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

[00:00:00] Jane Rogers: I'm Jane Rogers. Welcome back to the *Cutting Edge Health: Preventing Cognitive Decline Podcast*. Today, we get to talk with Annie Fenn. She's a medical doctor. She used to be an OB/GYN, but then she pivoted when her mother got Alzheimer's, just like mine, and she decided that she wanted to help spread the word on how to prevent this disease. It can be prevented. She feels it can be prevented well with nutrition and the food we eat and lifestyle changes. She makes a good case for it. I hope you enjoy this conversation.

Annie, thank you so much for joining us. I'm so excited you're here.

[00:00:40] Annie Fenn: Oh, thanks for having me, Jane. It's a real pleasure.

[00:00:42] Jane: You're doing something really fun, and you're an MD, but you're a foodie, and you are really into that nexus between medicine and how we can use food as our medicine. Tell me how you got started in it. It's a nice niche.

[00:00:55] Annie: Yes. I'm an obstetrician-gynecologist. I'm an OB/GYN physician. I had a practice taking care of women here where I live in Jackson, Wyoming, for 20 years. I did all the things that OB/GYNs do. I was delivering babies and doing surgery. In the last 10 years of my practice, I was focused on menopausal medicine, so mostly counseling women going through menopause, talking about hormone therapy. It was then in my menopausal practice that my interest in brain health was really sparked, and that's because a lot of the women that were coming to see me were most bothered by cognitive symptoms.

People had hot flashes and night sweats and things like that that you would expect. Most of the women I saw were more bothered by the brain fog or the word retrieval problems, or some of the little, detailed memory issues that they were suffering. I started to think a lot about how gynecology, as a practice, interacts with brain health long-term. Then, I did something completely different. Twenty years into my practice, I decided to give it up. I decided to retire to do something else. I think I was just getting a little itchy to use the creative part of my brain.

[00:02:03] Jane: Good for you.

[00:02:04] Annie: I finished college early. I went straight to med school. I moved straight into practice after residency. I never traveled. I never really did a lot of things that young people do, and at the age of 45, I wanted to do something different, and I'd always been a very passionate cook. I decided I was going to get some culinary training, go to culinary

school, and start teaching people how to eat better, because even as an OB/GYN, my gut feeling was that a lot of the conditions that I saw women deal with, whether it be surgery or chronic illnesses, had to do with lifestyle and nutrition.

I just really naively felt like if people could eat better, if they knew how to cook food to make it delicious and make it really easy, then that would just really help prolong their lives. That's how it all began. I was interested, like you said, in that nexus between food and health and lifestyle. I was fascinated by why some communities are healthier than others, why some communities stand out as having a lot of members who have longevity, and they also have a long brain span. It's like a dementia-free longevity. I traveled to Italy. I traveled to Mexico. I went to Culinary Institute of America.

I got some culinary training, and I came back, and I started teaching cooking. I came around to founding the Brain Health Kitchen as a cooking school in 2015 for a couple different reasons. Number one, I was really impressed by the data that was coming out of the medical literature, looking at the link between a certain dietary pattern and how you slow down cognitive problems. We were just starting to see the MIND diet come out in 2015. There were a handful of Mediterranean diet studies on the heels of PREDIMED, looking at cognitive function, not just cardiovascular disease.

We were starting to see that, yes, the Mediterranean diet does reduce the risk of dementia and Alzheimer's later. I found that this to be the most fascinating area in the realm of cognitive health. I started collaborating with my local hospital. We actually had the first dementia prevention program in the country that was community-based here in Jackson Hole, Wyoming.

[00:04:09] Jane: Fabulous.

[00:04:10] Annie: It was a 12-week program in 2014, and we taught people everything that we knew at that time about how to prevent Alzheimer's, and I did culinary classes for that. Then it was around that same time that I was teaching dementia prevention classes that my mom was diagnosed with Alzheimer's. Back then, it was an earlier stage, it was mild cognitive impairment. When she was diagnosed with MCI, I doubled down as a physician to figure out how do we slow this down, can she stay in MCI for a long time. How do you keep it from going into later stages of Alzheimer's? How do we keep her at home? How do we keep her brain active and prevent deterioration?

I went for answers in the medical literature. What I found was a lot of solid data about nutrition, especially dietary pattern, lifestyle, like exercise, and also medical factors that you can do to really help protect your cognitive health. That's why I decided that Brain Health Kitchen was going to be my full-time passion, my mission, to get this information out there.

[00:05:11] Jane: Hats off to you for having the guts to quit an active practice and say, "Wait a minute. I've been to med school, but I want something different." Way to go, Annie. Seriously.

[00:05:21] Annie: Thank you.

[00:05:22] Jane: Yes, very impressive.

[00:05:22] Annie: My story, I think, is typical of someone who has a passion and they don't really know where it's going to lead them. I didn't quit my day job knowing I was going to found a cooking school and be on this path. Over the course of several years pursuing my passion, that's where it all pointed me.

