Hacking Hair Follicle Function – Dr. Alan Bauman and Dr. Sophia Kogan – #844

Announcer:

Bulletproof Radio, a state of high performance.

Dave Asprey:

Are you one of the people on social media who keeps asking me about my hair? Well, I hacked it. In fact, I've had so many questions about this that I combined the most useful Bulletproof Radio episodes about hair for you. This includes what's new, what works and what you can realistically expect no matter what you're going to do, whether you're talking about peptides, nutrition, removing toxins, changing stress or doing what I did, moving follicles around on your head. Dr. Alan Bauman MD did my own procedures at Bauman Medical and taught me a lot of this stuff. He's a hair restoration physician, hair transplant surgeon who's treated more than 30,000 patients and done more than 9,000 procedures. There's also excerpts from Dr. Sophia Kogan who's co-founder and chief medical advisor at Nutrafol, who talks about new research about women's hair loss and thinning specifically. She gets into just how much hormones, nutrition and stress affect hair health and how nutraceuticals can make a difference.

I think you're going to get a lot of value from this episode. If you care about your hair, no matter what age you are, no matter whether you're a man or a woman, there's a ton of stuff we know now that we didn't know before and I've got two of the world's top experts here for you.

Today's guest, she's an expert. She's a physician from SUNY Downstate Medical School in Brooklyn, where she studied dermatology and she's an expert in hair. Dr. Kogan or Sophia also has a personal story here because she had hair loss due to an eating disorder and just the stress of medical training and it turns out stress and hair loss are integral, they're linked. She's the chief medical officer of Nutrafol, a company that focuses on science behind hair loss and what you can do with plant compounds and naturally occurring things to take control of that. Sophia, welcome to the show.

Sophia Kogan:

Thank you, Dave. I'm super excited to be here, to talk about a topic that is very near and dear to my heart and to share a lot of the news and the science that we've been learning here at Nutrafol.

Dave Asprey:

I'm going to boil it down to a single question, why do people lose hair? That's one answer with 7,000 hours but give me the top level, what's going on with hair loss?

Sophia Kogan:

People lose hair for a multitude of reasons. The thing is that there's no one cause and that's one of the things that's different about of an integrative perspective versus a Western medical perspective. We're always looking for this one cause of something and that leads to targeted drugs that target only single pathways.

Dave Asprey:

Alan, welcome to the show.

Alan Bauman:

Thanks so much for having me, David. It's great to be here.

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Dave Asprey:

What do you think, should we talk about this for men versus women? Or is this more of a hair biology thing? Because men and women are different.

Alan Bauman:

Well, when hair loss occurs, it looks different in men and women and so that's why there's a difference. Genetically androgenetic alopecia is the condition that can affect both men and women but it looks different. It expresses itself different, the phenotype, how it looks in a male and female gender is going to be different.

Dave Asprey:

Let's talk about the scalp treatment specifically because I think that's for both genders and then we're going to get into men versus women.

Alan Bauman:

Sure. Scalp health is so important. Do you know what the most commonly used shampoo is in the world? The most popular shampoo?

Dave Asprey:

Jeez. Suave or something.

Alan Bauman:

Actually it's Head and Shoulders.

Dave Asprey:

Oh, okay. Is dandruff that big of an issue?

Alan Bauman:

Yeah. Dandruff and itching happens to over 50% of the people, 50% of the time.

Dave Asprey:

wow.

Alan Bauman:

It's a huge problem and scalp irritation, just about everybody gets some at some point. And so I think it's a 110,000 bottles per minute or something are sold.

Dave Asprey:

That's ridiculous.

Alan Bauman:

I can give you the data, but it's unbelievable.

Dave Asprey:

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wow.

Alan Bauman:

Scalp health is a big problem. And we know now that there's a direct link between scalp health and the inflammation that's going on.

Dave Asprey:

Totally.

Alan Bauman:

And the production at the level of the hair follicle.

Sophia Kogan:

Over the course of the last 30, 40, 50 years, we thought that CHD is the only implicated pathway in hair loss. But now research shows that that's not the case. That basically there's inflammation, that there's stress, there's environmental assaults. And more and more as research evolves and there's a huge surge in research today because it's such a great area of interest is that there are innumerable amounts of pathways. The number of signaling molecules that are in pathways that are responsible for both hair growth and hair loss are so many that it would be impossible to think that there's one targeted intervention or one cause in itself. Any dysregulation to those pathways will cause hair loss and it could come from multiple factors.

