Personalized Care for the Female Brain & Heart
Guest: Dr. Kat Toups

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Dr. Mark Menolascino: Welcome to the Heart Health Summit. I'm your host, Dr. Mark Menolascino, certified functional medicine practitioner and director of the Meno Clinic Center for Functional Medicine in beautiful Jackson Hole. Thank you for joining us. And this is your opportunity to hear from international experts to provide optimal heart health for yourself but also to help you achieve optimal vitality. Today we have Dr. Kat Toups joining us. Thank you so much for joining us, Kat.

Dr. Kat Toups: Oh, I'm so happy to be here. Thanks, Mark.

Dr. Mark Menolascino: Well, let me brag a little bit about you to our viewers today. And Kat's someone I've known for many years. She's one of the leaders in integrative functional medicine. She's got a burgeoning practice. And she's really someone that I think you'll enjoy listening to today.

Dr. Kat Toups is a functional medicine psychiatrist at the Bay Area Wellness in Walnut Creek, California, and the organizer administrator for the Bay Area Functional Medicine Group since 2012. She's a distinguished fellow of the American Psychiatric Association, board certified by the American Board of Psychiatry and Neurology, and previously boarded in geriatric psychiatry. She's active in local psychiatric associations.

She was on the board of trustees for the California Psychiatric Society, served as a counselor at large and cofounder member of the NCPS Integrative Psychiatry Steering Committee. She's very active in the East Bay Psychiatric Association, serving on the board of trustees from 2006 to 2012 and as president from 2009 to 2012. Dr. Toups is a former assistant professor of psychiatry at UC Davis. She was inpatient residence training director and later the owner and medical director of the Bay Area Research Institute, which was a clinical trial center in Lafayette, California.

She served as principal investigator for over 100 clinical trials over 12 years, including 12 in Alzheimer's medications. She's found that the elusive cure for brain psychiatric illness may not be found in a pill. And I'm excited to hear more of her thoughts on that. She personally embarked on an intensive course of study to learn functional nutritional medicine and was one of the early completers of the Institute for Functional Medicine certification in 2013. She's a certified practitioner by the Institute for Functional Medicine.

Dr. Toups practices functional medicine psychiatry, which seeks to discover the underlying causes of inflammation, which may be diet; nutrition; lifestyle; genetics, including MTHFR, which she'll talk about; food allergies; dysbiosis; gut health; toxin exposure; and chronic infections, including biochemical abnormalities. These can all be contributors to psychiatric symptoms and cognitive difficulties. Detection and correction of these problems can result in the resolution of psychiatric symptoms rather than just proving a Band-Aid by prescribing psychiatric medicines.

She really searches for the underlying cause. And she works with people from all aspects of health challenges. And her niche of the psychiatric and medication understanding allows her to provide a more functional nutrition base. Again, thank you so much, Dr. Kat Toups for joining us today.

Dr. Kat Toups: Thanks. That was quite a long intro, a romp through the past.

Dr. Mark Menolascino: Well you deserve it because you've worked hard to get to where you're at. And this isn't something you learn in medical school. I know you've shared with me that you've had a personal journey. And a lot of people in nutritional, functional, integrative medicine have kind of a personal story. Can I ask you if you'd share that with us?

Dr. Kat Toups: Of course. Well lately I've been focusing my practice on working with dementia and reversing cognitive decline. And I came to functional medicine because of my own brush or bout with dementia.

Probably when I was about 50 years old I was doing clinical trials. I actually have done 20 clinical trials with Alzheimer's [inaudible] cognitive impairment.

And I was testing my patients. And I came to realize that I was as cognitively impaired as some of my patients. And I would do a mini mental status exam, where I had to give them three words to remember, and I couldn't remember the words myself. And I had used that test for more than 20 years. So I had two sets of words I alternated with, and I would have to write them down to ask my patients.

But what had happened was I had developed multiple chemical sensitivities. I got allergic to absolutely everything. I was covered with rashes, covered with hives, had severe chronic fatigue, couldn't get out of a chair for year. And all of that inflammation in my body was ravaging my body, but it was eating out my brain. And the brain function just got worse and worse. I mean nobody thinks of dementia in somebody that's 50 years old. But I knew enough to know. I actually have treated patients with dementia in their 50s, and it goes very rapidly.

So it's quite a different critter than late onset dementia that occurs after 65. I got to where I couldn't drive a car safely. I could no longer back up or parallel park the car. My brain couldn't sequence those things. I couldn't use a computer very well. I couldn't remember how to do things that I used to know how to do. And I would ask my husband how to do something, and he would get mad at me because he'd say, "I just showed you that." And I couldn't remember that he had showed me that. I developed trouble hearing, and I couldn't understand what was being said. I kept going to the ENT and saying, "I need hearing aids."

And they would test me and say, "Well, you just have a mild hearing loss. You don't need hearing aids." And one day the doctor looked at me funny, and he said, "It's not in your ear. It's in your brain." And I had developed an auditory processing problem. And so I couldn't decode what was being said when there was muffled or background noise. So all kinds of things were happening.

Dr. Mark Menolascino: What a scary time, Kat.

Dr. Kat Toups: I mean at the time I wasn't thinking in terms of dementia. I wasn't thinking that my processing was impaired and that my visual spatial sequencing was impaired. I was just trying to survive every day. So that is actually how I came to learn functional medicine. I went to a conference called Food is Medicine, and it just totally blew my mind and opened this whole new

type of possibilities of actually helping people get really well instead of just managing an illness. Because the type of illness I had, I would be drooling in a nursing home by now if I hadn't have learned functional medicine and got my brain back online.

