

Menopause, Stress and Female Hair Loss – Dr. Sophia Kogan with Dave Asprey – #793

Announcer:

Bulletproof Radio, A State of High Performance.

Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. Today is an episode that you guys have been asking me about a lot. And the reason is that I talk about hair thinning and fasting, and people have been saying, "Dave, okay, what about fasting for women?" And there's a chapter in the book about that. And I warn people that look, both men and women, if you over fast, or even if you over keto, or actually if you over vegan, any of those three things can create hair loss as one of the later stage signs that what you're doing, isn't working very well. And you guys also know that I've done some recent work on my hair, it's way thicker than it has been in a long time because of some supplemental stuff that I'm doing as well as the episode with Dr. Alan Bauman, where he moved 10,000 individual hairs from one place to another, which was kind of cool.

Dave:

So anyway, I've got better hair than I have in a long time, which was never that bad anyway, but I've been focusing on supplements and all. And since you guys have asked about fasting, you asked about hair loss, you asked about menopause and stress, I have the guest for you. She's returning to the show and she's an expert on all of these things. And her name is Dr. Sophia Kogan. And she spent a long time studying, researching and treating patients more than 10 years, looking at hair loss, hair thinning in men and women. So we're going to talk about that in this episode today. So whether you're a guy, whether you're a woman, you're interested in what's going on with your hair during pandemic stress or any other time, especially in the context of stress and fasting, we've got an expert and we're going to learn from her today. Dr. Sophia, welcome back to Bulletproof Radio.

Dr. Sophia Kogan:

Thank you, Dave. It's really fun to be back. I do want to say I'm more of a researcher than a treater, so just in terms of my timeline-

Dave:

It's a fair point. Clinical researcher. You also just came out with a brand new paper about, Oh, actually less than a month after you published the paper, I've got you on this show and you're the what? Chief scientist for Nutrafol on the supplements I talked about before on the show.

Sophia:

Yeah.

Dave:

Okay. But you guys just published a pretty interesting paper, looking at perimenopause, menopause and women and hair loss and what you can do about it, which is the other reason why you're on the show. So basically the hair, stress, fasting, all that kind of stuff. Let's jump in on not necessarily the new study you did because we'll get there, but you've told me off camera that you've just seen a huge increase in hair shedding recently. Not personally, but just in the world. What's going on with that?

Sophia:

Personally, too.

Dave:

Oh, personally too? Well, your hair looks pretty good. It looks like it did last time, but you have a lot of it. So I guess it's just a forest but-

Sophia:

So my hair started shedding again when the pandemic started and I just noticed it and I felt it and I was like, "Oh I'm very..." You have to be genetically predisposed to some degree. And I am, and it happens to me anytime I'm stressed, I get to manifest like this. Not everybody will, but a lot of people do. And right now, more than ever, people are coming forth saying that they're shedding more than ever. Now, the reason around this statistic, it's not just something that I made up in my head, I noticed myself and I felt like that was going to come but now we're hearing that from our doctors. So I speak to a lot of dermatologists who treat people. And what they're seeing is a humongous rise in something called telogen effluvium.

Dave:

Yeah. Explain that. I mean, we talked about it last time, but some people didn't hear that episode. So it's a defining for people. It sounds pretty fancy.

Sophia:

Yeah. So the follicle, right? All of our follicles are on their own biological clock. They're kind of ticking and going at their own pace, each one. And they're going from the growth phase, which is called anagen to the regression phase, catagen to the resting phase telogen, after which they're just slated to kind of fall out. So at some point they're just there resting. And what happens is when we have a tremendous amount of stress, like for instance, we had even earlier on in the pandemic and even currently, I would say that there's a little bit of a shift in terms of how stress is perceived now, it's was really acute and now it's a little bit more chronic for us. But from that point, when you have this massive amount of stress now it could be both physical or emotional.

Sophia:

So it could be a strong shift in diet, a huge weight loss. To get to your point about fasting, it could be a psycho-emotional perceived threat, a life-threatening event. Now, if pandemic is not a life-threatening event, what is right? So for a lot of people, what happen is that those follicles are synchronistically shifted, a huge number of them into that resting phase. So the body says, "I want to pull the resources internally. I don't really need or care about hair. I want to preserve my life." And so it goes to the vital organs. And so that's what happens to the hair growth cycle and it shifts and all of a sudden, we have a massive amount of hair shedding about three to six months later. And that's actually what happens to a lot of people. Some people, that progresses to a more chronic situation.

Dave:

It actually makes so much sense just from an evolutionary perspective. If you're going through a lot of stress and it could be you have some chronic infection, it could be that you were in a car accident, you got whiplash, or you had a big breakup or a financial loss, anything on the WHO list of stressors. Well,

the body is like, "Okay, I'm going to shift my resources towards survival." And frankly making hair probably isn't super high on the list. It's very elegant that the way the body says, "Oh, I have this the honeydew list that I might have, isn't that well ranked by importance." But the body's so elegant, "I'm not wasting one amino acid. I'm going to shift it to this because this is slightly more important than that." And we don't know the exact order and it probably changes based on all these variables in real time, but hair just can't be that important, right? So it's no wonder, that if people now are having hair shedding it's because they got tweaked three to six months ago from watching the news about the pandemic.

Sophia:

Exactly. So what we find today actually, which is that this rise in telogen effluvium, which actually is documented now. Now we have a little more, data in the beginning of the pandemic we didn't. Now we're having to find papers about surveys and things like that, and actual observational and multicenter studies that have shown that there's this rise in hair loss. And what we've gathered so far is there are two types of people. One are people who've had COVID and then the other ones, are the people who are worried about having it. So now you have a physical stressor, right? So telogen effluvium is actually a... COVID could be a risk factor for telogen effluvium, because you have gone through a febrile illness. And that's-

Dave:

And any infection like strep throat, any cold, any flu, a few months later you can have hair shedding, right? Because it was a physical stressor.

Sophia:

Exactly. And although we don't know the exact pathophysiology of how COVID causes hair shedding, because right now we know with the long haulers that there's a ton of people coming back saying that hair loss is a manifestation that you find later.

