

The Primal Blueprint Podcast – Episode #38: Ask the Primal Doctor – Q&A with Dr. Cate Shanahan

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Brad Kearns: Welcome, listeners, to another exciting and recurring episode with one of our all-time favorite guests. It is Dr. Cate Shanahan from home base in Napa, California. How is everything going, Cate?

Cate Shanahan: Hey, Brad. It is a beautiful day here in Napa.

Brad: I so much appreciated our last show which did not feature any proper questions from listeners, but we got more into your background and how balancing being in the traditional medical world with these incredible breaking energy and momentum in the primal/paleo ancestral health world and talking about the four pillars of good nutrition from the book of world cuisine, *Deep Nutrition*. Go back and listen to that episode if you missed it. And now today I thought we would get into some questions that came in from listeners.

Cate: There are many questions that look really interesting and important.

Brad: [00:01:44] Some of you might have seen the headline story that comes in as a question. It was called "Treating Mild Hypertension with Drugs Might be Misdirected," and it goes on to produce some shocking statistics on that. We want to get your opinion on that. You are familiar with that study I am sure or the article that came out.

Cate: Yes. Whoever that listener was, he is really on the ball because it just got published within the last week in a British medical journal, which, by the way, there is the full text on line. If anybody is really interested, they can read the full thing the link. What they are saying (I am proud to say it was a bunch of family physicians who thought to look in this direction. I am a family physician myself.) We are always looking out for our patients in the long run and asking the question, "Are we doing more harm than good?" So the answer to this very important is what if somebody has slightly elevated blood pressure like somewhere in the 140 over 90 range, not what I would call sky high like 180 over 100 or something like that.

This constitutes something about 40 percent of the population of adults who actually have hypertension. I think it is something like at least 22 percent of that 40 percent of all adults in the world who have mild hypertension and are encouraged to be treated. But it seems as though managing those people with only minor hypertension costs about 30 billion dollars a year worldwide. `Complications of the overtreatment are causing possibly millions of deaths per year. So that is a big deal and I think we will be hearing a lot more of this study and about pulling back on treating people with merely mild hypertension with drugs and instead focusing on lifestyle modifications which is where Mark's Daily Apple really shines.

Brad: That's great.

Cate: So some folks have actually questioned, "Is it even an issue to have mild hypertension? Isn't it normal to have blood pressure go up as we age?" And the answer is.....

Brad: The answer is, it depends on your boyfriend. Is he nice or mean to you?

Cate: Right. Or if you have retired or not. The answer is: no, it is not normal but it is common but the real problem is we don't get benefit from treating these mild degrees of hypertension the same way that we do get real profound benefits from treating greater degrees of hypertension because of the fact that we can't expect drugs to make something perfect.

That is how I explain it to my patients. When I do have them on blood pressure medications, I don't expect their blood pressure to be perfect. I just want to get it down out of that really high range where we are basically risking blowing a gasket somewhere. There is a much higher risk of bleed strokes and aneurysms, which kill people suddenly. There is real benefit from taking your blood pressure medicine. I am certainly not suggesting jumping off of it. The question is: would you be better off making lifestyle change and controlling it that way, particularly if you just have mild hypertension? So ask your doctor. Especially because the family practice doctor will want to talk to you about it.

Brad: What are some quick and easy ways to get that lower with dietary or other meditations if you come up high on a BP reading?

Cate: One of the base things is on folks who have long commutes to work. That is horrible for your health. A lot of people here have commutes of 45 minutes to an hour and that really stresses them out. When they come in to see me, let's say they work in Napa, and say they live 45 minutes away. They come in on their way in to work and their blood pressure can be up 20 or more points. So if you have to do that, make sure to find ways to listen to something relaxing like a great podcast on the way in or music or something.

Brad: That is funny that you say that because I like to go back and forth between all the wonderful primal/paleo oriented podcasts. Then I listen to some sports stuff and get to hear about all these NFL guys who are still playing after slapping people around. That could cause a blood pressure spike. So I am going to listen to this show and relax after we are done.

