

*Conversations in Tinnitus* with Christopher Spankovich, PhD  
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John Coverstone, AuD  
(JC)

Welcome to *Conversations in Tinnitus*, a podcast of the American Tinnitus Association. The American Tinnitus Association is a non-profit organization dedicated to research, advocacy, education, and support for people who live with tinnitus. *Conversations in Tinnitus* podcasts are an extension of ATA's magazine *Tinnitus Today* – the only publication dedicated to educating the public and practitioners about ongoing research, treatments, and management of the condition.

[music]

JC

Welcome to another episode of *Conversations in Tinnitus*. I'm John Coverstone along with Dean Flyger. And joining us for this episode is Dr. Chris Spankovich, who is an associate professor and vice chair of research in the Department of Otolaryngology, Head and Neck Surgery at the University of Mississippi Medical Center. And now that we've gotten through that introduction, I think we're out of time, so. No, but Chris Spankovich is a very well-respected otolaryngologist, has done a lot of research in the area of nutrition and tinnitus. And, in fact, has an article coming out as well as a summary of some research that he's done, that I performed in the upcoming issue of *Tinnitus Today*. And, so let me start just by saying "welcome".

Chris Spankovich, PhD  
(CS)

Thank you. Thank you for having me. I'm excited to be part of the conversation. I'm looking forward to being on one of your podcasts.

JC

Absolutely, we'll be glad to have you. We decided to actually to have you on the podcast. So speaking as a clinician who specializes in tinnitus and worked with tinnitus; I mean, I have to be honest, for many years, I think our view of dietary factors and tinnitus has primarily been kind of running down a list of some things we know can affect tinnitus – caffeine, alcohol – some of those things that we know can have an effect, and interestingly enough, can have a positive or negative or deleterious effect. So, I mean, we often ask patients, does having these substances enhance the tinnitus or just taking them away sometimes make the tinnitus worse, because it can be either; but you're looking at a little different aspect of it in your research. And rather than me talking about that, well, I'll let you talk about that and kind of tell us what you're finding as you're going through some of the literature and then doing your own research.

CS

Sure. So, there's not a great deal of research on nutrition and its relationship to hearing loss or tinnitus. Back in the early 1960s, we had Sam Rosen, and I think you may have discussed some of Dr. Rosen's work with the Mabaan tribe. And this was some of the earliest work and this work was really fundamental in really identifying that nutritional factors had a relationship to cardiovascular disease as well. And not only just a relationship potentially to hearing. But that's a classic study where Sam Rosen and colleagues went to the Southeast Sudan, and they found this tribe called the Mabaan tribe. And this is a tribe that was very isolated from the modern world. They had really no noise exposure outside of their own singing that they would do or the bleats of a goat. There was very little noise in their environment other than natural sounds. And, in addition, they were very active. They were hunters and scavengers. They ate very frugal, healthy diets and didn't have the noise exposure of the modern world. And they also didn't have the ototoxic drugs of the modern world.