Dave:

Cortisol would explain that, right? Just like stress hormones went up. And so, I mean-

Sophia:

And it could be inflammatory. Well, what was interesting is about 14% of those people actually were asymptomatic. And so the question is, Oh, so if it's not physiological, if it's not the febrile illness and if it's not the inflammatory things it could be medications, but it also could be those people that are really stressed while they have COVID. And so again, that stressor could be both emotional and physical. And the other half, right? The other people that are coming and calling us and going to the doctors are the people that are experiencing extraordinary amounts of stress. And I'm not just saying COVID related because about 78% said that they were worried about COVID. But about 83% of Americans actually said that they're stressed because they feel like this is unprecedented. They don't know what's going to happen to the nation. They feel like it's the lowest point in our nations right now.

Dave:

Or they have lost their job, they lost their company, they're going bankrupt, they haven't seen anyone, their kids aren't in school, and they aren't...I mean, it's amazing all the bad things that come as a result of our reaction to things. I can see why people would be stressed, even if you didn't have it, right?

Sophia:

Exactly. So the American Psychological Association every year, I don't know if you noticed or not, but I know this because it's super interesting to me. They do a survey each year of how stressed Americans are. And just to give you a perspective in 2020, instead of doing one survey, they decided to do it monthly because it was so bad that they said that actually and I quote this, "And a national mental health crisis, that could yield serious health and social consequences for years to come."

Dave:

But we must not account for that in our political decision-making definitely. Let's just say that aside.

Sophia:

I know, right? So the truth is that there's stress. I went through this report and I was shocked, the statistics are so great grueling, right? They're saying that the level of economic stress is to the level that we've seen in 2008 during the recession. And this is the only year where they saw such a statistically significant increase in stress from the year before. So they've never seen that from the time that they started doing that in I think 2008. So I think what we're experiencing now is the tip of the iceberg of what is going to come later on and for the years to come. People who have children are more stressed than the ones that don't. And what's really fascinating is that the younger generation actually is most stressed. They said that the millennials, and they just have a loss of sort of idea of what their future is about to be. And so they're very stressed. I mean, they're a very stressed generation in general, so.

Dave:

So they're all going bald?

Sophia:

No, we don't know yet, right? These are young individuals. So it's a matter of seeing... And a lot of people are stressed about the future of their children or how the society... How are we going to adjust? And I think it was like 70 plus people were worried about their kid's social adjustment in the future. So it's a lot of things that people are stressed about and follicles are very sensitive to stress.

Dave:

One of the other stressors is clearly nutritional. So if you've said, "Oh, I'm going to put on my COVID 19," as in the 19 pounds you gained from sitting at home because it's illegal to go outside in some parts of the world right now, I haven't figured that one out. But it's also that people are eating more, they're stress eating, they're eating more junk food and things like that. And that has an effect just because you have less nutrients and more inflammation, and so you get that kind of a stress. You also get then people who may be are using the time, "Okay, I have more control of my diet, I'll do things." And this whole fasting thing, I'm such a fan of intermittent fasting. It's been 10 plus years. I wrote a book about it, but one of the big reasons I wrote it, is like, "Hey guys, if you do this too much..." Because it feels really good when you fast for a day or fast for an 18 hour fast when you learn how to do it.

Dave:

But then you're almost guaranteed to say, "I'm going to do this every day forever because I just love my life," and it's so predictable. Women get it first. Sleep quality goes down, you go, "Oh, it's probably because I'm not fasting enough, let me just fast, even more." And you're like, "No wrong direction." And

then "Oh weird, my cycle's a little messed up and Oh, look, here comes the hair loss." And it's like lockstep, it always happens. And I think it probably happens faster if you're perimenopausal because you have enough other stresses or hormones to adjust. So it's like lifting heavy every day is going to cause stress, it will cause hair shedding too, because it's too much for the body to handle. It's too much stress. Do you have any thoughts or advisory? It can be just theories. It doesn't have to be proven by studying. How do people know how to manage their stress load between exercise stress, either junk food stress or fasting stress and all these other stressors to know, "When should I do something that's not going to push me over the edge where I start getting hair thinning?" Is there a measure of our stress, is it heart rate variability? How do I know if I should work out or fast or whether I'm just so worried about the pandemic I should just sleep extra because I don't want to lose my hair?

Sophia:

It's a good question. I think it's always about... Well, first of all, you said something really important. Women are more susceptible and I think that's something I didn't mention is that in all of those reports, it was mostly women that were coming back with the hair shedding and telogen effluvium. Telogen effluvium is found predominantly in women.

Dave:

When you say predominantly how predominant?

Sophia:

I have to get the exact stats for you. But from my days in residency, I don't think I... I mean, you ask that to balance, you'll check men, literally probably 80%. I don't want to quote an exact number, but I think it's a very high percentage of women versus men who experience it.

Dave:

So it's about four times more than men. And Alzheimer's, there's twice as much Alzheimer's in women as in men too. So it happens that way. Okay.

Sophia:

So in my humble opinion, that's related to the fact that I think adrenal fatigue and all those things happen more commonly also in women. We have cycling that happens, and so we have more to deal with in terms of our bodies being finely regulated and finely tuned. So when something goes out of whack, it really kind of goes across all. Because nobody really understands why it is mostly women that present with these things, especially also with autoimmune disorders and with thyroid, to disorders in subclinical thyroid disorders, which are on the rise. I think we don't know why it's women, but we do know it is mostly women. And I think it's because we're more sensitive to stress. I think we might be more resilient to showing it outside, but internally we're more sensitive or our fine tuned mechanisms are more sensitive.

Sophia:

But to answer your particular question about how and when, I think this is going to be less scientific and more intuitive because I think if you are ultimately feeling... If exercise does calm you down and some people they really need to get that energy out and that's their way of feeling better internally, then maybe that's the right thing for them. You have to find one or two things in your life that are going to keep you sane, especially now. For me, when the pandemic hit, I was... We have so many different levels

of stresses that we're dealing with. Some people have kids, some people are battling loneliness. Most of us are really just kind of hunkered down. It's hard to be inside. I was in New York City for most of the time now and now I'm close to you where there's more nature and I'm able to go outside.

Sophia:

So there's just so many different things. And I think for each person it's going to be really different, but they've got to feel a feeling of calmness because that's when you calm the nervous system. If the exercise is just going to wind you up, then find that time to breathe afterwards and sit down. For me, it was about dance. This is what de-stresses me and for you, it might be a different type of... It might be cooking, it might be something where you get in a state of flow. And that's the meditative state that we all look for. So I don't have a strong, scientific answer for you in terms of that, but I do think you have to listen to your body.