[00:05:40] Jane: BrainHealthKitchen.com. I was reading about all the different things you're doing, and you talked about Thanksgiving and how you were sitting around the Thanksgiving table, and the young people were saying, "How do I protect my brain?" You thought this is a wonderful audience. Usually, we don't think of people starting that young, concerned about cognitive decline. You had a lot of advice for them. Can you share that advice with this audience?

[00:06:01] Annie: Oh, sure. One of my latest missions that I'm really excited about is reaching younger people with all the same information I've been sharing with adults about protecting their brains from Alzheimer's and dementia. If we back up a second, most of the data we have, I'm sure you know, Jane, looks at people at midlife, between the ages of 45 and 65, and what you do in those decades, and how it impacts whether or not you will develop dementia later. That's where the lion's share of all the data is. Now we're starting to see studies that include people in the 20 to 40 age group, which is really important. It makes sense.

[00:06:37] Jane: It does.

[00:06:38] Annie: We have brain health our entire lives. We just don't hit the age of 45 and start taking care of our hearts. We have to take care of our hearts our whole life. It's the same thing with the brain. I'm very interested in the young adults and the impact that they can have, the habits that they can start early that will take them into midlife with excellent brain health that will set them up for much fewer incidences of dementia than we're seeing current days. My advice to the young adults at the table is, number one, know what brain-healthy nutrition is. Just know what it is. The way you start with that is to know what the 10 brain-healthy food groups are, which food groups you should limit or avoid.

It's not a very prescriptive diet. It's more of a choose-your-own-adventure way of eating. You pick the foods on the neuroprotective list that you already love, and you just start

there. Then you add things in and focus on dietary diversity. Then you look at the things that we know accelerate brain aging, even in a 30-year-old, and you try to limit or avoid those things. If you have that, choose this, not that, most of the time, you don't have to be perfect. Then you develop your own brain health pyramid. I like to think of everyone having their very own personalized brain health pyramid. If you start developing that as a young adult, you have solid habits to take you healthily through all of the decades.

[00:08:01] Jane: Tell me about 10 different food groups. Tell me about that.

[00:08:05] Annie: Yes. There are 10 brain-healthy food groups. This was described by the MIND diet. Some of your listeners are probably familiar with the MIND diet. It was the study that came out of Rush University in 2015. There was a MIND diet part 2, a clinical trial that came out two years ago. It was a randomized controlled trial, a follow-up of the study. What the MIND diet was, is a brain-specific spin-off of the Mediterranean dietary pattern. The lead researcher, Dr. Martha Clare Morris from Rush University, was a nutritional epidemiologist for 20 years, studying foods like fatty fish and leafy greens and how they impact brain health.

She came up with this idea that we know the Mediterranean diet will reduce your risk of heart attack and stroke. We know that people that follow a Mediterranean dietary pattern, they live longer and they tend to have less dementia. What if you made the Mediterranean diet specific for brain health based on certain food groups that she had been studying? This is what she did, and her colleagues. They came up with the 10 brain-healthy food groups. That's where it comes from. The first thing she did was took berries and made it its own food group. Berries. We all know berries are good for you. We all know blueberries are good for you.

The reason is, berries, especially the blue, black, purple, all the dark berries, they contain a flavonoid called anthocyanin. Anthocyanin is a bioactive substance that travels to the brain, it passes the blood-brain barrier. It has distinct bioactive properties that block oxidative stress, may even disrupt amyloid plaque formation, do a lot of really good things for long-term brain health, quell inflammation. We know that berries are one of the better brain foods. That's the only fruit that had enough data behind it to qualify it as a brain-healthy food group. The other food group that she took out was leafy greens.

Now, if you picture the Mediterranean dietary pyramid, which I think everyone has an idea what that looks like, at the bottom of that pyramid, are all the plant foods, leafy greens, and vegetables, and nuts, and seeds, and beans, and legumes, seeds, and spices, all those things. What Dr. Morris did was she took leafy greens out as its own food group, separate from vegetables. Because she had data, back then–even in 2011–there's MRI data showing that people that eat a big salad most days, they age with more voluminous brain volume than someone who doesn't eat salads hardly ever.

[00:10:26] Jane: Wow.

[00:10:26] Annie: We already had MRI data showing that the frequency of salad consumption impacts your brain volume over time.

[00:10:33] Jane: I didn't know that.

[00:10:35] Annie: Leafy greens are special. They deserve to have their own food group. It wasn't just one study. It's like a culmination of a lot of research. That's how the food groups were developed. They weren't picked out of a hat. They were based on the long traditional Mediterranean dietary pattern, all the data that came before it, and all these little individual studies. For another example, another food group is fish and seafood. We know fish is good for the brain. Most people know that. Most people know that fatty fish or cold water fish that have more omega-3 fatty acids are particularly good for the brain. It's true.

There are hundreds of studies to support this, that the DHA and the EPA, the particular omega-3 fatty acids in cold water fish, pass the blood-brain barrier. They quell inflammation in the brain. They seem to have a particular anti-inflammatory action in the brain. People that are deficient in these omega-3 fatty acids, they tend to get more Alzheimer's. People that have the risk gene APOE4, they have trouble getting these omega-3s across the blood-brain barrier. We know there's a lot of solid data looking at this particular food group and brain health. Fish and seafood became a brain-healthy food group.