Dr. Mark Menolascino: Well I'm sure in your psychiatry residency they taught you quite a bit about nutrition.

Dr. Kat Toups: Yeah, like zero, right.

Dr. Mark Menolascino: Joel Kahn told us that in the cardiology boards there are no questions on nutrition, and there's no training in nutrition because there are no questions on the board exam. And you really had to learn this on your own, didn't you?

Dr. Kat Toups: Well, and it's the same thing with the GI doctors. In the course of learning things and developing several autoimmune illnesses before I got well, I went to the GI doctor and was having an acute problem from taking some metal out of my mouth. And I said, "Well, do you think this could be related to my gluten allergies?" And the GI doctor said, "I don't know anything about food allergies. I don't deal with that." So yeah, it's changing, thankfully, right. Lots and lots of people are coming to the table and understanding the importance of functional and nutritional medicine and how we really can halt disease and even reverse disease.

Dr. Mark Menolascino: Yeah, I had an interesting conversation with Dr. Rupy of The Doctor's Kitchen, who practices in London. And he was asked to speak to the medical students at Bristol and do a cooking class, which is exciting. And I think more students are wanting nutrition. And they're pushing the universities, the medical schools, to add more nutrition classes. So I think that the new generation of doctors realize that nutrition is important.

How are you able to implement this? Are you using health coaches? Are you doing one to one or longer visits? How do you really break that barrier to let food be medicine?

Dr. Kat Toups: Yeah, I have a nutrition health coach that when my patients come to see me they see me and then they also see the health coach to get started on the diet. I'm pretty fortunate here in the San Francisco Bay area, there's a lot of awareness of nutrition. And many people actually come in on very good diets. So it's quite different in other parts of the country where people aren't so aware of nutrition. And so for many people they're already

eating a clean diet. But then sometimes it's fine tuning it to their metabolic needs, right. Do they have heart disease? Do they have lipid problems? Do they have hypertension? Do they have obesity? What's their blood sugar control? And then in working with the dementia and cognitive patients, there's so much benefit of the diet for cognition.

Dr. Mark Menolascino: And I'm sure you have a lot of people that come to you on different diets, or they've tried different things. How do you try to kind of clear the slate for them and get to a starting point that allows them to start actually building it? Is there a core plan that you start people on, or does everyone start at a different point? How do you assess when you start?

Dr. Kat Toups: Yeah, I mean in order to get an appointment to see me, people complete a questionnaire because I always have a long wait list. And one of the questions is, are you wiling to undertake radical dietary and lifestyle changes? Because if you're not, forget it. I mean if you want to get well, you have to start with the diet. That's the foundation of everything.

And the purpose of your summit here is to deal with heart and cardiovascular issues. And of course the root of that is inflammation. And inflammation is the root of all chronic illness, right. And so how do we begin to control inflammation? The very first part that we all have control of is what we put in our mouth. So the food can be inflammatory, or it can be anti-inflammatory.

So for my purposes, I ask all my patients to stop gluten. I know you're aware of this, but gluten is the most inflammatory thing we eat. And it's been hybridized to have higher and higher gluten content that destroys the lining of our gut and promotes leaky gut. And gluten, of course, is the first thing, because it's causing the leaky gut. It gets through into the bloodstream and calls out the troops to kill that invader. So it's a very inflammatory food. It also has got a super high glycemic index. So the gluten is 20 percent higher sugar than table sugar. And people say, "Well, I don't eat white bread. I eat wheat bread." Well the wheat bread has a higher glycemic index than the white bread.

So the first place to start with even before the gluten issue is, of course, are you eating processed food. We need people to eat real food. We need to eat whole food in its natural form. We don't want all the additives and preservatives and the nutrients killed in our food. We need to avoid the toxins in the food. And that's a whole other can of worms. But all of the genetically modified food and the pesticides and the toxins is… I test people for toxins. It's just ubiquitous. I test all of my patients that come in with cognitive decline

and dementia for many, many things. But when I test the toxins, every single person is high in Roundup, or glyphosate, even kids, even young people. I mean I've eaten organic food for almost 20 years. And I have eaten religious organic since 2009 when I got very sick. And I was in the yellow zone. It's still there.

Dr. Mark Menolascino: We were talking to Joe Pizzorno the other day about this. And the half life of some of these chemicals is decades. So as yourself mentioned, you go completely organic, it just takes a long time for these toxins to leave the body. And you're right. The kids are really our front line of concern because they're getting exposed to these all the time.

How do you help women understand about this concept of what's in their food and how to make good choices? Are there some simple rules or some simple places where they can start?

Dr. Kat Toups: I think the easiest place to start, the typical teaching of shop around the outside of the grocery store, the vegetables and the fruits and the meat and the chicken and the fish. And avoid all the processed stuff. I mean I think so much of our decline came with the healthy of our… certainly our nation here in the 1960s, when we got Hamburger Helper and processed foods in a box.

And it seemed like it was a useful thing. I mean when I was pregnant I thought eating Lean Cuisine frozen food was healthy. And I mean we've been sold all of this incorrect advice. So some of it is just trying to help people understand that first off, just start with simple, real food. And when you stop eating stuff with so much sugar, I mean the sugar, of course, is a huge drug for people.

And it's so hard for many people to stop the sugar. But once you get past the hump, and your microbiome changes very rapidly when you eliminate gluten, you eliminate sugar, and then people hit a point where it's gone. They don't crave it. And I know for me if I eat out at a restaurant, I'm very sensitive to when they put sugar in food because my taste buds don't want it anymore.