Dave Asprey:

For someone listening to this saying, "Look, I want my hair to be just thicker and not fall out," give me the Cliffs Notes. Given that we're looking at potentially hundreds or thousands of variables, what are the top three variables to pay attention to?

Sophia Kogan:

I think that the top three variables are stress, inflammation and hormones.

Dave Asprey:

In my experience, red light definitely grows hair and putting it on the head's a good thing. Is it going to be enough if say, someone hasn't started losing their hair, they're saying, "Oh, okay I'm 25. Maybe I'm seeing a little bit, maybe I'm just detecting something going out of the crown of the head." If they just start using red light and washing their hair with the right stuff, is that going to be enough to stave it off for a while?

Alan Bauman:

Laser therapy does work well to block the effects of male pattern and female pattern hair loss. It definitely optimizes the follicle for sure. The main problem though and we'll talk about this with all the noninvasive therapies is that you need the follicle in order for any of these noninvasive treatments to be effective.

Dave Asprey:

If the follicle's died, it's too late.

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Alan Bauman:

If the follicle, it can be beyond repair let's say, you're not going to have an effect there. If you've already have a receding hairline and you're hoping that the laser is going to grow back the hairline, well, that's really not going to happen to you.

Dave Asprey:

How would you get a new follicle there?

Alan Bauman:

Well, in those cases we have to transplant for sure.

Dave Asprey:

And so transplant, I remember I first read about these in probably when you first started doing this 25 years ago. I'm like, that seems so painful. They're going to take a big strip of skin and just move it and staple it onto your forehead. That's not something I would be interested in doing but in the course of preparing for our interview at all, I didn't understand that you can actually move a single follicle at a time, basically.

Alan Bauman:

Yeah. This is not a pluggy, painful, ugly looking procedure anymore. We're going to move literally down to as little as a single follicle to recreate a 100% natural result.

Dave Asprey:

You're basically taking follicles that don't fall out with male pattern baldness.

Alan Bauman:

Correct.

Dave Asprey:

Things from the side and you put them where the things that are already dead are and then you keep them alive by doing the things I should have done when I was younger that didn't exist.

Alan Bauman:

Well, the transplanted hair is pre-programmed to live forever. It's not going to be affected by the male pattern hair loss process. It's not going to be affected by your hormones.

Dave Asprey:

How does that happen? How does it get pre-programmed? Is that just from where it grew on the scalp?

Alan Bauman:

Where they're located. Yes. The viable donor zone, which is where we're going to take the hair from, lives around the sides and the back of your head. The occipital zone, by the occipital bone, those hairs in men and women are relatively permanent. They're not affected by male pattern or female pattern hair loss. When we take those follicles and we put them in the new area, the area that used to have hair,

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they will live and grow forever but you still have to protect the other hair. That's where the other therapies come in.

Dave Asprey:

Tell me about what stress did to your hair.

Sophia Kogan:

Like I said, there are multiple factors that are implicated in hair loss. Genetics of course play a role and genetics play a role in everything but there's a strong component of epigenetics. For me, the stress was the epigenetic component that brought my hair loss into progression, into manifestation. Initially I stressed myself by having an eating disorder in the nineties, like a lot of teenagers did, so that kind of triggered the progression of this. And I lost a lot of hair, which ultimately didn't come back fully until much later in life. And then I noticed that over the course of my life, it was either college and medical school and then residency and then I did another residency. Those were the times that I would shed the most. And those are the times that I would lose the most amounts of hair. Of course, even though I'm genetically predisposed to losing hair, that genetic manifestation came out during those times.

And my stress didn't just come from exams. My stress came from the fact that I was really bad in college and medical school. I lived and survived on Coca-Cola and candy and coffee and tuna fish. Which of course has a lot of mercury. In addition to the psycho-emotional stress of studying for exams and in residency, not sleeping and all those things that compound, I also had a lot of toxins in my body and a very dysregulated and compromised gut. As a result, of course, I manifested in a lot of hair loss. There is such a thing called telogen effluvium. That's a diagnosis that Western medicine does recognize as stress related and that could be a physical stressor or a psycho-emotional stressor. And what happens is that normally a hair follicle cycles through a growth phase, which has been called anagen, regression phase catagen and resting phase telogen. And then it goes into exogen, which is hair fallout.