[00:07:00] Here's another question: Dr. Cate: My question is about hormone replacement therapy to delay the aging process. I guess this is a different issue for males and females. For men, the long time caveat against taking external hormone is that testosterone can increase the risk of tumors/accelerated growth of tumors seems to be coming under question. We'll see if you agree with that or your comments. Then we have the counter argument that we are evolved to reach reproductive age and we are not really designed to live to 100 and, furthermore, that estrogenic influences in the environment are challenging our maintenance of healthy hormone levels as we age. I'll put in an aside here. I remember reading a study referencing the testosterone readings from soldiers in WWI vs. the medical exams of the Gulf War soldiers. It was something like fourfold testosterone increase back in the WWI group. So what do you think, Cate, about natural strategies as well as hormone replacement strategies to optimize adaptive hormones for males in that age range of 40 to 70? And also the differing concerns with females for hormone replacement therapy?

Cate: So that's a huge question and people have written books about it.

Brad: I think there are about six questions in there.

Cate: It is really fascinating. I think the key thing to pin down is: what are we trying to improve exactly with any kind of hormone replacement? And the way I look at it is what really limits our lifespan....let's say all your organs are working properly. You are not getting Alzheimer's...you have been taking care of yourself. It is the connective tissue because the best connective tissue that a person can get will still have a half-life of 75 years. More than anything else, a specific type of connective tissue, called elastin correlates with the half-life of the organism. This is a molecular way of predicting your life span that I think is very fascinating.

So animals that have elastin with a half-life of ten years, tend to live about ten years. That would be like dogs. Elephants and human beings have elastin with a half-life of much longer so we tend to live much longer. In humans the elastin's half-life is 75 years so that means that half of your elastin is gone after 75

years. If you could improve the amount of elastin or somehow preserve other connective tissues, you'd do it by using estrogen or testosterone therapy. There is reason to believe that you can because we know estrogen and testosterone improve bone health. Bone is a type of connective tissue and there is reason to believe this research that estrogen and testosterone also stimulate collagen formation in other connective tissues such as the joints, arteries. There is reason to believe that having a higher amount of estrogen is going to lead to a longer life span. But the key thing is timing. Because when we develop our elastin it is in our teens. So we are kind of done with it by the time we are 20. If we didn't have our peak testosterone or estrogen level for whatever reason at that point in time, then taking additional estrogen and testosterone is not going to help with that particular type of connective tissue which is, perhaps, the most important type. There are other types of connective tissue that will still benefit as life goes on but they are not going to benefit if your levels are normal. If you already have a normal level of estrogen and testosterone, you are not going to do better by exceeding normal. There is just only so much you can get. There is a ceiling. You can't take more vitamins, for example, and get more benefit.

Brad: Can you test for your levels?

Cate: We can. But the other part of it is the receptivity to the hormones that we really don't test for. We don't have a way of testing for it. So you can have normal or seemingly sub-normal levels but if your levels are normal and you are not receptive, it doesn't do you any good. Or if your levels are low and you are not receptive then the replacement doesn't do you any good. So it's really not a slam-dunk, in my view, that taking estrogen or testosterone had any benefit in any given person. You would have to do some testing and you would have to find some specific evidence of improvement immediately on taking it.

[00:12:21] That would be, for example, with women with hot flashes and they take a little extra progesterone. Probably what is happening there is the progesterone is balancing out the cortisol and I think that is what the current thinking is. It is that hot flashes come from more sensitivity to cortisol. If you have a higher level of progesterone in your body and/or estrogen it balances out those cortisol pulses and you don't get hot flashes any more. So that would be an obvious benefit because hot flashes make women miserable. They are embarrassing. You start sweating during business conversations and they keep you up at night. That is my take on hormone replacement for women. If you are having symptoms, for sure, those other things we could argue about like if your bone density is low. It can measure improvement after taking estrogen for a couple of years. There is reason to believe that a medium amount of some hormone replacement, particularly in woman, has been a benefit.

As far as with men, you can make some of the same arguments like with bone density. Men don't have hot flashes.

Brad: I sometimes have hot flashes when I am in a business conversation with Mark sometimes.

Cate: [00:13:41] Well, you need to check your progesterone levels. There was a recent article that came out questioning the practice of entire group of doctors, who are in their organization called Age Management Medicine. There are doctors who are not in this group are kind of calling out this whole group saying when you are prescribing this testosterone to people, there is absolutely no evidence that it is helping them and there are a lot of reasons to think that it is harming them. What they are talking about when they say "evidence" in the article is about a standard that is very hard to collect in large groups of people. There is N=1 evidence where people can feel better and stuff like that and then there is the literature. There is really no evidence in the literature that you can improve the aging process. Or somehow delay the aging process with testosterone.