[00:11:41] Jane: What's another one? Because there's seven more.

[00:11:43] Annie: We have berries. We have leafy greens. We have vegetables. Vegetables is a really important one. I'll go into how I changed these a little bit when I wrote up my own food guidelines, because the MIND diet came out in 2015, and there's been a lot of data since then. I did some changes on these food groups. Berries, leafy greens, vegetables, beans, and legumes, very important food group. This includes soy foods as well because soy is technically a legume. Beans and legumes: it's one of the food groups that all the people who live in blue zones throughout the world consume beans and legumes frequently throughout the week.

Definitely one of the blue zones foods. There's a lot of reasons why beans and legumes are brain-healthy, and they're mostly indirect. They help lower cholesterol. They help people maintain a healthy weight. They help stabilize blood sugar. We know that these risk factors for Alzheimer's are obesity, diabetes, elevated LDL cholesterol. A lot of the cardiovascular risk factors and diabetes risk factors also put someone more at risk for Alzheimer's. You have a food group like beans and legumes that it's like so simple. It's

plant-based protein. It helps people maintain a healthy weight. It's helping with their blood sugar, all of these things. It becomes a very important thing to incorporate into a diet.

Another food group that's plant-based is nuts and seeds. Originally just nuts. I added the seeds because a lot of people, as you know, are nut allergic, and seeds give you the same monounsaturated fats and the same flavonoids and all the brain health nutrients that nuts do. The nut food group comes right from the cardiovascular data that told us years ago if you consume a handful of nuts four days a week, like a quarter cup of nuts four days a week, it reduces your risk of heart attack and stroke, period.

Anything you can do to reduce your risk of cardiovascular disease will also reduce your risk of getting dementia, especially vascular dementia and Alzheimer's. It's good for the heart. It's good for the brain. That's why nuts was a really easy choice.

[00:13:45] Jane: What are some other ones? Nuts and seeds. I'm thinking, what are we missing? What are we leaving out of that?

[00:13:51] Annie: Let's see. We have berries, we have leafy greens, we have vegetables, beans and legumes, nuts and seeds, fish and seafood. There's only four left.

[00:13:58] Jane: What's the protein? Nuts and seeds have some, but--

[00:14:01] Annie: Yes. The next one, as our protein, is poultry. In the original MIND diet, and there's a backstory behind this, of course, they chose poultry or chicken, not fried, specifically not fried chicken. We know America loves fried chicken as a brain-healthy food group. There are serving size recommendations for these as well in frequency. It's stated in the MIND diet guidelines to consume two or more servings of chicken a week. Now it's an odd choice. If you looked, there’s also a list of food groups to limit or avoid, and red meat was on that list.

The MIND diet researchers are limiting people's intake of red meat, telling them not to eat more than four servings a week. They felt like fish and seafood is a tough one for Americans. A lot of people don't have access to fish or seafood. They don't know how to cook it. It's just a little tricky. They felt like they had to give them another animal product that was protein-based to make the diet sustainable, to help people follow the diet. Things like poultry, they do contain lutein, choline, which are important brain health nutrients. You get those from eggs as well. It's a little controversial.

There's nothing super brain-healthy about eating a piece of chicken, except indirectly in that it's really important to get enough protein and brain-healthy diet. That's very important because older adults, we now know from some recent data, older adults age better with less dementia if they stay fit and they have muscle mass as they age. In order to have muscle mass as you age, you have to get enough protein.

[00:15:30] Jane: There are ways to do that. I do a protein powder. It's a seed base. It's a plant-based protein powder, all organic. That gives me, what, 40 grams of protein in a shot? That helps.

[00:15:41] Annie: Yes, I agree. You don't have to eat a chicken breast. This is 2015. They came up with these guidelines. They felt like chicken really should have been included, poultry, chicken, and turkey, and so it was.

[00:15:51] Jane: No red meat?

[00:15:53] Annie: Red meat is on the limit or avoid list, along with pastries and sweets–

[00:15:57] Jane: Oh, yes.

[00:15:58] Annie: –and fried food and fast food and butter and cheese and red meat.

[00:16:01] Jane: Are carbs in that group of foods?

[00:16:03] Annie: Carbs are not really considered here, except if they are in a less healthy food group.

[00:16:09] Jane: A potato.

[00:16:09] Annie: No, potatoes are fine. It's not really a carbs or a protein. It's not really a macronutrient equation. They want people to not look at foods more, just look at food groups. I always like to explain brain-healthy eating, like forget about superfoods, even though I just told you berries was a superfood. Forget about superfoods. Think about food groups because all the data we have culminates in saying that it's a dietary pattern that makes the difference. You can take the 10 brain-healthy food groups, and you could eliminate one of those food groups. It's fine. The other ones will make up for it.

It's all about diversity of diet, which supports a healthy gut microbiome, which in terms supports a healthy brain. Within those food groups, you get to choose. You can have potatoes if you want, other than that, the most nutrient-dense ones. When I wrote my book…My book is a cookbook, but it's not a traditional cookbook in that there's a chapter for appetizers and one for desserts, and one for main dishes. I have a different chapter for each brain-healthy food group, like the vegetables chapter. I have a food pyramid that shows you which ones are more nutrient-dense because there's a difference.