Unlike animals that have a synchronized cycle, so for instance, animals can shed all of their fur at the same time seasonally and then grow new fur. Our cycle is not synchronized and so lucky for us because we're not shedding all of our hair, going bald and then regrowing it. All these hair follicles are in different stages and have a very finely tuned biological clock. Each hair follicle, imagine this, has a very own biological clock that tells it when to go into each phase of the cycle. When we suffer from an acute stress, such as an illness, a surgery or a death of a loved one, a breakup or maybe a big move or something like that, sudden weight loss, the majority of the follicles or a big portion of the follicles can suddenly are shifted into the resting phase, telogen.

Alan Bauman:

Well, the good news today is that there's so many other options besides finasteride, to really impart more strength and health to the hair follicle.

Dave Asprey:

What about minoxidil?

Alan Bauman:

The main issue with minoxidil or at least in the Rogaine and the generic Rogaine varieties and even the online pharmacies is that it's going to be pretty greasy, gooey, sometimes very irritating, messy protocol.

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Dave Asprey:

You keep your hair, but you have greasy hair.

Alan Bauman:

Yeah. Or greasy scalp or even worst case scenario, some kind of irritation or inflammation. We've got kind of a fix for that too, working with a compounding pharmacy, we create a different version of minoxidil that has a different variety of ingredients to make it penetrate better, make it less greasy, less gooey, to avoid some of that inflammation. And that's Formula 82M.

Dave Asprey:

What are the hair supplements that you've found or at least the things like biotin or zinc or what are the things that people need to take to have healthy hair?

Alan Bauman:

I think most people know that biotin, zinc is going to help with hair. Unfortunately, there's not a huge amount of data in the clinical literature but biotin has been shown to improve keratin production, which is basically that hard, dead protein that the fingernails and hair is made of. A lot of that information is actually in the veterinary medicine literature, for race horses and such to show that biotin supplementation improve with hoof strength.

Dave Asprey:

Of course.

Alan Bauman:

And things like that. Of course, if you're investing in thoroughbreds, you want good hoofs and such. Fingernails have been shown to improve in thickness when you're on biotin. And certainly we've measured really nice improvements with biotin supplementation in the office. We prescribe a Super Biotin 10,000.

Dave Asprey:

Yeah, you make that.

Alan Bauman:

Yeah. Probably one of the most exciting therapies that we have is platelet rich plasma that's come of age really within the recent years. That's really the workhorse of regenerative medicine. And I know you've heard about that in terms of sports medicine for joints and even for wound repair and skin rejuvenation and we've leveraged those platelet rich plasma treatments and the growth factors that they provide for better hair regrowth.

Dave Asprey:

Can you cause follicles that are affected just by thinning or shedding, can you make them wake back up? Can you recover them? Restore them? Turn them into super hair follicles? What hope do we have?

Sophia Kogan:

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Absolutely. The key is to restore the body. To restore the body and by restoring the body, you restore the follicles. Every organ has an ability to heal itself given the proper conditions and this is what you talk about all the time, the biohacking. And so having the ability to counter, to support the adrenal glands, to decrease cortisol levels, to decrease inflammation or rather rebalance cortisol levels, sorry. To decrease inflammation, counter oxidative stress and the hormonal imbalances, you will ultimately rebalance the environment of the follicle and the systems of the body support them. And as a result, support the follicle in its recovery.

Dave Asprey:

Is there lab tests that people should get to know if cortisol is high?

Sophia Kogan:

There's many lab tests that you can do. It's not that the cortisol is high. Sometimes cortisol is high and sometimes cortisol is low. When somebody has been producing cortisol over a long period of time, eventually the adrenals get fatigued and then there's less production of cortisol so then there's a whole other slew of issues that happens. The key is to actually see where that system is dysregulated and you can do salivary cortisol tests. We also here at Nutrafol, what we do is we've implemented something called the hair mineral analysis test. We help our customers figure out what are the stressors and that are in their system? Actually looking at the hair itself. The hair mineral analysis looks at a variety of different minerals and heavy metals and the patterns and so it can actually tell you what organ systems may be stressed.

Dave Asprey:

Okay. You're finding aluminum is an issue, but mercury is the biggest issue. And the problem is if we don't eat fish, we don't get the omega-3 fatty acids. And if you're short on EPA and DHA, what does that do to your hair?