And so they looked at these tribe members and across the age of the population, and they found that the hearing threshold of these individuals were in general – all the way out to the oldest age that they looked at, which were in the early 80s – were well within what we consider to be normal audiometric thresholds. And, so Dr. Rosen speculated that some of the potential factors that were involved in reducing this risk was also there was almost no evidence of atherosclerosis in this population either. And, so he correlated or speculated why these individuals have such good hearing was, one, the lack of noise exposure and, two, just the quality of their diet and their physical activity. So fast forward some time, and Sam Rosen and some of the colleagues ended up doing a case control study where they went into some hospitals – I forget where this was; I think it was Finland – and they took a group of patients, and they put them on an experimental diet. Now you go, "Oh, wow, they're going to put these people on some type of high-fat diet or something like that and see how it affects your hearing." But, no, the experimental diet was the healthy diet. It turns out that the Finnish diet was not exactly very healthy back in the 1960s – lots of fats, lots of cholesterol. And, so what they found was they followed this group over about three to five years and discovered that the individuals that were on the experimental diet – the healthy diet – actually had less progression of hearing loss over that timeframe. And a very interesting thing that they did was strengthen their models, then they reversed the diets of the two groups. And they found that the relationships began to go the opposite direction for those two groups. Now the group that was on the experimental healthy diet started to see less progression of hearing loss compared to the group that was just eating a normal, Finnish diet. And, so this was some of the early work in demonstrating that the quality of our diet – in particular fat intake, cholesterol intake – has some implications for hearing and acquired hearing loss with age. Beyond that, there was not a lot of work, typically in human populations, in the coming decades. Most of the work then – that sort of came along that was looking at nutritional factors and hearing loss – were really looking at supplements, looking at dietary deficiencies. And then, of course, you have some of the very minimal work that's been looked at, like with specific pathologies like Meniere's disease, where you're referencing things like restricting salt intake or restricting caffeine intake, which, as you point out, there's not very good research supporting one way or another that restricting caffeine is going to improve tinnitus or restricting alcohol intake is going to improve tinnitus or hearing loss. Rather, there is a good bulk of evidence now demonstrating the opposite of that. Then, of course, we all know that some individuals and some of us that even have tinnitus may have transient effects of say, caffeine of having a cup of coffee in the morning. Your tinnitus has a little spike to it, or you have that glass of wine in the evening, and your tinnitus has a little spike to it. But that tends to be transient in nature, if it does occur at all. For those patients, it really has to come down to what they deemed to be something that they would prefer. Do they enjoy having a cup of coffee in the morning? Well, then you have to say is that cup of coffee worth me having a transient spike of tinnitus or not? Personally, for myself, when I have a cup of coffee, it causes a little transient spike in my tinnitus. But I enjoy my cup of coffee, so I take the benefits of the coffee that it has for me, and I deal with the transient spike that I know is going to go back down.

JC

Absolutely, yeah, no contest there. Yeah, coffee every time.

CS

So, over those decades between the '70s and more recently into the 2000s, there were a handful of studies that will look at some different supplements in their role in reducing risk for hearing loss or tinnitus. So, folate is one of those things that's been looked at. There was a folate study – I forget what country it was in again – but they supplemented men's diets with folate that's [inaudible] at all from like the late '90s.

And they found that supplementing men's diets with folate saw a decrease in the progression of hearing loss over time. Now, the interesting thing about that is it's not necessarily something that would apply to the United States, because in the United States we have many of our foods that are already fortified with folate and folic acid. And so back then, in this other country – which I'm blanking the exact country it was – their foods were not fortified with any type of folate. And a little trivia for you: What was the first food that was fortified?

JC With folate?

CS Yeah, first food the United States that was fortified with anything?

Or that's fortified with anything?

Dean Flyger, AuD  
(DF) Orange juice, I guess milk maybe.

