, you can have people go through algorithms and record the time for them to do that. We do this test yearly. We had over 1,000 patients. We've been measuring yearly and we track it over time. We can see them people who don't take care of themselves it's like you give them a slower computer every year and they get more and more frustrated. I like just the opposite. Give them a better computer every year and their brain keeps getting better.

I mean that's really it. We've had a man and a woman, they really come to mind. I had a guy come in once, his brother had died of a heart attack and he was trying to do everything right but he was reaching the point he couldn't remember his staff's names. He went on this low-fat diet, cut out all the fat. Was eating all sorts of tuna. He may have had some toxemia effect as well. He really, people he had known for 10, 20 years, he was having trouble with their names. He couldn't remember things after a meeting.

We put him through our evaluation. I mean his blood sugar was high. His fitness had plummeted. He had mercury toxicity. We really just put him through our regular five-step plan and he had like 100% improvement. Just shocking. Within about six to ten weeks totally restored. His mercury levels back to normal. His cognitive function back up. His blood sugar normal.

I mean that's a pretty short time for someone who thought he had Alzheimer's. I mean he figured he was doomed. We could really turn that around. I mean I've also seen women come in. I have one woman in particular, she couldn't lose weight. She had brain fog. She couldn't think. She had been to doctors. They put her on antidepressants. They

put her on hormones, she was insulin resistant and she just had complete brain fog. We put her through our five steps and I mean she lost 50 pounds. We took her off several of her medications. Her brain function improved 70%. She felt fantastic.

I mean it's really restored. We've had many stories where people were desperate. Here's the amazing thing, they had forgotten how good they could feel. They'd been feeling bad for so long, they forgot what it felt like to wake up feeling fantastic like probably you do and I do every day. When we can restore someone's ability to enjoy life to want to jump out of bed in the morning and get going with their day and feel so much sharper and better, I mean to me that makes it all worthwhile. That's what gives me drive and energy to keep going is helping people who have been down in the dumps for a long time and they say, "Wow, I forgot I could feel this good."

Dave: That's what gets me up in the morning too because I was there. I know what it's like to turn the lights back on. If I can help someone, even just one person, it's such a gift. What would you say to a patient who came in and said, "Well, I've decided I want to eat healthy. I want my brain to work. I've decided to go on a vegan diet"?

Steven: Well, vegan diet. I'm not opposed to vegan diet but to me they've got to add smart fat. I think the omega-3 component is an issue and so they're going to have to take a DHA supplement, but I think everybody is going to make their own personal choices. I don't want to be getting ... if you're going on a vegan diet, you've probably got something other than health that the reason they might be doing that.

I'm going to try to support that person in what they're doing, but ensure they do it as well as possible. We're definitely going to be adding lots of smart, healthy fat and I'm happy to have them eating all those plant flavanoids and pigments. I'm going to be happy that they can still probably drink tea and coffee.

Dave: I don't know.

Dave: It turns out that-

Steven: I'm okay with it provided they get their B12 and I mean you have to get enough protein. You can but it's actually work to get adequate protein on a vegan diet, but you can do it. I don't think you need to be vegan. I think if you're going to add seafood that makes it a lot easier to get your protein. You automatically get your selenium and your omega-3 and other things.

I tend to be more, I would ... I'm not going to push someone who wants to be vegan, but if they wanted to add seafood, I think there's clear health benefits to that. I don't think there's any harm to adding clean other sources of animal protein.

Dave: That was a really well-crafted, politically correct answer. I admire that. No, the things that you and I have more in common in our recommendations in a vegan diet is like, look, a plate covered in vegetables, we can all agree on that. Now if it's a plate covered in starch, which is also vegan, I don't think we would support that very much, right?

Steven: No.

Dave: Right? If it's covered in-

Steven: Yeah, you could have pizza for on a vegetarian diet and I mean what's the point?

Dave: Exactly. Then you also look at the fats. Well, vegetable oil is vegan. Canola oil is vegan. No, those are actually not something you could eat. If you were to go on a diet that was primarily plants but not plant babies, seeds, because you get so much starch in most of those things. Then great, you're better off than most people. Let's just say that. Better off than a standard American diet but you might be lacking a few things.

It's that whole sort of very tribal vegan versus paleo sort of thing. It's not like that. The vegetables are the common element that few people get enough of. Then there's environmental and animal questions about what did the meat eat? For instance, grass-fed versus not. Do you eat seafood and not? There's all kinds of reasons you might choose one or the other, but it sounds like what you're saying is let's all eat a lot of plants.

Steven: Plants and fat and clean protein and lots of spices and herbs and then sprinkle some extra virgin olive oil on it and then maybe give yourself a few MCT oil for some cognitive boost.