Dave:

So you can get sort of an intuitive assessment of how stressed are you, and maybe on that day, don't push yourself even further. But on a day when you're feeling pretty energetic, you can push yourself a little bit because then it's good stress versus adding good stress on top of bad stress equals too much stress.

Sophia:

Exactly. And it's stacking, right? It's exactly what you said. We call this allostatic load, essentially. So we're all striving towards homeostasis, but in reality, what we're really striving for, it's towards allostasis. And for anyone who doesn't know the difference, homeostasis is where there's static and allostasis is mobile. So it's actually, how do we change to adapt to stress? Because stress is not static.

Dave:

It's adaptive, it's resilience. At the end of the day, that's what everyone is looking for. And it's an underpinning behind the whole idea of the state of being bulletproof that's been the mission for 10 years of doing this, it's I want to know I have enough energy to handle whatever life brings my way, which brings me peace, right? So, "Okay, I can handle this, right? I've got it." And if you feel like, "Oh my God, with all this stuff going on now, maybe I can't handle it," your stress level goes up and maybe that's a day you don't add more stress. And then you maybe do some meditating, some sleeping, exercises, whatever makes you feel good and calm down a little bit and go, "Okay, then today I'm going to do a little bit, I'll lift something or whatever." But I do feel like there's so much emotional and psychological stress, if you take that and you say, "Oh, and by the way, here comes perimenopause or something," which is a huge amount of stress that can be what pushes people over. And what I find really interesting is that if you look at the number of papers on hair loss, there's a few more papers on men than women, right?

Sophia:

Don't even get me started on this or get me started-

Dave:

But you did your study on women, which I thought was really cool, because it's same with fasting. Two thirds of the research out there it's like, "We did it on men." Well, it turns out, and this is going to sound really offensive, but women are not little men. There's differences, it's not really offensive, but some

people still get mad when you're like, "No hormonally it's different." So you targeted women at perimenopause and menopause with hair shedding problems. And you said, all right, can you use, I'm going to call it the algorithm from Nutrafol, but basically you guys figured out pathways for hair loss and you put the right supplements in, in order to prevent that. And you have the stuff that Dr. Alan Bauman gave me after he did my hair follicle transplant. And this somewhat we've talked about before, but you have the women's formula for this and you clinically studied it. Why do women lose hair during perimenopause? I mean, I've seen it in so many of my friends. They're like, "What just happened?" Do we know that pathway?

Sophia:

So to give you perspective, right? There's a lot more studies on men than women, a lot more. And not only that, but there's a lot more less studies on menopausal women. So I think there's that kind of gap in terms of the gender, but there's also a gap in terms of who are we targeting? Who are we looking for and who are we forgetting? But to give you perspective I believe it's almost 50% of people who are suffering from hair loss are women. So it's not really adequate to have such a misplaced amount of attention on research on men versus women. And then also we have a fastly aging population and one third or two thirds of a woman's life is spent in menopause one third, right? Yeah. Okay. So we really have-

Dave:

Not in my world. Because we're all going to live to at least 180. So it might be a lot more than that.

Sophia:

It might be even more than that, exactly. In your world, if we're really doing everything that Dave tells us to do, then we might be spending even more time during that period of time-

Dave:

You could easily spend 50 to 100 years in menopause. It's entirely possible.

Sophia:

Exactly. And so it's really important that not only does the research community pay attention to this population, but also the industry. And so for us, what happened to us is that actually the doctors came to us and said, "Hey, it seems like the men's product is working slightly better for the older women than your women's product." They figured that out themselves. And so we said, "Oh, that's interesting. Okay, let us go back and see." Well, it turns out that not only are women, not little men, like you said, we have absolutely different hormonal pathways and factors that contribute to what we need, but also women have very strict sort of phases in their lives, right? Men don't really have that as much. I know that they have hormones that are much more gradual, but a woman she has, menarche when she starts having her periods. Then she has children, if she wants to have children and that's postpartum. There's obviously a shift and often enough women lose hair-

Dave:

Lots of hair shedding after pregnancy, right?

Sophia:

Exactly. And also for the reason that the body kind of adjusts and knows what to do. And then there's menopause, right? And so we're often forgetting that there's that stage in life. And what's interesting is that in many cultures and this used to be a celebrated age. And in fact, we know now that women in this age group are leaders in society. And so to treat them as kind of like lost and sundowned and turned off completely irrelevant-

Dave:

And not even studied in medical studies is ridiculous. Yeah.

Sophia:

It's ridiculous. So what we did is we decided to see what's happening. And so we went back and researched it. So essentially, and there's very little literature there. So it's a lot about tying the dots together and understanding what's happening. And I think you know a lot about aging and mitochondrial aging and all of that, so that all contributes. But essentially one of the most important things that happens to a woman during that time is that the ovaries tend to shut down rather quickly. And so the estrogen and progesterone are actually kind of declining at a rather quick rate while the androgens are still being produced. And although they decline with age, they decline much slower. And relative to the estrogen and progesterone, there's going to be a dominance of androgens. And if you're stressed, you're actually going to contribute to that.

Sophia:

So in addition to having the estrogen, progesterone and androgen disbalanced, you also have high levels of cortisol, which we just talked about. And that can additionally add to the disbalance because that shuts down your estrogen, progesterone production even more, and it kind of diminishes the sex hormone binding globulin so you have more androgens to float around at the follicle. And what we know now is that it's both estrogens and androgens that play a role in the finely tuned mechanism of hair growth. We don't actually know the exact impact of estrogens 100% but we do know that they play a role. So it's really the balance. It's the metabolization of both hormones at the follicle itself, which is why some people are more predisposed and some are not. So what we tend to see is a lot more of what we call female pattern hair loss even, in that age group, some scientists and researchers and hair loss gurus, believe that actually they kind of tie the mechanism of post-menopausal or menopausal hair thinning to female pattern hair loss, or some of the same mechanisms.