Dr. Mark Menolascino: I'm sure probably every person listening right now is saying Kat, how do I stop my sugar cravings?

Dr. Kat Toups: Yes.

Dr. Mark Menolascino: How do I do it? Do you have any simple solutions or ways they can start?

Dr. Kat Toups: Yeah, I was the biggest carb junkie imaginable. And my doctor in college… well I was a sugar junkie before that. And I was having problems with getting headaches. And it was from low blood sugar. I would eat a candy bar, and then my blood sugar would crush, and I'd get headaches. So the doctor said, "Quit eating candy, sugar, Cokes, whatever."

Okay, so I'm a good patient. I quit all of that. And I started eating bread. I'd go to the cafeteria in college, and I'd get a salad and six dinner rolls. So I was a huge carb junkie. And what really helped me to get off of my carbs was glutamine. So glutamine is a simple amino acid. It's in all of our food. We often use it in functional medicine for gut healing. So it's the fuel source for the lining of the small intestine.

And it really promotes gut healing. But it helps sugar and carb cravings. And it's so easy. The capsules come in 500 milligrams. You can take two of them as soon as you wake up. You want to take it on an empty stomach because if you take it with your food, the effects just get lost. So you can pop two when you wake up. And then you can pop a couple between breakfast and lunch and then a couple between lunch and dinner and then a couple at bedtime if you need it. And it really does help those cravings. And after a while, then, people find they suddenly start decreasing needing it. But that can help.

I mean there are other underlying issues with the sugar. Some people need to have gut testing. If you have yeast overgrowth or parasites in your gut, they thrive on sugar. And so sometimes people are doing a great job eliminating sugar, and then they'll feel like a switch went off in their brain, and they just gotta have sugar.

And they're going through the cabinets, oh, there's this old box of Jello. Jello probably has some sugar in it. And they have to eat sugar. And those are the critters of the yeast or the parasites saying feed me, feed me. So sometimes exploring, if you're really having trouble, doing stool testing and finding out what is happening in there and addressing that will also really help with the sugar.

And then there are tricks, okay. There are wonderful snacks available. I mean I give my patients a list of a couple of chocolate alternatives. Go Raw is a line of food that they sell at Whole Foods and Thrive market. And they have something called Choco Crunch. And it's coconut chips covered with dark

chocolate cacao. So there's no dairy. And I think if you ate the whole bag, it's about three grams of sugar. So there are little snacks and tricks and things that you can do where you're actually eating something healthy, but it's feeding those sweet taste buds.

Dr. Mark Menolascino: Well Kat, I love that hint about the coconut and cacao. Can you give us a couple other hints or pearls that you've found that help with that sugar craving?

Dr. Kat Toups: Yeah, so that same line, Go Raw, they also make coconut chips with lime on them. So they're just crunchy coconut chips with a little bit of tart lime flavor. And they're healthy, so they're healthy fats. So I know we want to talk some about fats for the heart and the brain. But coconut, of course, is an easily assimilatable fat. And so you could eat this whole bag, and you're actually giving yourself nice healthy fats. But it beats the sugar cravings.

Dr. Mark Menolascino: Well you were talking about sugar feeding those little yeasties. And I don't think a lot of people really understand this whole concept of yeast and the gut, how that ties to inflammation and heart disease. How do you use an easy way to explain that to your clients?

Dr. Kat Toups: Yeah, that's a good question. So yeast is fairly ubiquitous. Most of us have some amount of yeast in our GI system. And the problem, of course, is when it overgrows. So we have a balance of all this different life within us. And many of those critters, as I call them, but the microbiome, they help us to extract nutrients. And the good ones help to outcompete invaders.

And so we need to keep things in a balance, but they're easily disrupted, certainly, by what we eat. They're also disrupted by stress. I mean stress alone causes leaky gut and all kinds of problems in the gut. So working with the balance in the gut and the health of that is important for the purposes of the heart, the inflammation in the heart, and in my purposes for the brain. Of course the heart and the brain are connected.

And so I think it's important for people to understand that the health of our gut is controlling everything in our body. It's a place that we always start in functional medicine. What are you eating? And what is your gut health? Because if you don't get that right, you're not going to be able to control the inflammation and all the chronic diseases everywhere else.

Dr. Mark Menolascino: Well you talk about the heart brain connection. And I think a lot of people don't really realize… and we were taught in medical school they're separate boxes hidden from each other, and they never really communicate. And the gut never communicates with the heart. How do you see that interplay? Is there, again, an easy way to help us to understand that relationship a little bit better?

Dr. Kat Toups: Everything is interconnected. And it's been a crime of medicine that we've compartmentalized things. And yes, we need specialists that really know everything about a particular area. But we have to always put it in the context of everything is interconnected. Psychiatry has been the worst of it, right. This is what psychiatrists deal with. And no, the problems in your brain can't be from what's happening in your gut or what's happening with your lipids or what's happening with your blood sugar or what's happening with your infections, which turns out to be a huge driver of things happening in the brain. And some of the infections that affect the brain also affect the heart.

So we know that Lyme is one of those infections that can affect so many systems in our body. One of my friends had Lyme for 10, 15 years. She was very, very ill. Both of her children were born with it. And she was finally diagnosed because she developed this heart murmur that could be heard across the room. They said, "How long have you had this murmur?" She said, "I don't have a murmur." Well the Lyme had affected her heart. And that's how she was finally diagnosed. But Lyme also has a predilection for the brain. And it's turned out to be such a big driver of psychiatric illness and dementia as well.