Brad: Cate, the doctors in the Age Management Medicine.....who is against it?

Cate: The organization that called them out, I believe, was the American Urological Society.

Brad: [00:15:05] So the Age Management folks are believers in the hormone replacement?

Cate: Yes they prescribe a lot of hormone replacement. They are kind of like a boutique organization. A lot of Baby Boomers go and get testosterone shots and gels and then run out of there happy that their lives are going to be extended somehow. You can sense from my comments that I don't really buy that. I don't think you can cheat nature. It doesn't make a lot of sense that you could do better than nature just by taking a shot. Life is pretty complicated. It doesn't boil down to a shot of testosterone.

As a primary care doctor, I have seen a lot of men who have gone through this. They start out feeling great because they get this boost of hormone because a lot of the problem with aging is that the body just doesn't respond normally to hormones anymore. They lose that boost of energy and all that they are left with are the side effects. I can see them in a restaurant or somewhere. I can spot them. I can see that they have had hormone treatment. They get a flush on their cheeks because testosterone makes you produce a lot more red blood cells so they walk around flushed after a certain number of shots. They risk elevated triglycerides, abnormal liver enzymes, elevated blood pressure, and so I have recommended they stop getting shots and the problems reverse and they don't feel any worse. I am cynical because I haven't really been impressed. N=several more than one. Several dozen.

Brad: There are a couple of things operating here. First, you were talking about extending life span and then the second element is, let's say, improving peak performance or getting leaner or whatever, being more performance oriented without regard to ultimate longevity.

Cate: That is a whole different ball of wax. Certainly there is a lot of anecdotal evidence from guys who have done these sorts of things. Since they are illegal, I don't think we are going to have a lot of controlled studies. There is a lot of science to suggest some of these practices might be beneficial which are basically what they do if they use very low levels of additional supplemental testosterone, and sometimes Human Growth Hormone and other little cocktails of things and they say it really improves their performance. It actually changes the game in some sports where a lot of people are doing this. I don't work in that world so I don't really have a well thought out opinion on that. Obviously, I don't think it is great for your long-term health because then you are making all these weird adjustments in your metabolism that we really don't know what the long-term effects are.

Brad: So that is interesting. Not to stay too long on this. It is a fascinating topic because Mark and Carrie are working on an anti-aging multimedia educational course. So it is a hot topic around Primalland, too. [00:18:52] One thing I wanted to go back to is that fascinating insight about elastin being a predictor of longevity. I am wondering why that it is. Obviously, if someone has creaky joints and falls and breaks their hip on the stairs and they are 97 years old, that's not going to be a good deal. But beyond that, Why is elastin so important?

Cate: Elastin is the structural backbone of a lot of our connective tissues from our skin, to our arteries, to our ligaments and we can only make it under very specific set of conditions that have to do with hormones that occur when we are in childhood and during puberty. It then goes away so you can't make any more of it. Like the name suggests, "elastin," it gives the tissues that I mentioned a lot of their flexibility their stretchiness. The loss of elastin is the primary reason you get wrinkles. So wrinkles on the skin don't have a whole lot of health effects but the same idea in your arteries leads to aneurysms and varicose veins, loss of tightness in the joints that can lead to laxity and arthritis. It is essential.

You mentioned that study that suggested that the quality of the testosterone levels in our fighting force has declined one fourth of what it was generations ago. That has an impact on a man's connective tissue and the amount of elastin they are able to make so these hormone changes lead to profound body changes and I think this should be a topic of discussion in our community because the diet has a huge impact on your body's ability to produce and respond normally to all hormones including testosterone and estrogen.

Brad: [00:21:16] So you mentioned that by the age of 20 we are done making our elastin so, obviously, the dietary habits of the youth are critically important to longevity in that sense. If we are over 20, is there anything we can do or address in the diet to perhaps to improve receptivity, which you said you couldn't test for? How do we stand if we pound in too much junky food until we are 20 and now we are hoping to live a long and happy healthy life?