Sophia Kogan:

Well, first of all, these are anti-inflammatory, so it helps mitigate the inflammation in the body. Obviously if you don't have a good balance of your omegas, you're going to have a pro-inflammatory state, which will ultimately compound the hair loss issue. You do want to get those omegas but you want to try to eat fish that is small. I think the key is to minimize consumption of large fish and tuna is large, shark is large. I know most people don't eat shark, but you find shark in some supplements, even hair supplements. You need to be careful to minimize consumption of large fish. At the same time, you could consume fish, but use sardines or other small fish. I'm a big fan of sardines actually or take a supplement with omega-3s.

Dave Asprey:

I know you can speed surgical healing with red light or peptides with ozone. Are there specific peptides that you use in the practice?

Alan Bauman:

What's old is really what's new again. My story about peptides goes back to 1999. In 1999, we were using copper peptides to help wound healing and stimulate hair regrowth after hair transplant surgery.

Dave Asprey:

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Wow.

Alan Bauman:

It's been a long, long time with copper peptides and that was basically a blue looking solution. It came with a whole take home kit of gauze and sprays and gels that people would use after their hair transplant procedure. And of course in those days we had a row of stitches in the back of their scalp but they needed to heal.

Dave Asprey:

Ouch.

Alan Bauman:

The wound healing was a little bit more traumatic. Obviously since FUE, follicular unit extraction, the technology has changed dramatically and the wound healing takes much less time, very little discomfort. In fact, we don't even prescribe schedule two narcotics anymore for years now, you wouldn't need it.

Dave Asprey:

I'm intrigued that all this is possible because I still had kind of this idea that they just take a big chunk from the back of your head, move it to the front and that's gone.

Alan Bauman:

Correct. That's not what we do anymore.

Dave Asprey:

One of the things that fascinates me about biohacking is just the speed of exponential change in what we can do with medicine. Where do you see hair transplants 10 years from today?

Alan Bauman:

I think really hair restoration, first of all, has you're right, has changed so much just within the past five or 10 years, going from such an invasive process to something minimally invasive. And I'm really proud to be a part of that minimally invasive.

Dave Asprey:

You've been the leader in that.

Alan Bauman:

Pioneer on that. But I really see the medical management of hair loss as be the key location that a lot of changes are going to be made. Being able to track your own hair over time, because as I said earlier in the discussion, you can lose 50% of your hair without it being noticeable to the naked eye and your best chance at preserving the hair you have is before those follicles have kind of kicked the bucket, so to speak. The ways that we measure and monitor hair loss, for example, in the clinic using a hair check tool, which is a noninvasive way to measure how much hair is growing in a given area of scalp and some of our new microscopes, which can immediately assess density and hair caliber without trimming any hair, is going to give you a metric of whatever you're doing, whatever you're trying to do to hack your hair,

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you're going to know the response if you give it enough time. Let's call it three months. You come back, we're going to be able to tell you exactly how your hair is changing and how much and where.

Sophia Kogan:

Self-care is extremely important. We have to find time. It's important. We have apps now that we can use. That's really helpful. Lifestyle modifications, of course, good diet is important and eating healthy foods that are not inflammatory, protecting our gut, excluding foods that are pro-inflammatory that stress our gut and ultimately contribute to the overall stress load for the body as well as taking adaptogens. I think adaptogens are extremely important. This is something that Western medicine has not caught on to because it doesn't fully recognize that the maladaptive stress response is responsible for maybe over 90% of chronic disease. We haven't yet as a medical society caught up to the fact that there are these wonderful botanical gifts that we have from Mother Earth that we can use. And especially now, when we have the technology available to us to extract those bioactives and make them more bioavailable and bioactive.

Things like so extracts like ashwagandha, we use ashwagandha for instance, but there are others as well, like rhodiola or reishi mushrooms and everything else. They have the ability to actually rebalance the stress response to support the neurological stress response and also the physiological stress response, which is kind of unique to them. And they're also nontoxic so that's one of the definitions of an adaptogen is they're nontoxic, but they have an ability to modulate or rebalance rather than have a directed action. They have a non-directed action and that they basically help you build resistance to stress.

Dave Asprey:

You include ashwagandha in Nutrafol as a supplement strategy but if you're not at least meditating or taking deep breaths or doing something and you're tweaking in your lifestyle, you might expect thinning hair.

Sophia Kogan:

I think that you need to do all of those things.

Dave Asprey:

I agree.