So it definitely is important for all physicians to start to understand the interrelatedness of everything in the body. And for psychiatrists, I mean it's a steep climb when you come to learn functional medicine. You have to learn about the gut and the lipids and the blood sugar and things that we had long forgotten with our residency training. We didn't deal with that in residency at all. But it's a problem, especially for women.

Let's come to our topic here of women. So women with heart disease are often missed, right, because people think okay, if this is a woman, they're not going to have this risk for heart disease. And people don't take that seriously. And it's the same thing for psychiatric illnesses that are due to medical illnesses. So many women are told well, this is from your stress. And even if you have a gut problem, well it's from your stress; go to the psychiatrist. I have so many people that come to the psychiatrist. They say whatever it takes to fix me. But

the problem is in the body, and back to our notion of inflammation, because that links the brain, the heart, and all of our systems in the body.

Dr. Mark Menolascino: Well you're so right. I was taught the brain was a black box, and it didn't communicate with the rest of the body. And in medicine we've gone to this Rene Descartes simplistic reductionist approach to break everything into the smallest piece so we can understand it. And what you're really doing is going back to the systems approach and putting all the relationships back together. And I think for me to hear psychiatrists thinking that way is really exciting because you're really allowing your expertise of the brain to tie it to the heart and tie it to the gut, tie it to infections. And the work you do with chronic infections, I think, is probably the least understood in medicine. It's not how we're taught about infections: you take an antibiotic and everything's better.

You mentioned Lyme and the heart. There's an arrhythmia problem called third degree heart block, where your heart stops communicating with the top and lower part. And one of the things that can cause that is Lyme disease. So we know that infections in the heart are really leading to major serious illnesses. What about some of these obscure infections? You talk about candida. You mentioned Lyme. What are some of the new ones on the radar for you that may tie heart disease to a chronic infection, chronic inflammation?

Dr. Kat Toups: Well I think any kind of infection causes inflammation because when we have an infection, our immune system activates to fight the infection. Well how does an immune system fight an infection? Well it's releasing inflammatory cytokines, right, chemicals to kill the invaders. But any time there's chronic inflammation that's going on, over periods of time like some of these infections, that damages things.

So it's going to damage the blood vessels, and it's going to damage the brain. I mean it can damage everything. So any kind of infection and the inflammation that it creates is a problem. Now what we're seeing in the last decade or so is we're seeing a proliferation of autoimmune diseases, right. We're seeing more and more immune diseases. And coming with that is then the immune system's out of whack, which means you're more likely to succumb to some of these chronic infections.

So Epstein Barr is another one that we see quite a bit. I don't really know how Epstein Barr affects the heart, but it certainly affects the brain and the cognition. And Epstein Barr is mononucleosis, or chronic fatigue. And actually

a huge percentage of us have had some form of that by the time we're 18. Like many, many viruses we get in childhood, the viruses now, we know, continue to live in our body. But in times of stress or times of impaired immunity, those viruses can wake up and reactivate. So reactivated Epstein Barr is something that we see a lot. And it's quite an inflammatory disease. And it would be interesting to know how it affects the heart. Do you know? Does it?

Dr. Mark Menolascino: Well it's interesting because they've found in blockages or plaques that cause sudden death in both men and women, when they do DNA or molecular analysis of that blood clot heart plug, they find the DNA of Chlamydia and Epstein Barr and fungal infections. They find remnants of these infectious processes actually in the plaque that caused the heart attack. So I think you're right.

And we know in the brain that these infections are at bay. I think we're just beginning to understand it. And your analogy of this inflammatory process, this fire on the brain, fire in the heart, fire in the gut, once the fire's lit, it affects all aspects of the body. And I love how you've always taught me this relationship of the immune system inflammation and infection. And the inflammation can just run rampant. Are there strategies where, if you don't mind, number one, how you identify inflammation? And then how do you address it? I know it's never a one size fits all, but there must be some basic things that you start with to start putting out that fire.

Dr. Kat Toups: Right, well I mean the first step is what is causing the fire. So obviously that's going to be quite different for different people. So when you see somebody initially, yes, start with the diet. There are basic nutrients that people can and should take that are anti-inflammatory. Fish oil is one, of course, that I'm sure is covered in your talks here. I mean fish oil is a very powerful anti-inflammatory. And sometimes I'll have people take super high doses of fish oil, especially when they're having depression, anxiety, memory problems. I have a protocol that I call fish oil jump start.

Dr. Mark Menolascino: Great idea.

Dr. Kat Toups: Well, and it's interesting. So I have people basically take eight grams a day for the first week and then step it down and end up at three grams a day. So I have the dosing of the fish oil I like. And so basically you take four twice a day for a week, three twice a day for a week, two twice a day... oh, well, what is it? No, five, four, three, two. You end up at two twice a day, which is about three grams. And I think three grams is a basic healthy dose for most people. It's interesting in the psychiatric literature. We learned a

long a time ago that fish oil could help depression. And the studies back then were to use eight grams a day. Well it's hard to keep taking eight grams a day of fish oil, right.

Dr. Mark Menolascino: I was just going to ask you that. I've tried it. It's hard.

Dr. Kat Toups: Nobody wants to take that. And so we all said, "Oh, you could probably get by with less." And so we gave less. But what I notice when I have people start with that jump start, it floods their brain. And people can have rapid reduction in their depression and anxiety. But I think that once you repatriate and get those levels up, you can taper down and then stay at a tonic level without having to take the high dose.

But a recent paper came out that was a meta analysis of all of the studies with fish oil and depression and anxiety. And they all showed eight grams as pretty much the therapeutic dose. But I do think that they were short term studies. And so I do think that once you get the levels up, you can maintain them without having to stay on that high end dose.