Sophia:

And it's still kind of vaguely described again, the research is rather little. And what we did is we dove in into everything that exists out there, but there's so much more to be done, right? We know some of the changes are actually decreased hair growth rate, the percent of hairs that are spent in the anagen phase, which is the growth phase, and the decrease in hair diameter, as well as the change in diameter distribution that happens during menopausal stages. And that's just related to menopause, but there's also changes that happen with aging, that are absolutely normal and will happen to everyone. And they kind of stagger because what happens is our hair density naturally peaks at around 27 and then declines after that. And the same thing happens-

Dave:

Unless you do some stuff. You say it's inevitable, but it seems pretty hackable.

Sophia:

I don't think it's inevitable, I'm saying that's what normally happens unless you're Dave or unless you're us trying to buy a-

Dave:

You don't have to be mean, but these are things we know happen if you don't do something. And we're every day learning more of the things you can do like, "Oh, if I wanted my hair to be like it was when I was 27, what's it going to take and is it worth it?" And the cost and effort of doing these things over time will drop as we become better at doing it. And so this is why anti-aging is a real thing, because it's happening.

Sophia:

Well, so this is the lay of the land and what we do about it is what we're going to be able to talk about right now, right? So 27, eight. Yeah. So the peak is there. So imagine that decline is kind of slowly after that actually it's mid 30s afterwards, and then the diameter actually peaks at around 37 declines from mid 30s onward and 40s. So by the time you reached menopause these stagger. You can see them-

Dave:

So then you're basically dealing with, you have less hair and the hair you have is thinner than it was before. It's not as thick hair shafts. So then you really... It starts looking way more straggly than you're used to, and then you'd go like, "What's going on?" And it affects a lot that way. Because you're used to looking a certain way in the mirror and you don't anymore and it's a relatively sudden change around perimenopause. And that's mostly because you have a lot less hair because of hair shedding or is that also a sudden thinning of the thickness of the shaft?

Sophia:

Well, it's actually both, right? And so the follicle gets miniaturized, it becomes thinner and smaller. There's less of it. There is less hairs in each follicle. So these are things that are very progressive. You might not see the change right away, right? It's just a cumulative effect over a period of time. But I think if you know that's what's going to happen again, what can you do to intervene, right? So that's my opinion is you just have to try to do it before that. And you could certainly also catch up and you can certainly use... We created a product for instance, that we tested specifically for those women because of the feedback we got from our physicians. And that's why we know it works.

Dave:

There's no doubt that prevention is way easier than reversing. And all the years that I spent as a really unhealthy young guy running an anti-aging nonprofit group where all the members were two or three times my age, I know for a fact that preventing that stuff is 10% of the work and costs of going and saying, "Oh, look, I'm 80, I want to be 40 again." You can probably pull that off, but it's going to take a lot of effort and time and energy and dollars. And so I let's do the most efficient thing. And so you're saying you take care of the hair when you're younger, you'll have more of it when you're older. But what'd you find for older people or at least middle-aged people in your study or for women in your study because that's what you studied. You gave them the Nutrafol women's formula you'd put together, what'd you find? This is a placebo controlled double-blinded, like a pharmaceutical company would do, but it's for a supplement. What happened?

Sophia:

Yeah. So we actually included only... So to your point, right? It's prevention, but it's also, what can we do for those that are going through it? So what we did was we went for those who are going through it because we want to see what happens to them and how we can help them. So we took women from ages of 40 to 65 and who were actually going into perimenopause and there's definitions for perimenopause, it's irregularity and menstrual cycles, et cetera. And it could be amenorrhea for more than 60 days and then menopausal, which actually is defined as absence of periods for about 12 months and post-menopausal women, right? So we went through all of those. We included all of those women, some had other menopausal symptoms. I think the highest number of menopausal symptoms that are other than hair shedding or hair loss was actually hot flashes.

Sophia:

So we took all those women and we put them through it. And of course it's a placebo controlled trial, so it's a double blind, placebo controlled randomized. So we did a high standard. And we really found that the product actually increased terminal... So terminal hairs are the thick ones, right? And vellus hairs are the tiny baby ones, they're thin. Terminal hair is what you really want to increase, but you want to affect the vellus hairs as well. So the terminal hair is increased by about 10% on day 180. So that's six months. Again, this stuff takes time, right? So we did three months, they improved and then by six months they really had a great improvement. All of this was statistically significant against placebo and against baseline. What's interesting with the vellus hairs, is that the ones that were taking Nutrafol actually, they had an increase of about again 10%, but the ones that did not take Nutrafol had a decrease that was also statistically significant and it was about 3% decrease. And-

Dave:

Wow.

Sophia:

Exactly. So there's your prevention angle. So my opinion you can hypothesize about why that happened. And I think it's really the progressive nature of what happens is that if you don't intervene, you're actually going to have a progression. And you could say that those vellus hairs could be turning into terminal ones and that's why you have less, but because for the active ones it increased, right? So then it doesn't make sense that happened. So I believe personally, and that's what we wrote in the paper, that was really a sign of that if you don't do something, that they're going to continue to decrease. And another measure that we used that was really important, I actually didn't realize how important it was until the study came out and we sent it to our doctors and our doctors have been using the product for a bit. One of our doctors, Dr. Val Callender, who was great. She said the shedding was the most important for her. So you asked what happens to women? Apparently they see a lot more shedding. And so for her, that was something that was a huge measure. And we actually saw a huge decrease, about 30% decrease in shedding by six months in those who were taking Nutrafol.

Dave:

So why does it work? What pathways are you guys hitting? I know you have a bunch of herbs in there. We talked a little bit about this in the last interview, but a lot of people haven't heard that. So why are you able to do this? I mean, are you turning down cortisol? What are you manipulating?

Sophia:

Great question. So like I said, the reason why we created the formulations specifically for these women is because we realized that there was an improvement that they were getting from the men's formula. And the reason was that it was the saw palmetto. So we actually target the androgen dominance. We targeted by using DHT blockers. One of the DHT blockers that we use is saw palmetto, and that's very specific. So we increased the amounts specifically for this population of women to address this adequately. And-

Dave:

And just a little side note, saw palmetto is best known for men who take it for prostate issues, right? It's the most common reason people would use that herb all by itself, but like, Oh wait, it has affects in women and they're different. So use it to block DHT, which is what happens when testosterone breaks down via one of its pathways. DHT is biological useful, but not too much of it because it gives women that female pattern hair loss, that's similar to the male pattern hair loss, right? And this is an oral supplement, you don't have to smear anything on your hair. You're just taking it. Okay. So that's one path, right?