Sophia Kogan:

I think taking it, we're all used to, that's just kind of the way we think in Western medical society, or sorry Western society is that we take a pill and everything gets better. Yes, taking ashwagandha is important, but also implementing these small incremental changes in your life. You said, gratitude, meditation, yoga, even joy in itself, hobbies to sort of decrease that stress and mitigate that stress response, that's very important. Good, healthy diet and these wonderful adaptogenic herbs and anti-inflammatories.

Dave Asprey:

How many women get hair transplants, not counting eyelashes and eyebrows?

Alan Bauman:

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Even though through the door, which we see about a 1,000 patients per year, it's about 50% men, 50% women almost equal in consultation, but many fewer women are good candidates for hair transplant surgery. And this is typically because well number one, they're realizing that I would say the women are a little bit more proactive than the men in terms of their health and so they're feeling that changes in their hair maybe more quickly, they made notice that their ponytail volume is changing.

Dave Asprey:

Or that they're having kids.

Alan Bauman:

Or that they're having excessive shedding.

Dave Asprey:

Having a baby will trash your hair, like no one's business, right?

Alan Bauman:

Absolutely. It could start even after puberty with birth control, it can start with having children or around the time of menopause or even a crash diet can change your hair.

Dave Asprey:

Yeah. For sure. Thyroid or stress hormones.

Alan Bauman:

Or you're changing your work schedule, staying up at night and things like that.

Dave Asprey:

Well, okay. Let's talk about some of the things that women can do. And then I want to really go in on circadian biology because David Sinclair's been on talking about resetting the clock, Satchin Panda's been on. We'll get into sleep and hair but just what are the things that women can do specifically to protect their hair? And what do you say if someone comes in, okay oh, you have thin hair and you're not a candidate to move hairs around on your head. What options are there?

Alan Bauman:

What are the things we can do? Well, the first thing is that they have to get an evaluation by a hair restoration physician. This may not be their local dermatologist who doesn't see many hair patients or doesn't have technology to measure or evaluate exactly what's going on. Getting in touch with someone who can actually measure and evaluate their situation is the first, most important step.

Dave Asprey:

And what are the top three metrics you need to look at?

Alan Bauman:

When the person comes in, we're going to get their medical history. We want to know what are the risk factors? Is there some scalp symptoms like itchy, burning, flaking, oily, dry scalp of some sort? Is there

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medical conditions like hormone imbalance? As you mentioned thyroid in yourself, but thyroid problems in women are very common. Is there the use of medications like birth control, hormone replacement? Are they on blood pressure medications, cholesterol medications, mood modulators? All of those things which are very, very common in today's society tend to disrupt the hair follicle function.

We're going to take a complete inventory of their health status, run blood tests if we need to, look at their scalp to see what's exactly going on. Is there a patterned distribution to the hair loss? When we do those measurements, is it better the back of the scalp and not so good up at the front or in the temples? Is there a hereditary tendency? Is it something in the family that we can identify? Mom's side or dad's side, it can come through both sides of the family, skip generations, skip siblings. We want to get an inventory of that.

And then we're going to measure different areas. We're going to look at the back of the scalp versus the front with the hair check tool. It's basically it's a cross-sectional bundle measurement, noninvasive so it makes a small bundle, squeezes it, gives us a cross-sectional area without any trimming. And we compare to that good zone, the occipital or back of the scalp.

Dave Asprey:

Wow.

Alan Bauman:

To other areas. And we can tell them, "Hey, you've lost 30% of your hair. That 40%, that's why your part line is looking a little bit wider."

Dave Asprey:

Super quantitative.

Alan Bauman:

Yeah, absolutely.

Dave Asprey:

I had no idea.

Alan Bauman:

Yeah. You're going to go through all that and then we'll look with the microscope and we'll be able to see. Think of the head of hair as like a forest of trees. Is it depleted of trees? Or is it more oak than birch? Or more birch than oak? What's going on? Once we figure all that out, then we'll know, do we need to protect, preserve or restore? And the treatment regimen is basically designed to accomplish those things based on her goals.

Dave Asprey:

Tell me about what happens inside the hair follicle when hair starts to get thin.