Colorful vegetables are more nutrient-dense because they have flavonoids, these plant pigments that are brain-healthy, bioactives. Cruciferous vegetables are special. They have sulforaphane, which is a very potent brain health nutrient. Alliums are a very important type of vegetable. That's all the onions and the garlics and the leeks and things

like that. Those are particularly good. I added mushrooms as an honorary vegetable, even though we all know they're fungi.

I added it as an honorary vegetable based on data out of Italy, Singapore, Asia, Japan, that adults who consume mushrooms twice a week, just a half cup cooked twice a week, they age with less dementia, and in some populations, up to 40%, 50% less dementia as they age.

[00:17:59] Jane: Really?

[00:17:59] Annie: We know there are other things in mushrooms that you really can get from other foods. In that group of vegetables, there's a lot to know, like where are you going to spend your money, where are you going to put your efforts into? I think if you looked at that pyramid, a white potato is not going to rank very high. There's nothing wrong with a white potato.

[00:18:18] Jane: A purple potato or a sweet potato would do better.

[00:18:21] Annie: Yes. If you get a tiny potato, if you get one of the colorful, small potatoes, most of the nutrients are in the skin. You get a higher ratio nutrient density in, say, a purple new potato or red new potato, or even a yellow one. Those are delicious.

[00:18:37] Jane: They are.

[00:18:37] Annie: Those are really delicious. There's tricks like that.

[00:18:39] Jane: Briefly, the name of your cookbook so folks can go find it.

[00:18:42] Annie: Called *The Brain Health Kitchen: Preventing Alzheimer's Through Food*. It's a cookbook. It's meant for people to cook out of it. There's also a lot of information about lifestyle and how to approach this, how to change your dietary pattern, how to dip your toe into it, and follow the best practices to protect your cognitive health.

[00:18:58] Jane: Tell us some more things that when you lead a lecture like you did at your local hospital, helping women who are feeling brain fog, what are some of the top things that you tell them? Is there anything that you would tell them that we haven't already covered?

[00:19:12] Annie: Menopause and perimenopause is a special area of interest. I'm still incredibly fascinated by the perimenopausal brain. A lot of research is looking at this now, like what's happening to women during the time when they're going through menopause, which is a transition that can be on average seven years. It could be as much as 10 years. For some women, it's very abrupt. If they have a surgical menopause, like they have the

ovaries removed at hysterectomy. Women are experiencing menopause lots of different ways, but it definitely changes both the structure and the function of the brain.

People that may be high risk for Alzheimer's later, if we had a crystal ball, we would be able to predict this, but we can't really predict it except for certain gene variants people might carry. Certain high-risk women, it's thought that that Alzheimer's process, the accumulation of abnormal proteins in the brain actually starts during perimenopause, triggered by hormonal changes. There are changes in metabolism too. All women know this. You start to go through menopause, and you gain weight really easily, even though you've been doing everything else the same.

Even though you're exercising and you're on your diet or whatever that is, your metabolism is changing. Your brain is making your body more insulin resistant, giving you this tendency to be more diabetic. What I like to say to the perimenopausal women in the room is perimenopause is also a really great opportunity to identify if you have any risk factors later that could point you down the road to dementia, 20, 30 years down the line. You would need to know that, and you can correct them then. That's when you start getting together your brain-healthy diet, your brain-healthy lifestyle, your family history, get all of those things sorted out, and make decisions about hormone therapy.

We know that some women will benefit by taking hormone therapy like estrogen early in this perimenopausal period. Their brains will benefit from it long-term. Also, to eat a diet that is blood sugar friendly to combat that tendency to be diabetic, that tendency to be insulin resistant, the tendency to gain weight around the midsection. This is what all perimenopausal women go through. You can fight back against it, and the way you do that is by working out, but not just cardio. Strength training is mandatory for every woman over the age of 30 because we need to start building bone, building muscle so that we can have a healthy metabolism later.

This also protects us from Alzheimer's, we're finding. It's a win-win. Also eating a dietary pattern from these, mostly plant-based, brain-healthy food groups that will stabilize blood sugar, lower cholesterol, keep people at a healthy weight, provide a lot of brain health nutrients, and a lot of the brain-friendly fats that the brain needs to function.

[00:21:57] Jane: You and I are walking such a similar path. My mother had Alzheimer's too, and my dad did as well, but it's been a number of years ago. She was diagnosed in 2017, so a little bit after your mom. I found it hard to make any headway in changing her lifestyle at the age of 80. She just wasn't interested. I'd rather go have coffee with my girlfriends than do some things that might have helped her health. Did you have success with your mother, and if so, how? What did you do that made her pay attention?

[00:22:32] Annie: She had MCI probably for more years before we actually diagnosed it. She was down that road to Alzheimer's already, but she was living alone. Her husband

had passed away, and it became very evident that she was having cognitive impairment. It was making daily living difficult. She wanted to stay home, so we did some things that we thought would help enable her to stay home. She just passed away, actually last month.