CS The guess. So, the answer is going to surprise you. It was actually salt. Salt was fortified with iodine. That was the first food that was fortified. So, it turns out again in this country that the foods weren't actually fortified and so the translation of that to the US population may be limited. And then others have looked at other types of supplements, B vitamins in particular have been of interest, and the big sort of collection of nutrients that have been of the most interest is antioxidants. So (with) antioxidants, particularly by the early '90s, there started to be a bunch of studies looking at the role of antioxidants in reducing risk for acquired hearing loss and noise-induced hearing loss and drug-induced hearing loss. And, so we saw a lot of studies come along that were looking at all different types of dietary derived antioxidants, such as vitamin C, vitamin E – even things like Selenium – that can have roles in antioxidant capacity. And then we had worked from individuals like a Katherine Campbell with Dean [inaudible] and other trace chemicals that can exist in our diets that's having some role in prevention of drug- and noise-induced hearing loss. And, so when we look at this sort of wealth of literature, what we have to have an understanding of is that diet is all about balance. So, when we hear about different supplements, and things that may have some protective role, understand that taking really, really high doses of antioxidants every day is just as unhealthy as just having a bunch of free radicals. So, there's a homeostasis. There's a balance that needs to exist. And this is for your every day, not just applying to hearing or tinnitus, but taking in really, really large doses of antioxidants is not healthy for you. You need to have a balance of all those things. So, when I came into sort of looking at all this literature that existed, what I found – what really did not exist at that point – was very much population-based data. There really wasn't any epidemiological data looking at the relationship between nutrition and hearing. At this point, it had really been some case control studies and then animal based work looking at dietary factors and relevance to acquired hearing loss. And, so I have a public health background. Before I came into the world of otolaryngology, I received a Masters of Public Health (MPH) from Emory before I started my AuD program. And so I was doing epidemiological research in spinal cord injury. And by the time I entered into my PhD program at Vanderbilt, I was working with Linda Hood. And Linda was actually at that time – Dr. Hood's working with the Blue Mountain Hearing Study, which is an epidemiological study out of the Blue Mountains in Sydney, Australia. And so she had that data set, and they needed someone to help do some statistical analysis and epidemiological analysis with the hearing part of it. So, we had the idea of looking at hearing in nutrition. And that was sort of my first step into looking at the relationship between hearing and nutrition and that was really looking at specific dietary factors. So, looking at different micronutrients and macronutrients and how they were related to hearing. And

basically the study sort of supported what was in the animal based literature, things like magnesium, lycopene, vitamin C, magnesium, different nutrients that had antioxidants or had a vascular benefit were the nutrients that we found had some significant relationship.

But then there's also a limitation to these single nutrient analysis, because if you throw a bunch of nutrients into a model, statistically, one of those is going to pop up significant just on its own, right? So another way of looking at all of this is looking at dietary quality. And so this is when I then started to move to looking at this relationship using the NHNES data set, which is the National Health and Nutrition Examination Survey. This is a survey that happens in the United States in two-year chunks. And basically they test 15,000 to 20,000 people over those two year periods. They're new people every two years. It's not longitudinal, rather cross sectional. But the population they choose is representative of the non-institutional United States. So from this data set, you can make generalizations to the US population. What exists within this data set is hearing data. There's also data on tinnitus. And there is also data on nutrition. And there is a specific nutrition measure that they have based on food frequency questionnaires, and this is where an individual just sort of fills out what types of foods that they take in, called the Healthy Eating Index. And the Healthy Eating Index is a measure of how well your diet quality meets the USDA recommendations. Now, you'd have to buy that the USDA recommendations are a good recommendation. Those obviously change with time and so that Healthy Eating Index is also changed with time. But, in general, what it's representing is that individual's diets how well they reflect those recommendations and the score is 0 to 100. Zero means that you are not meeting any USDA recommendations and 100 means that you're meeting 100% of the USDA recommendations. And these are things that you sort of basically kind of have an idea of and these are like you're taking a certain number of fruit servings, you're taking in a certain number of vegetable servings per day, that your salt intake or sodium intake doesn't exceed a certain level. And, so there's these components of that Healthy Eating Index, and you get scored on each of those, and they sum up to 100. And the higher the score, the healthier your diet. In the United States, the average score is around a 61 to 63, which is an intermediate level diet.

JC I'm surprised it's that high honestly.

CS Younger people, like teenagers and young adults, tend to have slightly poor scores. And, of course, females tend to have better scores than males because well, women are better than men in pretty much everything. My wife will be listening to this. I got to put that out there. So, I looked at the relationship between diet quality as measured through the HEI on the healthy index, and then with hearing loss and tinnitus. And that's been some of the papers that I've put out in the past 5, 10 years or so. And basically, what these studies have shown in general is that the better your dietary quality, the lower the odds that the individual has hearing loss or tinnitus. And it's not necessarily specific dietary recommendations or saying, "Hey, you need to take in this level of vitamin C or this level of vitamin E," because that's difficult in itself, because there's so much overlap, not only statistically in terms of how these nutrients work, but biochemically, nutrients don't serve one role. So, vitamin E doesn't do one thing. Vitamin C doesn't do one thing. It does a bunch of different things. And so it's hard to really segregate the effects of those different nutrients, and hence why I move things towards looking at diet quality because then you can have more of a realistic conversation with a patient say, "Hey, if you make these quality changes to your diet, eat more fruit, eat more vegetables, not eat more vitamin E. Eat more fruit and vegetables and make these changes. These are things that may reduce the progression of your hearing loss or may have some effects on diminishing the