Sophia:

Women don't like smearing stuff on their hair, by the way, just so you know. That's-

Dave:

No, guys don't either. It's not fun.

Sophia:

No. And that's why women don't love using Rogaine Minoxidil because when we asked the question for a lot of women, they said in our study over 80 or 90% said, they'd rather take a pill than put something in their hair, because it messes with our styling. So the other pathways are stress, of course. Well actually let me just go back to the DHT. So another ingredient that we added that was really important is maca, and it has alkaloids that are actually functioning at different levels of the hypothalamus pituitary axis and the hypothalamus pituitary gland nodal axis. It actually tones that at every point it's an adaptogen. So it's great. It not only counters cortisol effect, but it also helps with the estrogen balance. They've actually... This maca is pretty well studied, that's one thing that's interesting.

Sophia:

Saw palmetto, rarely studied for women. I've seen almost no studies except for ours. And maca has had some studies done on it in terms of helping with that transition. So it sort of mitigates that really hard and harsh shift and that decline in estrogen production. It has a few different constituents that do that. And so it's a great addition and I think it's actually works synergistically with the saw palmetto to produce such a great effect. The other ingredients are stress adaptogens, something I love and we have something called sensoril ashwagandha, which is probably one of the best studied stress adaptogens on the market. And it's kind of exclusive to us. We absolutely love this ingredient. And it has over 12 studies, you don't get that from an ingredient.

Dave:

Yeah. It's a very well-studied form of ashwagandha. And just for listeners, what adaptogens do is they make it easier to turn stress hormones on and then turn them off when you don't need them. So if you don't have adaptogens, it takes you longer to go into stress response mode and you stay there for a long

time. Adaptions originally came from military use in China and maybe Russia like, "Oh, what if we give these to soldiers? They can go into battle mode and then rest when they're done, instead of staying tweaked for two days after battle mode, therefore there'll be more effective soldiers." And it turns out it works for our stress response in general. I've been taking adaptogens for 25 years because maybe I had more stress than I needed. I don't know who knows. So that's just a very well-studied one. So that combination you showed had these pretty substantial differences. Did it matter for perimenopause versus menopause? Did one group get better results than another?

Sophia:

It's such an interesting question. So what you don't know is that the study actually was more than six months. What we've published currently is the six month double-blind placebo controlled part. What we have out there still as data that we're still kind of gathering and sorting through right now, that's the one year. And what we did to the second part of the group is that we shifted the ones that were taking placebo because I find it unethical to keep them on a placebo for a year, and we crossed them over, we had them take Nutrafol. And the ones that were taking it already the active, we had them take it for an additional six months to see what happens if they take it longer, right? Because we don't just want an effect at six months, we want to see what happens.

Sophia:

So in that part of the study, we're going to stratify a lot more of the data on what happened to each group, the perimenopause, menopause, post-menopause, so there's going to be more that's going to come out of that. What we know so far is that, and this is just actually the first time I'm announcing it, is that we have preliminary data to say that there was a further increase in those who were taking it consistently for a year in hair counts, and that the ones who crossed over saw an improvement in both shedding and in growth. But other than that, there's going to be more information that we'll be able to bring to you maybe next time.

Dave:

Once you get the data, I get it. You have to get your full results. One of the things that I find really irritating about hair is it's the worst biofeedback system ever. Because you do something and go three to six months later, it's all going to fall out. "What did I do three to six months ago?" And you can sometimes target it at a specific emotional, or a big physical event. "I was bedridden for two weeks." Well, there you go. A while later, or even, "I had a baby and then Oh, three to six months later proof, what happened to all my pregnancy glow hair?" From a perspective of whether you're a man or a woman, doing something consistently for six months to see some results, and you're seeing 10% change over six months, which is actually a phenomenal change, but it's different than, "Oh, look, here's a mitochondrial resuscitate kind of thing." A lot of the [inaudible 00:39:28] I'm like, "Oh, you take it?" "Wow. I had the best day ever because I was making more energy right now. And then I didn't take it. And then I did."

Dave:

And so you can really... It's like driving a race car. You turn the steering wheel and it turns, but if you're driving a ship, you turn the wheel and it kind of slowly turns over the course of a mile. And I'm working on some stuff with my hair, stuff that I don't think anyone else is doing, but I've had a substantial reduction in gray hair. I think I can actually turn my hair all back to not gray. And when I look at it, there's still some gray on top, but it's way less gray than it was before there's no dye or anything in there

like that. I think it's working, but it's going to take me at least a year in order to do this, probably 18 months, right?

Dave:

And I will share what I did, assuming it does work, whenever I'm convinced that it worked and in typical bio-hacker fashion, find every pathway that might be involved and hit them all at the same time, because I don't care, which one thing worked. I just wanted hair that was the color I wanted it to be. And then we can start backing out and people can share in true community fashion. But it's the long feedback time, it drives me nuts. I'm doing stuff every one or two days and I have no clue and I won't for awhile. So I appreciate you're doing a whole year study with Nutrafol to see what happens. But for people listening, if you do anything for your hair for a month, you're probably not going to see very much unless it's hair dye or some kind of cool conditioner like, "Oh, like my hair was fluffy," or whatever you wanted it to be.

Dave:

But if you're like, "How is it thicker?" And you also won't see the changes unless you're an expert and you look in, "Oh, I counted the number of micro hairs per cubic centimeter and whatever." You guys have quantitative ways of doing it that even if you wanted to at home, what do you do? Part your hair and take a picture with your cell phone? You would have to go in and get it clinically evaluated. And that's what Alan Bauman did for me when I went in for my hair follicle transplant thing. And so I'm fascinated because it's the hardest to hack. And it's as hard to hack your hair as it is some of the anti-aging metrics. Because we don't know the right anti-aging metrics to say, well, you changed it. But a lot of the things take time.

Dave:

It takes seven years to replace half the collagen in your body, right? It takes two years to replace half the fat in your body. And those are the things that make the biggest difference. I would just tell you guys, if you're going to say, "I'm doing something to my hair," do it for six months. You have to do that, minimum six months and then say, all "There's a difference and take a picture at the beginning or ask someone who doesn't see you that often or something because it's like my kids, "I've always been this tall." I'm like, "No, you actually used to be half as tall, but you can't see yourself grow taller and you can't really see your hair like that." So it's very frustrating to me, but I swear when my hair is completely not gray, then I'm like, "Okay, it worked," but well, we'll see.