Cate: The first thing that happens when people go on to a healthier diet is their inflammatory responses go down. And inflammation interferes with hormone receptivity and directly destroys connective tissues, including elastin. There are free radicals that form. There are enzymes that become activated that are damaging to the connective tissue and literally chew up the collagen and break it down. If you get off your unhealthy diet, no matter your age, and get rid of the inflammation, then you are going to stop the damage and there are other families of connective tissues that your body makes. You will be able to make some other type of connective tissue. What we are talking about is the elastin is a type of collagen that goes into many of your connective tissues. So you can make some other types of collagen. Those have at least some benefit in structural strength and benefits to all of your tissues that you want to be healthy. Folks have noted that when they get off their crummy diets, they see improvements in their skin to the extent that they have been asked if they have had Botox shots. Their response has been, "No, not Botox. I did bone broth." So you do see improvements from presumably other types of collagen being produced in a healthier amount.

Brad: That is a good headline. I like; "It's not Botox. It's bone broth." So that was a great question. Let's try to get to one more and then on our next show we'll have more of them piling up.

[00:23:33] This is sort of a follow-up because Karl Bendy, our prolific questioner from Michigan, is the guy who delivers the Primal Transformation seminar out there. He says: Regarding the bone broth and the glycosaminoglycan that you talk about so much. Can you give us a brief recap view about the benefits of consuming bone broth?

Cate: Yes. The bone broth that you make from boiling leftover chicken bones after you have polished off your rotisserie chicken. Save those bones. Boil them. We've got recipes on our website. There are lots of other recipes on the web. The key thing is to get some sort of acids. Acids come from vegetables. Acids help to break down the joint material. In that joint material is some magic stuff are families of molecules called glycosaminoglycan, proteoglycans, and glycoproteins. These all have benefits in our body that were not really appreciated until fairly recently. Particularly a family of molecules called glycosaminoglycan that are encapsulated into a related form called glucosamine and chondroitin. These are joint supplements that have some benefits on connective tissue health but nowhere near the benefit that you get from boiling bones and having bone stock in your life. What those molecules do is they don't get digested.

One of the reasons there has been skepticism that these molecules have any effects whatsoever is because the thinking was that they would just get broken down and digested and they are basically made out of amino acids and sugar and so it would just be like regular protein and carb intake. But the fact is they actually don't. They actually pass directly through the digestive tract without being digested, circulate around in the bloodstream, freely apparently, and have been found on radioactive tracer studies to end up in joints that are damaged. So they basically are somehow biochemically attracted to damaged connective tissues and it is probably based on charge, because these are very charged molecules. It doesn't really matter why it works. The fact is that it does work. The glycosaminoglycan act as growth factors for the cells in your connective tissues called fibroblasts. Fibroblasts produce collagen. So these growth factors kick the fibroblasts in the butt, wake them up and make them start spitting out collagen at a faster rate. That is what they are for and your joints are basically built around different types of collagen. It is like a growth factor. It is almost like taking a hormone. Hormones are growth factors, too.

What you feel is if you are following an anti-inflammatory diet so that these things can work, you sometimes notice the very next day that you wake up with less stiffness. If you have any kinds of aches and pains, particularly in your hands and feet because there is a lot of slippery collagen that you need to have in good working order in your hands and feet because there are so many little tiny joints there and lots of tendons. People often notice the very next day that they feel the effects of having the bone stock the night before.

Brad: That is fantastic and that is why you are such a good proponent of it. I have to say, this is why we love you, Cate. This podcast was incredibly informative. You have talked about some stuff that I have never come across before. I hope our listeners have really enjoyed it and can give a thorough review of the transcript produced by Gail Kearns. She'll have a lot of words to try to get the spelling right but this is

great. There are so many people looking for the fountain of youth and the concept of taking an anti-aging regimen that would magically make everything quickly better. Now you can see these folks from across the restaurant, so it is not so simple. Maybe it is when you start to think about an anti-aging regimen that is as simple as adding more bone broth to your life.

Cate: Absolutely. It is simple. You can take a lot of control yourself without having to get expensive tests or weird supplements injected.

Brad: That is great. Thank you so much for taking the time today to do the Primal Blueprint podcast and enjoying our time with our guest, Dr. Cate Shanahan. This is your host, Brad Kearns. We will talk to you in the future. Please send in or record a question for Dr. Cate @blog.primalblueprint.com. If you are ready to take your health into your own hands and optimize it to the maximum, check out the Primal Advantage One-on-One Metabolic Consulting Program with Dr. Cate herself. You are going to engage directly with her on your blood work, on your dietary habits and get a comprehensive plan of attack to get everything working properly for you. Thanks so much for listening to the Primal Blueprint podcast.