difficulty that you're having with tinnitus." And understand that when we talk about these dietary effects, we're not talking about effects that have some huge effect size, okay? We're not talking about eating healthy, being physically active, curing a person's tinnitus. We're not talking about curing someone's hearing loss. We're talking about this being a factor in an overall holistic plan that can help diminish risk for hearing loss as you get older and help to affect the reaction that an individual's having to their tinnitus, okay. Because if we can improve your overall dietary quality and your overall health, that's going to improve your overall mood, that's going to improve your sleep, that's going to improve your day-to-day function, and your ability to get out in the world and be interactive and do more things. And as you overall feel healthier, that improves your brain's ability to deal with the tinnitus.

DF And that's the difficult part for to translate research to practical applications. People that have a condition want that silver bullet. They want that pathway to solve the problem or that pathway to cure whatever the malady is, and which is applicable with many things that we go through and up to and including tinnitus and hearing loss. There's no one silver bullet, but the farther along we go with our knowledge and research, the better we can apply that in more of a holistic approach.

CS And that's the same thing when it comes to things like supplements. What we've been talking about so far is mainly moving towards your actual diet, what you're deriving through the foods that you intake, not what you derive through some type of supplements. In general, when you look at chronic disease – not just hearing loss or tinnitus – when you look at chronic disease, and studies that have looked at the application of supplements in reducing risk for chronic disease, the data does not show benefit. Indeed, the data actually shows the opposite of benefit. It tends to go more to the direction of that individuals that use supplements have greater risk or odds for chronic disease. So, there's some classic studies that have been formed in men and women that have demonstrated that the use of supplements actually increases the odds of cancer or increase the odds of mortality of death. And so the idea that you can take just some supplement and that's going to cure your tinnitus or be the magic bullet is unfortunately not true. And it's also that a supplement is not going to simply make up for poor lifestyle, okay? If you smoke, if you drink heavily, if you just eat McDonald's three times a day, and you don't work out at all, taking a multivitamin is not going to compensate for all of that, okay? Where multivitamins or where a supplement can be effective is where there's a deficiency, where there's a need. So a classic example would be someone that's vegan, someone that's eating very healthy. But unfortunately, as a vegan, you don't get B-12 in your diet, because B-12 is derived from animal sources. So vegans tend to have to take a B-12 supplement. And in that place a supplement serves a very critical role because it's representing their only source of that nutrient. Rather, when we talk about the implications of diet on hearing tinnitus, we're talking about really things derived through the foods that you're intaking and eating healthier, and being healthier. And unfortunately, just taking a supplement is not going to correct those issues.

JC And I think that's a really, really important point that people need to realize because they're going to read some of these articles that are in this next issue of *Tinnitus Today*, as well as other things that are out there, and things we may even put out in the future, and they're going to see things like this population was studied, and it was found that eating foods that were high in vitamin D resulted in this and eating foods that were high in vitamin E resulted in this. But the message there is that the researchers are trying to identify those important components, of which there are many, as you have shown in many of your publications; but we have to keep good nutrition in mind, and good nutrition always includes the combination of elements that work together. And nature is better than we will ever be at that. Because certain

elements, certain vitamins, certain minerals affect how others are used in the body, how they are absorbed, how they are metabolized. And if we just go and take one vitamin, as you mentioned, that has a very different effect than if we eat a vegetable that has that vitamin in it, that has these other nutrients, that help our body to use that more naturally.