So fish oil, great for the heart, great for the brain, great for so many things in the system. So that's a very wonderful and easy anti-inflammatory that can be started at the first visit, and then changing the diet. But beyond that you have to personalize it through the testing. And there are just so many different factors for different people.

So to use dementia as an example, because that's where I've been focusing lately, on working with people with dementia and mild cognitive impairment and how can we stop that and hopefully reverse it, well dementia, they're going down fast. So I have to test everything up front. And one of the criticisms of functional medicine is they do too much testing. But if you don't test, you're not going to find the answers.

So some people are easy. You can make easy interventions, and they're going to be okay. But when you have a very complex disorder like dementia, there are multiple factors. There's never just one thing that's driving that dementia. I often find multiple things. And so if we want to stave off the decline of dementia, we've got to fix all of those things.

And so what I find, there's a lot of people talking about dementia. Change the diet; exercise every day. We know exercise changes the heart; it changes the brain. That's our best and cheapest for absolutely anything. But change your diet. Exercise. Do brain training. Take some supplements. And with dementia,

that's not enough. It's where you start. And it's where you start with any chronic disease, right, any of the kind of conditions that we're trying to deal with: immune disorders, lipid disorders, blood sugar disorders. But then we look farther. And the big areas that I think people are missing are the toxins, the infections, and the lack of hormones. And I think we should maybe jump into a little bit about hormones because they have great implications for the heart and the brain as well.

With hormones, well women, our risk for heart disease is much lower than men until we go through menopause. And then it starts to approach the risk that men have. So hormones are protective for the heart. And that is pretty clearly known. But they're also protective for the brain. And we have receptors for all of the traditional sex hormones in our brain, right, estrogen, progesterone, testosterone, pregnenolone. And both genders have all of those receptors. Well I recently learned that the brain actually makes its own estrogen.

Dr. Mark Menolascino: It does.

Dr. Kat Toups: And it makes its own progesterone as well. And so we should have some protection with our brains once our gonads stop producing those hormones. But what we're seeing in things like cognitive decline and dementia is that things are disrupting the production of those hormones in the brain, and those are the infections and toxins. But working with the hormones, then, and supporting people's hormone levels in the menopause transition and after menopause is just turning out to be magical for both the memory, the cognition, and also for protecting the heart.

Dr. Mark Menolascino: So Kat, you're talking about hormones for women. And are the synthetic hormones doing the same thing as what this estrogen in the brain makes? And how do you differentiate between the different types of hormones that women can take? Do you have any recommendations?

Dr. Kat Toups: Yes, so definitely. The older hormones that have been around for, I don't know what, 40, 50 years, the PREMARIN and Provera that many women took and had problems with, we do not recommend those hormones. So they are not what are considered bioidentical. They're not in the same form that our body makes them. And they do have increased risk for cancer and strokes.

So the big thing with estrogen, well with both estrogen and progesterone and testosterone, we want to have them in a bioidentical form. So we want to have

them in the same form our body makes it. If you split hairs you could say they are still synthetic because they're being synthesized. But at least we're honoring the form that our body makes them. For the estrogen it's critical that people use it transdermally through the skin.

So if they take estrogen orally, even the troche's, I have people that go to integrative GYNs, and they come into me, and they're taking estrogen. Troche, which is a hard thing that you suck on, and you're supposed to absorb it through your gum, you still swallow. You make saliva. You swallow. You're still taking that estrogen orally. And what happens with oral estrogen is it goes through the liver and breaks down. The first pass through the liver has metabolites that can cause cancer.

So we want to be sure that when we talk about hormones - that's a great point - is that we want to stress that with estrogen in particular, we want to give that through the skin so it does not go to the liver and make those harmful metabolites. And it's very interesting that more and more data's coming out all the time now that even women who've had breast cancer, the big fear is oh, we can't give hormones because it's going to cause breast cancer.

Well, the hormones don't cause the cancer. But if you have a cancer, it can feed the cancer. But they don't cause it. And there's actually data coming out that they're protective, that there's actually a lower incidence of recurrence in women who've had breast cancer that are being treated with bioidentical hormones.

Dr. Mark Menolascino: We've had several speakers talk about these hormones, Kat, that how by taking bioidenticals you may occupy the receptors, that the synthetic or xenoestrogens from our environment may actually be causing trouble. And that's an interesting hypothesis, that by protecting yourself with bioidenticals, you may be preventing the toxic environmental estrogens.

Dr. Kat Toups: That's really interesting. I hadn't heard that, but it makes perfect sense to me.

Dr. Mark Menolascino: Well we're seeing young girls go into menarche early. They're having their periods earlier. We're just seeing these changes in our kids, too. And it's got to be driven by something. And it may be the toxic food, the toxic environment, and all that.

As far as if I'm listening and I want to try to get clean or try to detoxify, are there some simple things I can do at home to try to help get that process started?

Dr. Kat Toups: Detoxify, can you be more specific?

Dr. Mark Menolascino: Just, well, in general.

Dr. Kat Toups: A general detox?

Dr. Mark Menolascino: Yeah, are there some simple rules that might, again, help people get started? And then I'm going to ask you a couple of harder questions after that.

Dr. Kat Toups: Yeah, well a lot of people have a lot of different programs with detox. I think our bodies are actually meant and designed to cleanse themselves. So the first part, to me, is that if we quit putting in toxic things, that's the number one thing. You can detox, and then if you go back to your lifestyle and eat horribly and put chemicals on your skin and your lotions, you're going to remain toxic.