[00:22:54] Jane: Oh, I'm so sorry.

[00:22:55] Annie: She stayed home the whole time. Thank you. Thank you. It was a long road. It's not the right choice for everybody to keep their parent at home. I'm not saying it's the right choice. It's the thing that should be done. It's what she wanted, and we went to great pains to do that. It was very difficult, actually, to keep her home. Some of the first things I did was I went through her kitchen, I went through her pantry, and I got rid of all of the things that are on my limit or avoid list.

All of the things were identified by the data I was reading, by the MIND diet study, which we should probably note that if you follow the MIND dietary pattern very closely, they had a 53% reduction in the chance of being diagnosed with Alzheimer's within four and a half years. The results were amazing.

[00:23:39] Jane: Wow.

[00:23:39] Annie: They changed people's diets and nothing else, and it was like an eat more of this approach, eat less of that. These people are all entering age groups where they're at high risk for Alzheimer's, 53% reduced risk of getting Alzheimer's after four and a half years.

[00:23:54] Jane: That's fabulous.

[00:23:55] Annie: The people that changed their diet just a little bit, it's hard to change. Your mom, like my mom, they still had a 37% reduction, the people that only followed the diet sometimes. Very, very successful study, which is why we're still talking about it in terms of reducing risk. I went straight to the MIND diet guidelines, the 10 brain-healthy food groups, the 5 food groups to limit or avoid. I cleaned out her pantry. I got rid of all of the expired cooking oils, the oils that I thought didn't have any nutrient value. Most people don't need a lot of cooking oils in the pantry. They need extra virgin olive oil, which by the way, is the ninth brain-healthy food group.

[00:24:32] Jane: Is it?

[00:24:33] Annie: Extra virgin olive oil gets to be its own food group for a lot of different reasons we can go into. People need to have extra virgin olive oil in their pantry, and then something that they can use to cook at high heat, because you want to be careful when

cooking with olive oil. You don't want to heat it up above 375 degrees Fahrenheit. You can cook with it, and cook most of your food with it.

[00:24:49] Jane: Then Annie, what do you use for your high heat oil? That's always confused me.

[00:24:53] Annie: I use avocado oil.

[00:24:54] Jane: Oh, you do? A seed oil. Is that still okay?

[00:24:57] Annie: It is because it depends on how it's processed. I purchase organic avocado oil, and it's mostly monounsaturated fats, and it's cold-pressed. When you take a seed, like I say, a sunflower seed or a grape seed, these are really common seed oils. The seed oil is not like the worst thing in the world for you to consume, but it's also not the most nutritious either. My view is that seed oils, it's not that they're evil, and toxic, and horrible. There are other oils that are so much better for you. Avocado oil, for example, has the right fat profile. It's mostly monounsaturated fats, just like olive oil, just like the Mediterranean diet is primarily a monounsaturated fat diet. It's very little of saturated fats.

[00:25:40] Jane: It can handle high heat.

[00:25:42] Annie: They can handle high heat. I also use nut oils. Pecan oil is one I really like–

[00:25:46] Jane: Really?

[00:25:47] Annie: –if you can find it. Both of these oils, avocado and pecan, are high in polyphenols. Polyphenols are a large class of bioactive substances. Flavonoids fall under polyphenols. Polyphenols in the diet, we know, help protect the heart. They help protect the brain. They're extremely important. This is where extra virgin olive oil stands out above all the other cooking oils. It provides a healthy, robust, brain-healthy dose of polyphenols. Polyphenols are found when you press olives under old-fashioned conditions without heat, and they're very perishable.

That's why fresh olive oil or newly pressed olive oil is a lot more potent than these polyphenols. It may be one of the reasons why people in these countries that consume a lot of olive oil, and they're consuming high-quality olive oil, have some health advantages to those who don't.

[00:26:36] Jane: Do you like olive oil so much that you tell yourself, "I need to pour myself a little quarter cup of it, and I just need to down it every day?"

[00:26:43] Annie: People do do that. I think that's a new fad. There's very good data actually coming out of the cardiology literature showing the nutrient density of olive oil is

amazing. The problem is that most Americans are not consuming enough of it. The average consumption of extra virgin olive oil in a country like Italy is a quarter cup a day.

[00:27:03] Jane: Is it?

[00:27:04] Annie: A quarter cup a day. What do you think it is in the US?

[00:27:06] Jane: Oh, probably a teaspoon.

[00:27:08] Annie: Yes, one to two teaspoons. Exactly. We're not consuming very much extra virgin olive oil, and we're consuming inferior oils when it comes right down to it. Unless you're a foodie, like you or me, and we're going to great lengths to find the best olive oil with the freshest, most recent harvest date from a producer that we know. We're reading the label really carefully. A lot of people aren't doing that. They're just going to the supermarket, they're grabbing something that looks okay, and then they're using it sometimes. Then they're letting it sit in their pantry for a really long time. All those brain-healthy polyphenols are dissipating as they go.

[00:27:38] Jane: You went to her pantry, and you got all that nasty stuff out of there.