CS

And it's not only that. It's also that a lot of these supplements only have a specific nutrient in a single form. And there might be eight different isoforms of that actual nutrient in a real food. Beyond that you have all the phytochemicals. You have all these phytochemicals that exists in these fruit and vegetables that we eat that serve a function as well. And as you mentioned, swallowing a pill is a lot different than chewing food, how that goes down into your gut, how it's metabolized, and all the other nutrients that are involved in that; and the fat that's involved in that has effects on how well your body is able to take in these nutrients. Now, a good example is actually vitamin A. If you take vitamin A from a tomato, and it's actually not absorbed as well in terms of its nutrient capacity compared to if you take in vitamin A, canned vitamin A. And the reason why is that canned vitamin A has some oil in it and that oil improves the ability of your body to take in that fat-soluble vitamin. So, there's a lot of elements that come into play in terms of the supplements that you take and also recognize that not all supplements are equivalent. And the ones that are cheaper are going to tend to be very poor quality and likely derived from petroleum products rather than being derived from natural products. They're going to be synthetic materials rather than being derived from more of a natural source, actual foods. And that's an important thing because this whole area is completely unregulated. There's no regulation by the FDA (U.S. Food and Drug Administration) for any of the supplements that you're taking in, so you have no idea really what's in them. And there is a really classic – a great study, wasn't really study but it was a, I guess it was like a thing that the – I think it was New York or something where

JC

Yeah, kind of a survey is what it was, yeah.

CS

They went into GNC, they went into Target, they went into Walgreens, CVS, and they took a bunch of their supplement products off the shelves and had them independently tested. And it turned out the vast majority of them, they didn't have what it said on the label in them at all. It was like the St. John's Wort, didn't have St. John's Wort in it at all. I mean, the Ginkgo Biloba had zero Ginkgo Biloba in it, and these are from places that people buy these things, and that's just simply because these things are unregulated.

DF

Right. And in association, when you look at all of these tinnitus supplements that have been advertised year over year, when you look at the contents of each and every one of those pills, it's always different from one to the other. And none of them are ever clinically backed up to do any kind of good.

CS

And when it arises to something that I'm going to recommend to patients, the only way I would ever recommend some type of supplement would be if there was a randomized placebo controlled trial that shows support of that agent having an impact. That's the only way that I'm going to recommend it. I'm not going to recommend any specific product that you're going to find in CVS. I'm not going to recommend other types of supplemental things, like CBD oils and things like that, until there's some type of study, a randomized controlled placebo controlled study that shows that this has benefit, because we all know how strong the placebo effect is with the tinnitus population. About 40% of individuals that they're just given a sugar pill and they we tell them that, "Hey, this helps your tinnitus,"(and) they'll say, "That helped."

JC

Absolutely. Yep. And so now what is the message for people because we certainly don't expect most people to be nutritional experts. I would probably put forth that we don't teach nutrition adequately in this country. We do have some classes in school and such, but I'm not sure that we really teach that to the level that we should and reinforce it to the level that we should. So given what we're talking about in the uncertainty of supplements and nutrients that people may be pursuing, do we recommend people then do this with their physician, may be that they seek out a dietician and get some advice from them on how they may be should be eating and changing their diet?