So first you have to take a hard look at what are you eating, what chemicals are you using in your house for cleaning and your laundry, and what do you put on your skin with your lotions and your makeup and things like that. But yes, our bodies are designed to be self cleansing. I mean we've learned that the brain does that now when we sleep. And the glymphatics, which is part of the lymphatic system that can drain toxins in our body, they're called the glymphatics in the brain. And when we sleep, the cerebral spinal fluid and the ventricles starts expanding and turning around like a washing machine. And supposedly it's taking the toxins out of the brain and cleansing our brain.

So sleep, let's just mention sleep here.

Dr. Mark Menolascino: Please. It's the hardest thing for people to get a handle on, is their sleep.

Dr. Kat Toups: Well I mean to have it work is one thing but just even the notion that we've got to protect those eight hours of sleep. And six hours of sleep doesn't… people say I'm fine, I can do it. But you're depriving your brain at least of that time to detoxify.

Dr. Mark Menolascino: Great point.

Dr. Kat Toups: So the sleep is critical. So I try to avoid having people have to… there are already so many things that you have to take when you're sick. And to have to have, to me, fancy programs for detox, I mean they're great. People can do that and feel great. Some people do coffee enemas; they feel wonderful. I think sweating is the ultimate detoxifier. And it's what we use when people have high levels of chemicals in their body, right. We recommend sauna.

And there's very nice data that shows that regular sauna will take those chemicals out of your body. And there's a beautiful study that came out of Finland in this past year that showed that the men who did sauna every single day had a very low incidence of Alzheimer's. And the men who did it three times a week had a higher incidence. And the people who didn't do it at all, higher still. So all of the native traditions of sweating, that's an easy and inexpensive thing that people can do.

Dr. Mark Menolascino: I love that kind of ancient wisdom that have been born of tradition that actually we're finding there's scientific evidence for. And it makes it really exciting to do it.

You were talking about omega-3s. And I talk about all of us as we're all fatheads. And the omega-3, I love your idea of dosing up in the beginning and then bringing things down. And I think a lot of nutrients, maybe we underdose them a little bit. And that's an interesting perspective of sometimes you have to fill up the tank, and then you can bring it down. Other supplements you see that benefit with? I think glutamine may be that way too, where sometimes I underdose it. And a little bit more on the front end ends up being better. Then we can taper it down.

Dr. Kat Toups: Right, right. And glutamine, I mean there's data for using very high doses, like in the ICU, that people will recover much better. I think it's 20 grams, 30 grams, I mean very high doses. So it depends on the level of illness that people have. But yes, if you're going to take something, you want to take enough to move the needle and make it worthwhile. The omega-3s, they're so easy to measure now. We can measure them at Quest.

We can measure them at LabCorp. We can measure them at True Health. So I get a level as part of my screening. And I look at the omega-3, omega-6 ratios. And I tell people I want to see those omega-3 levels at the top of the range. And I want to see the omega-6s in the bottom half of the range because they're proinflammatory. And we need to have them, but we need to have the balance, right, on those things.

Dr. Mark Menolascino: And are most people you see when you do the testing very low in their omega-3s? It seems like everybody's low in vitamin D and in omega-3s when I test them.

Dr. Kat Toups: Right. You can sort of predict it. And I have my patients come in with a three day food diary. So before I see them I review their three day food diary. And it's so illustrative of what kind of things am I going to find in the testing. So I do live in an environment where people are a little more health conscious. But I definitely see people that are low.

Dr. Mark Menolascino: But Dr. Toups, I eat farm raised salmon every night. How come my omega-3s are low?

Dr. Kat Toups: Yeah, yeah, right. But it's very easy. Omegas are a very easy thing to fix, even if you can't change the diet. I personally do not like seafood. I grew up in southern Louisiana. I'm an anomaly because we had all of this wonderful fresh seafood. But it would come live, and it would get thrown in the boiling water and die. And I just was too tenderhearted, and I could never eat it. So I have to take fish oil because I'm not going to be getting it from that aspect of my diet. So yeah, the fish oil's an easy thing, though, to dial in there.

Dr. Mark Menolascino: Well I'm fascinated about how many people come in with bad fish oil. Everybody brings their supplements. We look at them. And they'll hold them out away from themselves and open it because it's got such a bad smell to it. And a lot of the fish oil is rancid before they even take it.

Dr. Kat Toups: I had a patient tell me a brand that I've used for years and have had hundreds of patients take, she's like, "I'm not going to take that stuff. It's rancid." I said, "Well where did you get it?" Well she bought it on Amazon. And as you well know, having quality control of the supplements is critical. We need to be sure that the supplements are free of toxins. And we need to be sure they're stored properly. And so it is a problem that way.

I wanted to talk a little bit about the fat and the APOE4 gene because you had me thinking about the fat. So the APOE4 gene is related to Alzheimer's. And it's a risk factor for Alzheimer's. I don't like my patients with dementia to worry about risk factors for Alzheimer's because we can change that. But it's a big risk factor for cardiovascular factors.

And so the APOE4 gene is such an interesting wheel. So we have APOE2, 3, and 4. I have no idea what happened to the 1. I could never research that.

What happened to APOE1? But APOE4, actually it was a mutation that happened when we separated from primates. So when we came out of the trees and became homosapiens, the APOE4 evolved. And it's a proinflammatory gene. And we needed that inflammation to protect us. S

o when we get hurt, when we get caught, when we get sick, we need that inflammatory response of our body to help resolve the problem. And so that inflammatory gene was useful to protect early man. And early man didn't live much past 30, 35, so they didn't have to suffer from chronic inflammation that then kills our blood vessels in our heart and our brain. So the people that still have the APOE4 gene, it's considered a fat bucket gene. That's what it's kind of fondly or not so fondly called.