[00:27:42] Annie: I did.

[00:27:43] Jane: That probably kept her living at home much longer. She was diagnosed in 2017, and she just passed this year. That's seven years at home. You extended her quality life.

[00:27:53] Annie: Yes. We actually saw a slight improvement in her cognitive symptoms in the first two years.

[00:27:59] Jane: Good.

[00:28:00] Annie: That's because there was one brain-healthy food group that's very controversial that we should talk about. The 10th brain-healthy food group, red wine.

[00:28:06] Jane: Oh, okay.

[00:28:08] Annie: Red wine.

[00:28:08] Jane: Did she like red wine?

[00:28:09] Annie: She was drinking white wine or something, but I made the executive decision that Mom's not drinking wine anymore because she has mild cognitive impairment. If you have been diagnosed with early dementia, especially, you shouldn't drink any alcohol. Go back to 2000, 2005, 2015, even, Dr. Martha Clare Morris included

red wine in the MIND diet study as a brain-healthy food group. That was a nod to all the Mediterranean diet studies. Remember how important it was thought to be in the Mediterranean diet for reducing heart disease?

[00:28:37] Jane: Yes, with resveratrol in there too.

[00:28:39] Annie: Yes. Resveratrol makes platelets less sticky. People are less likely to have a blood clot after they eat. There's been a lot of urban legend about the power of red wine, especially to promote our health, our brain health, our heart health. All of that changed when the UK Biobank study came out. The UK Biobank study came out a couple of years ago. This is a large body of MRI data, like brain imaging scans, over 36,000 MRIs done serially. A group of 36,000 people followed for 18 months, one MRI in the beginning, one 18 months later. That's the earliest you could really see significant changes in brain volume over time.

We talk about brain volume, when the brain starts to shrink over time, which everyone's brain does, but the rate of shrinkage can be indicative of impending dementia. It's a big red flag for a brain that is failing cognitively. We know from the UK Biobank study that moderate drinking, like we thought even 10 years ago, is not good for the brain. It actually shrinks the brain at a faster rate. Moderate drinking is defined as one drink a day for women, which my mom was doing. She would have one drink every night. Two drinks a day for men. That is too much alcohol for the brain to age healthfully. That is too much.

Now we know that now. I had a hunch because I had been reading the papers leading up to that back in 2015. Yes, getting off alcohol, even just one glass a day for someone with MCI, made an incredible difference. Getting her off processed food. We now have data to say that processed food really does erode the health of our brain in many, many ways. We're talking about ultra-processed food, the most processed foods. My mom's kitchen, that was canned soups that were really high in sodium and really high in sugar. It was maybe some of the frozen dinners. She was living alone and didn't cook for family anymore, and didn't really enjoy cooking. She was reaching for convenient foods.

A lot of the frozen foods. She wasn't eating a lot of fish. She wasn't eating a lot of even chicken. She wasn't eating a lot of salads. All those things that take a little bit of effort to prepare, she just wasn't doing. We got rid of the ultra-processed food, the sugary cereal, the Diet Coke, the unhealthy oils, the packaged foods, like the packaged rice mixes, all those things. We got rid of all of that and then just put fresh foods in her fridge, and we got her some help. We weren't there to cook for her. We would have someone come in and help, at least semi-prepare the foods.

[00:31:11] Jane: Oh, that's smart. Very smart. Then, looking at your family history, I know that I look at mine and I say, both of my parents had Alzheimer's. I'm at higher risk. I'm APOE4, heterozygous. I just doubled down on trying to not walk that same path. I'm sure

you find that you are doing the same thing. This is your passion. This is how you are sharing the message with the world. I'm sure personally, it's helping you to remain vibrant mentally–

[00:31:38] Annie: Absolutely.

[00:31:39] Jane: –when you're 80 and 90.

[00:31:40] Annie: It's a win-win for me. I always think that I didn't really choose Alzheimer's to be my passion in life.

[00:31:46] Jane: Didn't either.

[00:31:47] Annie: I had a whole different trajectory with my work, but Alzheimer's chose me. You would have had to hit me over the head with bricks to make it more clear that this is what I should be doing, because I was interested in the intersection of food and cognitive health, and the intersection of community and cognitive health. I was seeing for myself the data that shows that even our simple actions, even consuming that olive oil every day-- By the way, I wouldn't do it all in one go. I would disperse it throughout the day.

[00:32:16] Jane: Not a shot.

[00:32:17] Annie: Yes. Even these little simple actions, they add up to better brain health that we can measure in studies, we can measure on MRIs. We can look at the brain volume of someone's hippocampus, the memory center, and we can see how it behaves after you've changed these foods groups. There's one dietary study. I don't know if you're aware of the green med diet.

[00:32:36] Jane: No.

[00:32:37] Annie: This one is so interesting from perspective, like how what you eat impacts the size of your brain and the size of your hippocampus. Now, the green med diet is very similar to the MIND diet in that it's a spinoff of the Mediterranean diet. Okay, we're going to take Mediterranean diet, but we're going to boost it with polyphenol-rich foods, and then we're going to follow people with MRI data and look at how their brains shrink or don't shrink over time–

[00:33:02] Jane: Oh, fabulous.