CS

Sure. So, don't sell yourself short, first of all, and this is even for the layperson. Most of us know what healthy foods are, and we know what's unhealthy, okay. We know that fried foods are not healthy, including fried vegetables, okay. We know that foods that have high added sugar content are not healthy things, all right. So high glycemic index foods like donuts, okay. We all have a general idea of what are healthy foods and what are unhealthy foods. That being said, yes, it does not hurt to talk to your physician or to talk to a nutritionist or a dietitian about dietary changes. Particularly if you're on certain medications, you want to have that conversation just to make sure some of the changes that might be recommended are not going to have consequences. That being said, the nutrition and dietary recommendations that I make are the same recommendations that everyone would make in general because they're very simple things, okay. We'll get into that shortly. One thing to also understand is your doctor, your physician, your primary care, and or your ENT – they know just about as much as nutrition as you do probably. They do not get courses in medical school, unfortunately, on diet and nutrition. It's not happening, if they get anything, it's maybe a seminar and I took that course with the medical students at Vanderbilt University, for example. And the vast majority of them were not even listening to the talk. They were just on the computer working on other things and just basically studying for the exam and ace it and just move on. And that's the one course they got during their whole four years of medical school was that one seminar course on nutrition. That was it. And many programs don't have that. So understand that though your physician is an expert on many things, that doesn't make them an expert on everything. In particular on nutrition is one of those things that lacks in all forms of medical education, not only in medicine, but also in audiology as well. There's not a significant course that's talking about nutrition and diet and those implications on your health, okay. So, our entire medical education, as well as other health professional education, could use a significant boost on our understanding of nutrition and its relevance to different disorders and health. That being said, here are the recommendations that I give patients. And so my approach to tinnitus is a very holistic approach. I understand that the ear is not separate from the rest of the body. Unfortunately, I think particularly those of us who are audiologists or otologists, we tend to be very ear focused and forget that that person's general health, the health of their diet, the health of their cardiovascular health, their metabolic health, their neurological health, all has implications for their hearing health as well. And so when we move to the section, when I go through a patient, I talk about really five things. I talked about, number one, them understanding the source of tinnitus. We go through their hearing loss or their other auditory effects and things going on with them, and we talk about what tinnitus is and what tinnitus is not, to try to demystify tinnitus. We talk about, of course, the process of habituation, how we can sort of get the brain to habituate to different types of stimuli, including the tinnitus. Then we talk about sound therapy based options. Then we talked about attention. And then the last thing I talk about with patients is lifestyle. And then the lifestyle is where we talk about diet. And when I bring up diet, I don't give a specific set of things that they need to

eat. I give them example diets, so good diets to consider. And this is based on my own work, the work from the current group that's up in Boston, as well as others is two diets in particular, the DASH diet and the Mediterranean diet. These diets in general are also related to healthier eating indexes. And what these diets have is low saturated fat intake, okay, high intake of fruits and vegetables that are not fried or processed in any way, and lower sodium intake. That is pretty much it. Eat more fruits and vegetables, less high saturated fat foods, less high glycemic index foods, and you should be pretty good. And what that comes down to is really eating less white foods. The white foods tend to be the foods that are really bad for you. What I mean by that are white rice, things that have added white sugar or high fructose corn syrup added to them. So white sugars, white potatoes, white flour-based products, okay. What we want to do is take all those things and eat the brown versions of them. So, use brown rice or brown sugar, use wheat-based pastas and things like that in breads and sweet potatoes rather than white potatoes. These brown versions of these foods all taste very good and delicious and everything. They're also lower glycemic index. So high glycemic index foods tend to cause inflammation. Inflammation tends not to be good, okay. So, we want to eat lower glycemic index foods. So things that have added sugars, we want to reduce. Now, that doesn't apply to fruit. At least fruit and the natural sugar that is in fruit. There's a difference between eating just a bowl full fruit. Eating a bowl full of mixed fruit, it's not going to hurt you at all. Now if you add a sugary syrup on top of that bowl of mixed fruit, well, then that's not healthy, okay. So don't say, "Oh, I can't eat fruit because it's high in sugar." No, no, no, no, no. Now if you were saying that you're referring to fruit being fruit juice that has added sugar to it, then yes, that's not healthy; but natural fruit that you are not adding sugar to, you can eat as much as that as you want. Then, vegetables. Multicolored vegetables and different vegetables. So, I'm talking about things like, particularly your dark leafy vegetables like spinach, kale. You want to get in your broccoli and your cauliflower vegetables. You want to get in your carrots and your tomato – tomatoes, I know are a fruit, but – and peppers and get in that mix assortment of varied colored vegetables, onions and all those things because those very colors are bringing those different phytochemicals. And again, you can eat as much vegetables as you want. Here in the United States also, when you were a kid typically growing up we walk in a house, "Hey mom, what's for dinner? Is it chicken? Is it burgers? Is it pork? Is it steak?" It's always so protein centric. And really what we need to change our plate in the United States is that what's for dinner? For dinner's a big salad, okay? To be a huge salad in the middle of the plate that has a bunch of different fruits and vegetables on top of that, and on top that, it's also going to have some seeds and nuts, okay, so we can get some healthy sources of fat. And then your side is going to be your protein and your side going to be, we're going to have a lean cut of beef, we're going to have a piece of grilled chicken rather than fried, we're going to have a small piece of pork, some type of protein, and that protein should be smaller than your fist, that should be your side dish. Your main course should be that big salad, all the different fruits and vegetables and what a very nice olive oil based dressing to help your body absorb all those different nutrients. Okay?