So people that have the E4 gene, what's useful for me to know, is that these are people that are going to tend to store their dietary fats in their blood vessels. And so people that have the APOE4, it's just useful to know that you need to watch the types of fats that you're eating. And keep an eye on your lipids and what's happening.

So with dementia we're often using a ketogenic diet because it's so helpful to shift from burning the carbs and the sugar into burning your fats. And those ketone bodies really help the brain and the clarity of the brain thinking. But we have to watch it in people with E4 to make sure that doing a ketogenic diet involves… basically you're eating primarily super high fat and super low carb and then a more moderate amount of protein.

And so pouring in all those fats, even when they're healthy fats, if you have an E4, you can potentially elevate your lipids in the long haul. But it doesn't always happen. So some people say you should never do ketosis with somebody with APOE4. And that doesn't turn out to be true. So it's something that I will start with people, but after two or three months I'm going to check their lipids and check their advanced lipid particles and see what's happening there.

And I've seen it go both ways. Some people will elevate, and other people will actually lower their lipids on a ketogenic diet. So it's just something to be aware of. You definitely have a higher risk for heart disease. But you can modify that risk by what are you eating and the types of fat you're eating and keeping an eye on those lipids.

Dr. Mark Menolascino: You took a difficult topic on this APOE4, and you explained it beautifully. I had a patient come in 25 years ago with their

positive APOE4 test, scared to death. And we didn't know what to do with it. I had nothing really to help them. And I hear you lecture to doctors and talk about genetics and how you incorporate them in your clinic. You're not doomed by your genes. You have the ability to alter their expression.

Dr. Kat Toups: Yes, right.

Dr. Mark Menolascino: And that's a big part of your practice, isn't it?

Dr. Kat Toups: Well it's yours and mine, right. It's important for all our systems, the epigenetic factors. So we all have genes. And what's amazing about our genetics is there are all kinds of redundancies and protection in our genetic code. So one gene may cause something to go this way, but another one may cause it to go that way. And so ultimately things should work in our biochemistry if we don't mess up the works.

And so what's happening with some of these diseases blowing up, I mean Alzheimer's is going through the roof right now. And it's going to more than double in the next 20 years. And it's already, I don't know, something like six million people here in the U.S. The statistics from the Alzheimer's Association says every 66 seconds, right now, somebody is diagnosed. And it's going to go down to like every 20 something seconds.

And so things are changing. But it comes to the toxins in our world, right. I'm looking at the beautiful view behind you of that pristine mountain range. But how do we protect our world from all of the toxins? And they're going exponentially right now. And all of these things are gumming up the works. So these are factors.

And so we may think we're eating healthy food. And people have to get educated about the food they're eating, right. Is this food that's been grown with pesticides because those things are going to accumulate in your body, and those are going to turn on genes that weren't meant to be turned on. And then we'll get the undesirable outcome. So yeah, I think the exciting thing is really that we do have the power to not have these genes turn on in a bad way.

And once they're turned on, we do have some locus of control to get them back in. And my own story was a great example, I mean from where I was and to have my brain come back online. But I had to work through everything. Everything I learned in functional medicine, every module I learned, I had to apply those things to myself. My genetics were issues. My toxins were issues. My gut was an issue. Everything was an issue, hormones. I mean it occurred

when I was going through the menopause transition. So there are a lot of factors. But I think the beauty is that some of it is not that hard to do if you get it before you're really sick.

Dr. Mark Menolascino: Well you had walked the walk. And you talked the talk. And I know you personally. And you live it now in your choices. And you really are a role model example to fellow doctors and to your patients. And I think that's very powerful, your personal story, but also how you make your decisions now. And that's you learn things on a daily basis that help you that you're able to share with your clients. And I think that that's very powerful medicine.

Dr. Kat Toups: Well I think that's also an excellent point, is that the way I live is a lifestyle. I didn't do something to get well and then go back to the way I was. And that is a frustrating thing because we all see patients who get better, and then they slack off, and they say, "Well I needed my comfort food because such and such crisis was happening in my life."

And I mean I've seen cancers come back that we put into remission because somebody needed their comfort food. And so there's really great food. I mean I don't eat any grains. I don't eat any dairy. I don't eat any soy. There's a lot of food to eat. People say, "Well what can I eat?" Well definitely work with the nutrition health coach if you have trouble figuring out what to eat because there's lots to eat.

And I travel. And these days it's become quite a lot easier to follow a good diet and travel. When I first started on this path, it was not easy. So people are getting more aware of options with gluten and dairy and things like that. But yeah, the point of you're in it for the long haul, this is how you protect your health. Exercise, I mean over 50 you fall of a curve if you don't keep up with your exercise. I used to be able to go two weeks without exercise, no problem, could jump back in, so definitely the notion of all of the things that we've talked about. How can you get peace?

And try to make it reasonable. That's often the goal, right. I mean I don't want people that have to be taking supplements four times a day. And sometimes in the beginning they have to when they're sick, and we're working on things. But then it's like okay, how can we simplify it. And how can we make this lifestyle sustainable so you don't feel like you're struggling to eat right and exercise and get your meditation in. I mean meditation is a great example for the heart and the brain. We know that 12 minutes a day of meditation can change your brain.

But they don't have to be all at once. You don't have to sit in a lotus position for 12 minutes and meditate. So you could spend three or four minutes when you first wake up in the bed. And you could spend three or four minutes before you go to sleep. And you can have three or four minutes another time of the day. And you're going to get those benefits. How can you bring little periods of mindfulness?