Sophia:

That's amazing.

Dave:

Tell me about gray. What don't we-

Sophia:

So I mean, there's so many different reasons. So it's the aging process, right? You have mitochondrial decline in aging and so you have less ability to convert reactive oxygen species, there's buildup of hydrogen peroxide. All of those things are going to contribute. Also with age, you have up-regulation of oxidative stress and inflammatory genes in the follicle. So there's a lot of things that are going on with

age. But also stress, right? There's a paper that came out in 2020 actually, which was a really interesting paper. And it said that, do you ever hear of the Marie Antoinette syndrome? It's-

Dave:

I don't think so. I know about the off with her head kind of thing.

Sophia:

Exactly. So she went gray right before that. And so that's the story. I don't know if it's true or not or whatever, but the truth... But we know stories like that, when somebody got really stressed and went gray overnight, how does that happen? So the neuroendocrine system actually sends a signal down and what happens is that the melanocyte STEM cells are mobilized and then mature all of a sudden very quickly. And all of them aren't matured and so the reserve is gone over time. So as we're stressed, so that's actually the study kind of proved that and said that, okay, that's what happens. And they saw it on a molecular level that there's some maturation of the STEM cells into mature melanocytes and then, boom, you've got nothing left.

Sophia:

So that's one of the fascinating things and you know what they mentioned? Just so you don't strive towards complete lack of gray, but what they mentioned was that there's these gorilla monkeys that pick... We said, what's the evolutionary sense of going gray?. Why does this happen to us? Why would the body just do that? It makes no sense, right? But there is a sense. Apparently gray hair is associated with wisdom. So these monkeys pick a leader based on how gray the leader is, because they feel that, that leader must have gone through enough stress to get the amount of wisdom that they need to be a leader.

Dave:

You just reminded me of something. I haven't thought of this in years. So when I first went to Silicon Valley, I was maybe 23. Okay. I'm just starting out in my career, right? And I'm starting to accumulate some abilities, technical expertise and all, but everyone knows, okay? If you're 45 like, "Okay, this guy's still from a 45 roles perspective, kind of a kid." There's a lot I don't know, there's a lot I don't know that I don't know, and I think I know more than I do. And I was thinking, all right, how do I get a raise? Or how do I get a promotion, how do I get a new job? And I literally went into a hairdresser and I'm like, "I want you to dye my temples gray." So I can go into the next job interview, they're going to think I'm five years older and they're going to pay me \$25,000 more a year my salary because salaries go up with age in general.

Dave:

And they're like, "We don't make hair dye to make hair gray. You can't do that. We can make you blonde." I'm like, "No, can't you make it gray?" And they they're like, "Can't be done." And I was so, but I actually did that, because I'm just like, "This is not fair. I'm already fat, I could at least be a little bit gray." And so you just reminded me it's true. It's a sign of wisdom. I'm with you there.

Sophia:

You were ahead of the times. You literally knew what happens evolutionary. And interestingly enough, you see there was a trend a couple of years ago where all the millennials were dying their hair gray. So-

Dave:

Yeah, now you can do it.

Sophia:

... I don't know that, has something to do that, you can do that now. Now, if you went to a hairdresser, they could make you gray anytime, but now you're fighting against it.

Dave:

Yeah. And it's totally true. In fact, I don't know if they still do this because I left Silicon Valley primarily about 10 years ago from a career perspective. But we call them gray hairs, the engineers who know how shit works. Every meeting needs a gray hair because right now guys got all kinds of young creative, visionary energy, but there's always a couple of guys like, "No, no, no. let's talk about how it really works. And they're the guys who are like wizards. They can look at a huge problem and say, "That's where the problem is." And then we can all work as a team. But if you had a team that was all gray hairs, that can't be done. And if you had a team that was all young people, then they wouldn't know what they shouldn't do. And so it was really neat to have a mix of ages, but it's a sign of wisdom, right? And so I'm working on creating this world where a lot more older people have a lot more energy. So we have a lot more wisdom that we can share across all the generations. And I think that's going to be fantastic. But if you can't recognize the older people, because they don't have gray hair, you'll just have to go on competence. And I like that better.

Sophia:

I like that too. But it kind of also tells you a little bit about our societal norms and speaking of menopausal women who are also going gray at the same time. Again, there's that question, is it a bad sign or is it a good sign? I don't think we should the book by its cover. But at the same time, there is merit for evolutionary changes that happen to us in some capacity and we can fight against them. So I think using antioxidants is a big deal. You have to boost your own because we're declining an antioxidant potential as we grow older. So an ability to say that's one of the things that we added actually into our menopausal product is that we added a really powerful antioxidant in addition to what antioxidants that we already had in our previous formulations. And that was exactly about what you're talking about.

Dave:

Which anti-oxidant was that?

Sophia:

Astaxanthin which has about 600 times more power than vitamin C. And-

Dave:

I think you almost can't get enough astaxanthin it is so powerful. It's in the fish oil stuff that I make for Bulletproof and it's in the eye armor stuff that I make. And I get a combined total from all sources of 12 to 15 milligrams a day. Yeah. It's a big deal for anti-aging, I love it that you guys have that in there. What a great addition.

Sophia:

Yeah. And-

Dave:

You were saying something about... I didn't mean to cut you off there.

Sophia:

No, I just said I love the red color. That was purely aesthetic.

Dave:

Well, it's what makes shrimp red, it's what makes salmon who eat their phytoplankton red and man, it's one of those really powerful things that I wish everyone had more of. So adding that in for hair loss, I didn't even know that it had an effect on that, but I love it that you've made that change because it just makes so much sense. Does it go after proxy nitride? Is that the hydrogen peroxide thing that's the issue?

Sophia:

Yeah.

Dave:

I didn't know it even did that. Okay. I was just, "It must do that if you put it in there." Okay. Wow. Now one of the things that I have endeavored to do on the show and on my social media this year is when I actually use something, I do everything I can to save people money on it. And so I ask people to come on the show, if you're going to talk about something cool you have to give us a discount. I do not use the women's formula. I'll be pretty straight forward there. But still you were nice enough to give 20% off at your first order of Nutrafol nutrafol.com use code Dave, you get 20% off. And does that work for them men's formula as well?