Then beyond that, if you are doing those changes, the last thing you can do is just eat less processed foods. Try not to eat out as much and get fast foods and things like that – even, unfortunately, deli meats or processed foods as well. Though I like a good sandwich once in a while – just like the other person – but also realize these changes do not need to be something that are burdensome, okay. Eating healthy does not mean that it has to be not tasty, okay. You can still get these foods and eat them and eat these good salads and have that side of that burger, or have that small side of that steak and still be able to get those foods that you like. You're just going to eat a little smaller amount of it. And doesn't mean you can't have a burger from a fast food

chain once in a while. You could still do that. That's not going to cause a problem. You just don't do that five days a week. So you have to set the patient up and give them realistic things that they can adapt and that they can change with time. And so you know the saying, "Oh, you got to stop eating all the fast food. You can never have ice cream again. You can never have any sugary things again." I mean that's unrealistic and silly. It's more about, "Hey, right now you're eating fast food five times a week. Let's try to take that down to two times a week. And then we'll bridge it away that you're taking it one time a week and that you're going to be supplementing your foods with eating more fruits and vegetables, more salads, and bringing these things to more of your fattier and more unhealthy foods to smaller levels of intake." Those are the basic recommendations I give patients when it comes to nutrition. I say, "If you want to follow a type of diet – and it's not really a diet, it's more of a lifestyle change – the DASH diet and the Mediterranean diet are good choices to adopt because they're very simple. And great food still, very enjoyable foods."

DF And there's lots of books, there's lots of publications that're easily accessible for a person to do their research and understand how to follow that type of a diet.

CS And the other element to that also is physical activity. And physical activity obviously is also dependent on the individual and what their capabilities are. But physical activity is really just saying, hey, eat healthy and get some level of exercise. Get out and walk. If you can't walk, do rowing, or something that is going to have you moving around and being active, because the more active you are out and about doing things, the less you're sitting on your couch focusing on your tinnitus, okay. So, eat healthy and exercise. It's just like your mom told you when you were a kid. Eat your vegetables and go outside and play. That advice is just as good today as it was back then.

JC And with that we need to bring this episode of *Conversations in Tinnitus* to a close. But we have so much more to talk about on this particular issue with Dr. Spankovich. And so we will invite him back for a follow up episode in the very near future. But we have been speaking with Dr. Chris Spankovich, who is the associate professor and vice chair of research in the Department of Otolaryngology – Head and Neck surgery at the University of Mississippi Medical Center. I'm John Coverstone along with Dean Flyger. Thank you for listening to this episode of *Conversations in Tinnitus*, and we hope you tune in next time.

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The American Tinnitus Association is a nonprofit organization dedicated to research, advocacy, education and support for people who live with tinnitus. Gifts and donations to ATA are used to support research for a cure and other critical missions described on our website at [www.ata.org](http://www.ata.org).