Mindfulness is if you shut off your brain and you come into your body and just be aware. So you can go on a walk in nature. And don't bring your cell phone. And listen to the birds, and smell the smells. And that's a little meditation. So a lot of it is how can you figure out how to incorporate these things into your life that work for you, that don't feel like you're having to struggle so hard to stay healthy.

Dr. Mark Menolascino: Well, Kat, that's such a great message. And you talk about exercise. It's easier to stay in shape than it is to get in shape. So to be there to lose it. But you're such a great example. And I mean for everyone viewing, you're a board certified, award-winning psychiatrist. And it's hard for you to do it on your own. So you need some help. You need to find an expert like Dr. Toups. You need to find a team that can support you. Family, friends, get this kind of whole pack available, get this group mentality, do it with a friend. But you need to seek out experts to help get you started in the right way.

So Kat, if people wanted to connect with you or to learn more about the work that you're doing, how do they find you? What are some of the things you're excited about? Pease share with us what's new in your world and how we can connect with you.

Dr. Kat Toups: Yeah, great. Well my passion right now is working with dementia and trying to both prevent it and especially, though, people are suffering. How do we figure out what's driving that dementia? So I've talked at a lot of places and got a sense of where doctors are struggling and how to do that and monitor with patients and patient groups. And so I'm writing a book right now called *Dementia Demystified*. And it's going to be a how-to manual.

So it will be targeted to both patients and physicians or clinicians because I want the patients to be able to take the information to their physicians. I mean there is a huge amount of labs and disorders that we need to look at. And I've spent a lot of time putting together the chapter on what is a laboratory work up? Where do you get it? What are the codes? What does it cost? What if you don't have insurance? So I'm trying to make a very practical

guide so that people can know what to do because there are many books that are great books out that will talk about the diet, the exercise, the meditation, the brain training. So I'm trying to take it farther and especially highlight the affects of the toxins and the infections and the hormones that people are missing.

Dr. Mark Menolascino: Are you telling me that dementia is reversible?

Dr. Kat Toups: It's reversible. I'm proof of that. It's proof. And we can see this in the head scans now. We do the volumetric head scans. And we can image all the structures in the brain. And when I did that some years ago, my gray matter was somewhere below the 20 percent level. It should be at the 50 percent level. And now it's close to the 50 percent level.

So we can see, when working with all these factors, we have quantitative measures. We can see the brain change. We can do neuropsych testing. We can see the parameters change. So I'm not going to sit here and say all dementia's reversible. But if it's not, we haven't found the cause or either the physician or the patient hasn't tried hard enough. But we're definitely making great strides at identifying all of those factors.

Dr. Mark Menolascino: Well Dean Ornish taught us that heart disease is reversible, which is the biggest killer of women. And now the biggest fear of women of getting dementia may be reversible in people. That's very exciting news.

Dr. Kat Toups: And they're linked, right. The same factors that are causing the heart disease are causing the brain disease. And I mean vascular is huge to both, right. We've long known about vascular dementia. But it's a mixed bag. I mean I use the term sometimes Alzheimer's, which is a specific type of dementia. But there are so many types of dementia. And usually it's a mish mash of several types.

So we have to seek out in our testing and find that out. But really the message I want to say to people is that dementia is not a death sentence, and that if you're having cognitive decline that you should try to partner with somebody that can help you. Dr. Dale Bredesen's book *The End of Alzheimer's* is a wonderful book that describes this type of methodology that we're using now. I've had the good fortune to work with him. And we're hopefully going to be starting a prospective clinical trial using his methods as soon as we get our IRB approval through. But yes, dementia is not a death sentence.

And when you feel like you're having cognitive decline, you are. I mean there's a term that's called subjective cognitive decline. And people know when something's happening. They know. And typically for women, I mean the menopause transition is huge. I recall when I started having premenstrual migraines that were not like my usual migraines. And I was having word finding difficulty. And I was in my early 40s then. And I went to my doctor and she said, "Oh, welcome to perimenopause."

She said, "Word finding difficulty is [inaudible] of perimenopause," meaning it's a hallmark of perimenopause. And so I went home, and I thought oh, okay. I'm in perimenopause, no problem. And then I started thinking okay, 50 percent of women are going to get Alzheimer's. And maybe the 50% that get Alzheimer's are the ones that start having problems when they get into perimenopause.

So fast forward to all that we know now, there's a full body of data, huge files of papers showing the effects of the hormones on the brain. So I would say if you feel like your memory's slipping, your cognition is changing, it's time to investigate. Don't wait until ten years later when your brain is really a mess.

Dr. Mark Menolascino: And I would say check your heart, check your brain, and give Dr. Toups a call. Is there a place they can find you on the internet or in Facebook or Twitter?

Dr. Kat Toups: Yes, *Dementia Demystified* is the name of my book. So that will link you to my website. And I'll have updates there. The book is still in progress. I keep finding more and more things that need to go in it. But yeah, *Dementia Demystified*, or my name, you'll find it there. And then I also have a Facebook site that's, lets see, what is it called, Kat Toups MD - Functional Medicine Psychiatry and Dementia. And I try to post interesting articles. And I try to post positive articles about the brain, not all the doom and gloom. I'm really trying to look for things that are interesting about how our brain works and how we can treat things and reverse things there.

Dr. Mark Menolascino: Well I'm going to go look at it tonight because I'm excited about the work that you're doing. Dr. Kat Toups, thank you so much for being with us today. And I look forward to seeing you again.

Dr. Kat Toups: Oh, likewise. Thank you so much. Thanks for getting all these messages out for women. It's so important. Thank you.