Dave: That's going to work for everyone and I'll tell you, you have a little bit of animal fat from clean animals. It'll do things that plant oils don't do. Maybe some eggs. What's your take on eggs?

Steven: Eggs have gotten such a bad line for 20 years. It's pretty tragic. I mean in the end, I mean they don't even increase cholesterol so it was pretty stupid to say. Now, should they be clean eggs? Should they be organically raised and wild and running around eating bugs? Absolutely. Those are the best eggs. Even bad eggs don't raise your cholesterol. I think if they're organically raised and clean and fed the right food and especially if they're free range, I think they're really good for you. They have choline, which is good for your brain and healthy fat and a nice source of protein so I mean I'll admit that maybe 5 or 10% of people are sensitive to egg whites and they can't eat them.

Yes, if you're sensitive, we have to individualize all of our recommendations and so I have to be cognitive of that. If you're not sensitive to egg whites, eggs are awesome food.

Dave: Beautiful. I second that notion. Eggs can be incredibly restorative for your brain, especially if they yolks are runny.

Steven: Not overcooked, yes. Don't ruin them by overcooking your eggs and making it like a hard, yeah.

Dave: Yeah because give me the fat.

Steven: Especially ... yeah.

Dave: If you burn your fat, whether the fat's in egg yolk, whether it's in a piece of bacon or if it's in an avocado, you deep fry it, like okay, sorry you did that wrong. Any other pieces of advice for people who want their brains to work really well right now whether or not they have Alzheimer's looming? Any other pieces of advice that you might have for people who are interested in improving their cognitive function now whether or not they have Alzheimer's as a concern?

Steven: Well, I think there's key things we need, vitamin D, mixfolates, B12, magnesium, a probiotic and fish oil. Those are my top. If you're deficient in those, you're hurting your brain. I think adding curcumin and MCT oil can add additional benefit, but those first six I mentioned, your brain doesn't function well without them so don't be nutritionally deficient.

I want everybody to go out and get their heart rate up, revved up so they have aerobic capacity and to add some strength training. It doesn't matter how many minutes you spend. Minutes is not the key. It's about being aerobically fit and having muscle mass. Our data shows minutes don't count, but being aerobically fit and adding us management. We need to proactively manage our stress. Meditation, using heart math, getting a good night's sleep. I can't emphasize enough that you put your brain at risk if you don't help it to be calm for at least a few minutes a day.

Dave: Beautiful recommendations. One more question for you, Dr. Masley. If someone came to you tomorrow and said, "I want to perform better at everything I do as a human being," what are your three most important recommendations? What would you offer them?

Steven: Wow.

Dave: This can go beyond your medical practice. Just three most important things that matter most.

Steven: Well, love in your life. I mean you've got to be loved. You have got to share love and feel. I mean that connection, I think, is just so important that we have to have out there. That actually, medically speaking, that helps manage your stress too when you're loved. Actively sharing love and having purpose in your life, I think, I can't go without that.

Two, is just the right foods. I mean we have to nourish ourselves. We've got to stop poisoning ourselves with foods that have toxins in them. We need those key nutrients in foods in our life. We need activity. I would put those as my top three. Love and support, the right food, be active. I mean it's amazing what we can accomplish when we have those things.

Dave: Very well said. Your new book is called "The Better Brain Solution."

Steven: "Better Brain Solution."

Dave: All right. Where can people find out more about your work, Dr. Masley?

Steven: Well, they could read the "Better Brain Solution." I mean we've just covered a fraction of what's in here so I love this book, I got to say. They could go to drmasley.com, D-R-M-A-S-L-E-Y.com and I've got free information there and I'm trying to help. My goal is to help people optimize their life and feel fantastic and make good choices every day.

Dave: Well, thanks for your work on helping people see that Alzheimer's is an optional thing. It isn't something you're going to fix with a drug but it's something you can fix with what you put on your plate and a few other things. I appreciate that you've spent so much time in clinic and in restaurants solving this problem. Thanks for being on the show.

Steven: Thank you so much.

Dave: If you liked today's show you know what to do. Head on over to Amazon and pick up a copy of Dr. Masley's most recent book and while you're at it, leave a review for the book after you read it or when you're there, if you've already read "Headstrong" leave a review for that. Authors like Steven and I, we spend thousands of hours putting together information so that you can absorb it in about four hours. It's a labor of love to write a book like this. When you take the time to take 30 seconds to just leave a review, we read those, we notice and it helps other people decide that the book's worth their time.

If you take 30 seconds to say thanks, you get the oxytocin benefits of showing gratitude which makes you smarter and better and stuff. Yeah, that's it. Anyway, just do it because it's nice. On that note, have a great day.