[00:33:02] Annie: –which is the gold standard to see how the brain is doing. They had three arms of the study. One arm they boosted with walnuts. It's a Mediterranean style diet, which you also know what that is, but more walnuts. Reminiscent of the PREDIMED study back in the day. Then the second one, they boosted it with green tea. They asked

people to drink three to five cups of green tea a day, very rich in catechins, a type of polyphenol that we know is particularly brain-healthy. We know from population data that Japanese communities, people where green tea is part of the dietary pattern, tend to age very successfully, especially in the realm of brain health.

Then the third thing they did was they gave them a green shake every day. They asked everyone in the study to eat less processed food, especially less processed meat. The worst kind of meat is processed meat when it comes to the brain. Instead, for one meal, most days they had a green shake, and the green part was a microgreen called mankai, which you can't really get over here. It's an Asian little microgreen, and it's a protein-rich green. Think of a micro that you get at the supermarket or the farmer's market.

[00:34:05] Jane: Oh, I wish we could get it. Wow.

[00:34:07] Annie: Yes. You could do the same thing with a protein-rich microgreen, like a sunflower sprout. Would be similar. This is cultivated for its protein content. What they found was that it was remarkable. They found that the more walnuts people consumed, the greater hippocampal volume they had. When they got to a certain amount of drinking green tea, like three cups a day, they had improvements in hippocampal volume.

These individual food groups, they were able to plot out their hippocampal volume based on their consumption. Everyone in the study lost a little bit of weight, were really healthy, but the brain volume data speaks volumes in terms of actually small things like eating more walnuts, drinking green tea, can really impact your brain health.

[00:34:51] Jane: I do my walnuts every day with walnut butter, and it's fabulous. I just grab a spoonful of it. It's wonderful.

[00:34:56] Annie: Oh, that's delicious. Do you make it yourself?

[00:34:58] Jane: No, I don't. I found a company that already soaks the nuts so that they sprout, and then they make the butter out of it, so your body can digest them better. It's Blue Mountain Organics. It's wonderful.

[00:35:10] Annie: Yes. That sounds delicious. I get walnut butter at the farmer's market sometimes.

[00:35:13] Jane: Oh, you do? Good.

[00:35:14] Annie: It's a real treat. Yes.

[00:35:16] Jane: Where are you on green tea? Are you trying to get your three cups a day? Are you a green tea drinker?

[00:35:20] Annie: Oh, yes. I'm a coffee drinker. Coffee, by the way, is a very brain-healthy thing to drink as long as you don't put a lot of added sugar in it or creamers or junk foods basically. Black coffee, there's tons of solid data to say that drinking coffee is a brain-healthy habit up to six cups a day. If you're drinking less than six cups of coffee and you're drinking black coffee, you're doing really well when it comes to brain health.

I'm a coffee drinker and I always have been. I wasn't really all that into drinking tea until the green med diet came out. I started learning more about green tea and why matcha has so many more of these catechins in it than just a tea bag that has green tea in it. I really enjoy drinking green tea now. I drink less coffee than I did. I'll have one cup of coffee, and then I'll switch to green tea most days.

[00:36:07] Jane: Your green tea is matcha tea?

[00:36:09] Annie: I enjoy all different types of green tea, but matcha is probably my favorite. It's also a more efficient way to get brain health nutrients in your tea because when you consume matcha, it's cultivated for its polyphenol content. It's got this huge tradition behind it that it's cultivated to have brain health nutrients in it by being in the shade, and just the way they grow it and the way they harvest it. They harvest the entire leaf and dry it, and pulverize it.

When you're consuming matcha, you're actually consuming the entire tea leaf. When you drink regular green tea or other types of black teas, there's tiny dried tea leaves in the tea bag or in the loose leaf tea, and you're making an infusion, and then you throw the tea bag away. You throw the tea away. There is polyphenols in that infusion. If you're consuming something like matcha, it's way more potent.

[00:36:58] Jane: Now, do I have this right? I was reading that matcha could, unless you're really careful, it could be high in heavy metals. Have you read that?

[00:37:05] Annie: It's true. There are certain parts of the world that are best to source matcha from, and also certain regions in Japan. Some of it came from fallout from the nuclear accident that happened decades ago. There are some tea-growing areas that have abnormal amounts of heavy metals. That's like anything that you buy, really. You have to read the nutrition label and get informed about it, especially if it's a food that you eat every day. If you can have a matcha latte three times a year, it's not going to impact your health at all.

If it's part of your routine, like it became part of mine, it behooves me to know where these products are from, know how they're grown, know if they're organic. Do they have heavy metals in them? Because daily use of these products can really add up to accumulation of heavy metals in your body. Most tea companies that are worth their pennies will have all that information available to you.

[00:37:57] Jane: Excellent. I could talk to you for hours.

[00:37:59] Annie: Thank you.

[00:37:59] Jane: This is fascinating. Thank you. Is there anything that we're missing, Annie? We've covered a lot of ground. Is there anything else you would like to say and relate to brain health and food?