Sophia:

Yeah, it works for... We have three different formulations and the one we were talking about most in this particular segment is the women's balance. And that is for that woman that is going through the menopausal transition or approaching it because again, we want to take preventative and the actionable angle. And men's and regular women's product. So for those women that are younger and each of them, well obviously, if you go on our website, you'll get a 20% off. And if you happen to go through the quiz, you can also get different booster packages. So if you're extra stress, you can have an extra stress booster additionally to that and we talked about that in a different episode a lot, but definitely the more adaptogens you can get, the better.

Dave:

It really makes sense. And so for people who are paying attention to that, I really honor the fact that you said "We're going to make a product for women at perimenopause and menopause," because it's a lot of people. And things are different there, and I did my best in fast this way, or I'm like, "Okay, I can have a chapter and I can talk about the differences for women and perimenopause and menopause, but oftentimes the studies are lacking." And so you're like, "Oh, we'll just do the study and then we'll make this stuff." So I just think that's cool and we need a lot more of that out there, because like I said, we

have an aging population and what I would like everyone listening to know is it doesn't really matter what your age is.

Dave:

If you're 25, whether you're a man or woman, there will come a time in your life where you're going, "What the hell just happened to my hair?" Even if you're one of the lucky ones, like I am, all the guys in my family are super bald. I've kept my hair really, really well compared to my genetic predisposition. But I'm like, "It's getting a little thin," and then Alan was like, "Hey Dave, why don't you do an episode on some you don't really need and we'll just move some hairs around," I'm like, "This is cool. I'm going to be around for 180 years. This is going to solve a problem. And I'm super stoked on it." And when I walked out of his clinic, he gave me some, Nutrafol. He's like, "Here you go. Here's a couple of bottles. You need to take this stuff." So it's definitely something you can do, and I'll say you can make it thicker and better looking and healthier when you're young.

Dave:

But if you do that and then you're stressed and you're tweaked and you're over veganing, you're over fasting, you're over ketoing, you can undo that even if you are taking supplements. So you've got to manage your stress load, push yourself when you ready to be pushed, recover yourself when you've already been pushed far enough by the world around you. And that algorithm isn't just about hair, it's like hair, skin, brain, muffin top, everything. That's how you take care of yourself. And so I think it's cool that you said there's different age groups, different categories. Let's do the core science. So kudos.

Sophia:

Thank you. I feel very proud of us. This is the first study that came out on women in menopause or who are going through hair thinning that for a natural supplement there's virtually nothing even on that non natural supplement. So we're very proud of ourselves for taking the first step and kind of leading the industry in that and the research community as well. And it pays a special attention to population of people that needs it.

Dave:

Keep doing it and then save me a bunch of time and effort with a bunch of weird chemicals. If you could just make me a little pill that would turn gray off, I mean, how hard could it be?

Sophia:

I'm not going to listen to what you are saying because 100%... Listen, some people actually do feel like their hair... We see new hair sometimes growing in that is darker. I think it is really about tweaking it for that specifically, we haven't done that. But I welcome your feedback.

Dave:

Well, we know less stress works and I did go through a really stressful period about three years ago where I did get a traumatic brain injury and I was dealing with a whole bunch of different stuff at my different companies and just a lot. And I noticed the hair, it absolutely does get grayer and it can happen relatively quickly. I'm like, "What the heck?" And then it's like, well, is it's partly stress, but it's also partly I realized I was taking an imbalanced amount of zinc and copper. I was probably making myself copper deficient by overemphasizing zinc. So I cranked my copper up a little bit, but you don't want to be

copper toxic. So I did a red blood cell test. So most people hear zinc, "What?" Well, here's the deal. You might be a little bit low on copper, which could be a part of it, or you might be stressed, right?

Dave:

Or you could have too much hydrogen peroxide and there's all these different variables. And some of those probably also tie directly to hair thinning. So that's why biology is so much fun because it's all a system and you push on it this way and you might get three results. And two of them you like, and one you don't like, and so it's all a game. And the good news is that even if you lose all your hair after it turns gray, as long as your brain works, you're in good shape.

Sophia:

I tend to agree with that. I guess I think everything is multi-factorial when you look at systems biology from a functional medicine standpoint and not from just a Western medicine standpoint, which is, I think what you do as a biohacker, and this is what I'm into as well. And this is what actually Dr. Bauman is into. I really appreciate him for his biohacking brain. It's very hard to find in Western medicine. And when you look at it from a systems biology perspective, everything is connected, the follicle is not outside of your body. So we see... That's why we talk about hair wellness. It's about really changing the systems inside, what you do, and essentially biohacking your way to improve the hair outside. Because I think the outside is always a manifestation of the inside.

Dave:

You're right. And this is one of the reasons that you can say someone looks healthy, and we're wired to think healthy people are more attractive because biologically there's some part of yourselves going, "Could we have a baby together?" And you're like, "Shut up cells. That's not an appropriate thought," but we're biological. That's how it works, right? And we're also wired as a survival thing. None of this is a human thought. This is mitochondrial sensing kind of stuff like, "Oh, should I spend more time with people who look sick or more time with people look well?" Well, if you don't want to get whatever the latest plague is, you probably should spend time with people who look healthy. So we have an unconscious bias that way that's built in at a very low level and all animals have it too.

Dave:

My sheep, it's interesting. Okay, they're in a flock, if a sheep is injured or sick, it will not show you anything because it knows the second it shows the other sheep that it's sick, it'll get kicked out of the flock. And they'll ostracize, "You stay over there because you might have something." So as a sheep rancher, you're like, "Man, you can't even tell. It seems like if a sheep gets sick, it just drops dead." It was sick for two weeks, but no one could tell because they've evolved to hide that from an individual perspective, even though the flocks are looking for the unhealthy one. Humans are the same way, right? We just have different hair.

Sophia:

You touched upon something that's really interesting and that is another reason why we did the study. Another reason why we wanted to target this population is because, and it's something that's really near and dear to me is that, it's a taboo subject. And I think what you touched upon is generalistic it's like our systems are wired this way, but they're even more so wired as in terms of women and also menopausal women. So when I think about it, why is there such shame and guilt attached to it? And the studies that show this actually that women and especially women in that age group go through a tremendous

amount of stress in relationship to their hair, even more so than men because men sort of expect to thin. They look at their parents, they look at their father or their grandfather, they see a bald spot and they're like, "Oh, okay, this is going to happen to me."