Sophia Kogan:

What's really cool and maybe not cool for us for the hair loss but what we do know is that hair follicles actually have their own functional mechanisms for producing hormones, for producing cortisol. We

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know that in the whole body, we have the hypothalamus, it tells the pituitary gland to secrete ACTH, which tells the adrenal glands to secrete cortisol. We know that that's the HPA axis, the hypothalamus pituitary axis. It is actually exactly replicated in the follicle itself. And that's something that is research only recently showed so that when the follicle is stimulated from the outside by cortisol, by corticotropin releasing hormones. It actually has its own ability to produce that cortisol itself and can also use this mechanism to adapt to stress, which of course, stacks the cortisol on top of cortisol and what happens is that it actually dysregulates the surrounding immune responses. It produces more inflammation, it stimulates mast cells to degranulate and to release inflammatory molecules that will cause apoptosis, cell death, and also early induction of catagen, which is the regression phase and inhibit hair growth.

The other brain follicle connection is that our nerves. We have a really wide awesome meshwork of nerves that surrounds the follicles in the skin. That's why we feel things, that's why the follicles stand up or the hair stands up on our hands or that's why for instance, eczema or psoriasis get worse when you're stressed out because of that direct connection to the nerves. The nerves will release neuroimmunomodulatory substances, such as nerve growth factor and Substance P, which will actually, in some cases for women I believe that that's the reason why they feel these dysaesthesias during hair loss or during certain types of hair loss. They feel actual tingling or pain around the hair follicles. I believe that that's in relationship to these neurological mechanisms but basically the systems, the brain gets hyperactive, it sends down signals.

These nerves, they release these factors which also stimulate the mast cells to degranulate, increase more inflammation. But also they at the same time compromise what is called the follicle immune privilege. That follicles have a unique system because they're a conduit between the environment and the internal body system, they have a unique way of protecting themselves from inflammation by having this immune privilege. But as a result of what's been shown is that Substance P for instance, this neuroimmunomodulatory or neuroimmune substance that's released from the nerves can actually compromise that. That it can actually compromise that immune privilege, which allows the follicles to be exposed to more inflammation or to trigger inflammation in the body. And that has been linked to certain types of hair loss in itself like alopecia areata or scarring alopecia that also is obviously a process that can manifest in other types of hair loss.

Dave Asprey:

I've found that if I shampoo once a week or less, my hair is way happier, but if I wash it every time I take a shower, it dries out. It doesn't do well, no matter what shampoo I do. I'm like, here you can chill.

Alan Bauman:

What's interesting is that in Europe, they've done these studies and it's once or twice a week, maybe they would shampoo. And here in the US sometimes we shampoo twice a day.

Dave Asprey:

Wow.

Alan Bauman:

If you're going to the gym and things like that and depending on the styling products. There's a wide variation geographically in the world, how often people shampoo, but there's also new trends. For example, curly haired folks find that if they use a very sudsy or high surfactancy type of shampoo, it frizzes out the curls and it doesn't leave it with nice conditioning or manageability so they will use a

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conditioning wash or co-wash system. And that can be tricky. That means you're using just a conditioner in the shower on your hair and hopefully rinsing all that out and then using some kind of a clarifying shampoo or cleansing conditioner on an intermittent basis. It could be once a week or every other week. There's a lot of nuance in between, because you say, "Well, how often should you shampoo?" Well, it kind of depends on what you're using to wash your hair.

Dave Asprey:

Years of focusing on this, I can tell you have a real passion for it. You got all the toys, all the data, all the different ways of getting at this very complex system, systemic or systems biology problem. It's not just one thing. And that's why when I tried to pin you down on a few of the things like what's the right amount of time to shampoo or whatever? You're saying, "Well, it depends," which is an educated answer here. Thank you for practicing your art.

Sophia Kogan:

Why I feel so good about what we do is because we are helping a lot of people deal with their... We're doing this through actually rebalancing the inside out and in doing that, you're making people feel healthier and I think hair's important and it has a huge psychological impact, especially on women but we also have to keep those other things in mind, like being authentic, being empathic, being joyful, being happy with yourself, looking at the beauty within in a way. Because you're always looking at the beauty without, yes, hair is important. It's going to shape our face. It's going to make us look better, whatever, but then there's tons of beautiful bald women out there or bald men. Don't feel at all, shouldn't be feeling bad or compromised or anyway different than the ones who do have hair. It's just that it's a great bonus, but it's not the most important thing in life.

Dave Asprey:

Yeah, I totally agree. Thank you for sharing your knowledge and explaining the difference between what's going on in men and women and it's been a fun interview.

Sophia Kogan:

Thank you so much, Dave. Bye bye.

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