[00:38:09] Annie: I think it's important for people to know that it's never too early to start having a campaign for yourself to eat a brain-healthy diet. It's never too early. Young adults, I'm starting to teach college now. I've taught in medical school. I'm starting to teach brain health nutrition at the undergraduate level. It's very important for young people to know that it's really not too early. We're just filling in the data about how the brain is developing between the ages of 20 and 40. We don't really know a lot about that yet. On the other hand, it's never too late.

It might have been too late for your mom and for my mom who were in MCI or early Alzheimer's stages, because at that point, there may be too much amyloid and tau buildup, too much deterioration of brain volume, just too much lack of white matter, gray matter, all of those things to reverse that process. As far as we know, Alzheimer's at that stage is not reversible with diet or anything else, for that matter. We're talking about prevention. Possibly someone who's like the very early stages of MCI can get some improvement, like my mom certainly did, by cutting out certain things from her diet.

It's never too early and it's never too late. I'll tell you one more study if you're interested, and it was done in people in their seventies, between the ages of 73 and 76. This is in Scotland. They were looking at their brain volume. They were looking at MRI data of their brains. They were on a typical Scottish diet from which I understand is a lot like the American diet, high in saturated fats, high in sugar, high in sodium, not as many fresh foods, a lot of processed foods, a lot of alcohol. They switched them to a Mediterranean-style diet, and they started to see improvement in MRIs within three years. These are 70-year-olds.

[00:39:50] Jane: Oh, wow.

[00:39:50] Annie: In improvement, you're not going to make your brain volume go up significantly at that age, no matter how well you're eating. Improvement is that they had a slower deterioration of brain volume, which is really important–

[00:40:01] Jane: Oh, that's great.

[00:40:02] Annie: –because the name of the game is to have as much brain volume as you can, and then have it just deteriorate very slowly over time. That's what happened.

They had real improvements in the rate of decline of the brain volume over time, just from that one thing, switching from the Scottish diet to the Mediterranean diet. That tells me that the brain, even in your 70s, 80s, beyond, is still very neuroplastic. All the collateral synapses and collateral pathways that you build in your brain from being cognitively stimulated throughout your whole life can really have an impact on whether or not you experience Alzheimer's or dementia.

We're all going to accumulate some amyloid and tau over time, but if you're cognitively healthy, we call it cognitive reserve, all the things that you do in your life to build intellectual capital in your brain, all the things you learn, your emotional intelligence, it's the music that you play or recognize, it's the books that you've read, it's the languages you speak. All this intellectual capital really matters because it makes your brain resilient to any kind of pathological process that you might have. If you have an APOE4 gene variant, it makes you resilient to the impact of that.

It's never too early, it's never too late, and eating a brain-healthy diet is not about being perfect. It's not about not eating Christmas cookies or never having a hamburger. It's not about that. It's about what you eat most of the time and choosing from those 10 brain-healthy food groups. Although I took red wine off, I put it in the Limit to Avoid group in my book based on the data. I actually drink red wine, but I think people should be drinking less alcohol in general. Just following those guidelines makes it really simple. It's a good place to start and just build from there.

[00:41:44] Jane: Annie, you're wonderful. You are part of the reason that we are seeing lower incidents of Alzheimer's in this country. It's because of people like you.

[00:41:52] Annie: Oh, I would love to think so.

[00:41:54] Jane: Oh, seriously. Word is getting out. You're educating people, and information is power, and you're giving us the information we need to stay vibrant as we age.

[00:42:01] Annie: Thank you. Thank you so much. I think people just need the right information. It takes something like 17 years for a scientific paper to trickle down into common knowledge for a non-medical person. I'm trying to speed that up by talking about studies when they come out, writing about it on my newsletter, just trying to get this information out there so people can access it now and really change the way their brains age.

[00:42:24] Jane: How can people find you?

[00:42:25] Annie: My newsletter and my website is brainhealthkitchen.substack.com, and you'll find my latest writings there along with new recipes that I'm coming up with. I

have a community of over 20,000 people there, and it's a proactive, healthy aging community, and it's a really nice place to go and meet some people and comment along the things that we're all learning together. That's brainhealthkitchen.substack.com. I do education on Instagram at Brain Health Kitchen, and I'm on LinkedIn at Annie Fenn, MD.

[00:42:57] Jane: Wonderful.

[00:42:58] Annie: I have a book, *Brain Health Kitchen: Preventing Alzheimer's Through Food*, which you can get on Amazon, you can get at most bookstores, you can get it pretty much anywhere.

[00:43:06] Jane: Annie, thank you. I've loved this. Thank you.

[00:43:09] Annie: Thank you for having me. It was really fun to talk to you.

[00:43:14] Jane: You've been listening to *The Cutting Edge Health Preventing Cognitive Decline Podcast*. Any information shared here is for educational purposes only. Guest opinions are their own. This podcast is not responsible for the veracity of their statements. Do not use any of this information without first talking to your doctor. Cutting Edge Health, LLC, is not responsible for what may happen to you if you use their information in place of official advice from a medical professional. Thanks for listening. Be well.

[00:43:50] [END OF AUDIO]

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