Sophia:

But like you said, we as women, we're not told that. And so there's a tremendous amount of shame that happens and I experienced it myself when I was younger, just massive losing hair because of stress, or actually you said fasting, right? You mentioned fasting. I had an eating disorder in high school and I lost a lot of my hair. So when we have gone through it we don't want to talk about it to anyone because it's such a shameful subject so I could even-

Dave:

Yet half of women get it. That's what's funny. How could you be shameful when it's a 50% problem? But it is, right?

Sophia:

It is. And so there's this stigma that's attached to it and we call this kind of a less taboo. So we're going to be able to talk about periods, great. Hallelujah, we finally can. We can talk about menopause, Hallelujah, will we ever finally can. And now I think it's really important to just like you said, address the fact that, "Hey, this is going to happen to you at some point in time." So what can you do about it? And I always encourage women to speak up because that's the first way that they can de-stress. Because once you actually speak out, you see, "Oh, you have it too. Oh, you have it too. Oh, you have it too." Now you're not alone. That stress level comes down. And then once you would take the first step to doing something, then you're having control. Having control already is a de-stressor in itself. And so these are the things that I... And it's interesting you mentioned it because honestly, I feel like it's even more important for women because it's associated to some sort of a sense of femininity.

Dave:

It is associated with femininity and being bald is not considered attractive for men, but it's also sort of like I said, it's so common, it's what happens. I think men are becoming more sensitive about it than they used to be. It's more willing to talk about it. Like, "Oh I don't like it, but it's happening. Maybe I'll do something about it." Whereas if you look back 20, 30 years ago, paying any attention to your physical appearance as a guy was something that you really wouldn't do. Because women, they put on makeup and man, I'm just, I'll get wrinkles. I'll look distinguished and what the heck. And it turns out putting a little bit of moisturizer on makes a huge difference. And like, okay, I learned to do that. I'm fortunate that I've worked with a skincare company with Alitura and some of the people on my team at Bulletproof have been their skincare experts like, "Dave, seriously, it's not that hard to do this one thing."

Dave:

And so yeah, you can have better skin. And what you don't understand is your skin's an organ, right? And it's something that has a function, and if you take care of that, it's good. And if you take care of the skin under your hair, it's also an organ, right? And the way your hair comes out, it's like, "Hey, how's that organ functioning?" And why we associate that as a sign of femininity, there's got to be some evolutionary for that. Maybe it's because of women with-

Sophia:

Maybe it's what you said. It's a fundamental kind of sense of health and wellbeing and femininity. So fertility, all those things tied together and that's not to diminish the psychological impact of hair thinning on men. I wasn't saying that, I think it's a little bit... There's this kind of mismatch as to how much we talk about it, but like you said, maybe it is also about men taking preventative steps at the same time, about skin, their skin health and everything else. By the way, your skin looks fantastic, just so you know.

Dave:

Oh, thank you. I like to think that's seven years to replace half the collagen in your body. If you eat a lot of collagen for 10 years, it just takes a little bit of time and a bunch of other stuff. But it's interesting to me, the psychological stuff there and we can all sit there and go, "It shouldn't make a difference, right?" And rationally it shouldn't, but unfortunately none of our feelings are subject to rationality. That's why they're called feelings, not thoughts. And so if it's affecting you, I would say if hair loss is affecting you, and you're saying, "I feel like less of a man or a woman or whatever," you probably should do a little bit of therapeutic meditation kind of stuff on that to just be comfortable with where you are. And it's okay to also take some action to be like, "Well that said, I liked my hair thicker. Let me do something about it."

Dave:

They're both okay, and neither path is morally better than the other and deciding, "Fine, whatever, I'm not going to do anything at all. And I'm just going to be stressed about it." You can do that too, right? Everyone has their own places where they put their energy. And so I hope no one listening to this is feeling judged or shamed or whatever, because that's not the point. But the point is we all want control of our own biology. That's the definition of biohacking when I wrote it. And yes, hair growth is part of your biology. And if you want control of that, Hey, there's more tools now than we had before. And you just added a bunch of clinical data to it. And that's cool.

Sophia:

Thank you. And I also just want to say something, when I say men or women, I mean biologically men and women, because there's a ton of genders that we can have. And so it was just really in reference to that. I think the hormonal shifts are a little bit different biologically as we talked about it. So that's just something to say. I wanted to clarify that and be sensitive to anyone who is listening and yeah.

Dave:

I'm sure the rules are different if you're taking a bunch of hormones to transition your sex, but I don't think we're going to cover that in this episode-

Sophia:

No, that's for our next segment.

Dave:

... Because that's a pretty specialized topic. Awesome. Well, Dr. Sophia, thank you for being on Bulletproof Radio again, and talking about this specific study that you did and also just the effect of stress and hair loss. And the good news is that the pandemic kind of stress hair loss, when your stress goes down, it generally comes back, right?

Sophia:

Yes, but it takes time. So you have to be patient. That's one of the things that I want to advise everyone is patience and there's a chronicity to stress. I don't think it's going anywhere so soon, so we still have a lot to deal with. And just being mindful as to how we treat our bodies and what we can do on a biochemical level will be really important during this time.

Dave:

That's great advice. Other piece of advice for you as we end the show, you want to lower your stress, stop watching the news. They say the same thing every 10 seconds designed to push your fear buttons. It's just not useful. Use a better search engine than the one you've used for a long time, because they are now prioritizing fear-based results, especially on the news feeds. You can actually use news feeds, there's an app called News360, I have no financial relationship with them. You can tell them what you're interested in by thumbs uping and thumbs downing anything. So it tunes a newsfeed and you can just thumbs down all the scary crap and you don't see it anymore. So my news feed is full of cool research and new stuff that I care about. Not whatever the heck is the current fear of the day, sort of thing. And funny enough, if something really is happening, your friends will tell you about it. It's okay. You're not going to miss out. That's the way to reduce your stress and probably have thicker hair too if you do that over time.

Sophia:

Listen to this man.

Dave:

I hope you enjoyed the episode today. The website is Nutrafol, N-U-T-R-A-F-O-L. Get 20% off with code Dave. And no, you don't have to do any of this stuff, but if hair is part of your biology, you want to control. There's really good science, including new stuff and including new stuff for an understudied major part of our population, enjoy.