Announcer:

Bulletproof Radio, a state of high performance.

Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. Alan is a Board Certified hair restoration physician and a hair transplant surgeon, and he's treated more than 30,000 patients and done more than 9,000 hair transplants. This is a guy who knows how hair grows in every little thing. Whether you're a man or a woman you're going to learn something amazing in this episode. Alan, welcome to the show.

Dr. Alan Bauman:

Thanks so much for having me, Dave. Great to be here.

Dave:

Do you like when people call you a hair hacker?

Alan:

I love that. In fact, biohacking baldness is the name of the game today for sure.

Dave:

It's true. I've been thinking a lot about how do I do this. You sent a cool piece of tech to my house and my wife's like, "Hey, I want to use that," and she has way thicker hair as a result of that. We'll talk about what that device was. So, there's lots of women who are really paying attention to not just the hair style, and hair thickness, and getting weaves, and whatever the other stuff that I don't even know half the stuff that ladies do to their hair. There's actually a hair health aspect to it that I'm finding when I talk to my women friends they're into it in a different way. It's not cosmetics, it's I just want it to grow that way.

For men it's, okay baldness is a big thing, hair loss, as well as hair color. We don't want to turn gray. So, what do you think, should we talk about this for like men versus women, or is this more like a hair biology thing, because men and women are different?

Alan:

Well, when hair loss occurs it looks different in men and women. That's why there's a difference. When your wife wants to grow thicker, healthier hair it's not because she's having a balding problem ...

Dave:

Right.

Alan:

... typically. She wants to optimize it. Then, when we talk about for men usually male pattern baldness, well that's something that's visible from across the room.

Dave:

And that's different? So, is the biology still similar? We can talk about the biology of hair. Maybe we'll do that first then we'll go into tweaks for men and women. Is that a good deal?

Alan:

Yeah. Look, 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:

All right. Then, talk to me about hair on the head. We'll talk about eyebrows and stuff like that in a bit. When it starts growing, you're young, you get this fuzzy hair. What makes it change so that it starts ... Let's do first, it starts turning gray before it starts falling out for most people. Go into gray.

Alan:

Well, it can, it can. Gray hair is probably one of things about hair that we know the least about, but it's on everybody's mind because hair color, it's a billion dollar market.

Dave:

It's ginormous for men and women, even though a lot of guys don't talk about it.

Alan:

Let's say a huge number of women, let's say 80-90% of women will start coloring by the time they exit their 20s, even into their 30s. They will continue to color most of the time.

Dave:

Is that to cover gray or just because they like changing colors?

Alan:

Most of it is to cover the gray, because the gray is a sign of aging and that's unwanted.

Dave:

I'm so telling all of my girlfriends that, or whatever you want to call them, not actual girlfriends but my women friends. You're actually dying your hair for gray. They'll love me for that. I always thought it was because, Oh, today I'm red, tomorrow I'm blonde. So, that's mostly just-

Alan:

There's a fashion component, too.

Dave:

For sure, but there's gray under there.

Alan:

Yeah.

Dave:

How much in your practice do you see people's hair go back to a color it used to be when you change how their scalp works?

Alan:

Well, that's something very difficult to do. One of the things that we often do is try to optimize the health of the follicle and the health of the scalp. Sometimes you can see this miniaturization of the hair, for example. It loses pigment. It's going to lose its caliber. It's going to lose its length over time. When we rejuvenate the follicle, I'm not saying that we can turn gray hair back to dark, of course not, but hair that's starting to lose its color because of its diameter we can rejuvenate that. So, that's some pretty good news if you catch it early.

Dave:

When you get thicker hair it can be less gray.

Alan:

Yes.

Dave:

I've seen a few supplements out there that can help hair turn colors. There's some Chinese herbs and some copper and things, and I read about all those in the book. Like you said, it's very difficult to achieve. Most people end up coloring their hair if they want it to not be gray. Now, your hair, you have some pretty epic hair which is, by the way, how it's supposed to be because you're a pre-eminent hair specialist you better have good hair. So, do you dye your hair?

Alan:

No, I don't dye my hair. I've got a lot more gray over the past couple of years.

Dave:

You've got a little bit of gray. How old are you?

Alan:

I'm going to be turning 50.

Dave:

So, 50, and you have less gray than I do, actually, which is cool, but then again I've got some genetics, and I've had a lot of biological stress. So, there's no dye at all in your hair?

Alan:

No, no dye at all.

Dave:

Okay, and you've got a pretty darn thick healthy-looking head of hair.

Alan:

Well, thanks, because I know all the secrets.

Dave:

I was going to say that must be why. So when people get their scalp healthy, and the underlying support system for hair, maybe they'll see a slight change in color but, basically, they're going to dye it.

Alan:

Yeah. They're definitely going to need ... If they're going to gray, if they're predisposed genetically then they're going to probably have to dye their hair.

Dave:

Okay, so you like own the gray and say I have wisdom, which is completely cool, or you say, I'm going to have wisdom and look like I'm 40 forever, in which case you might dye your hair. My prediction is that within 15 years we'll have the coloring thing hacked. We'll actually understand the biology of that enough that we can put melanocyte-stimulating hormone into hair follicles and things like that.

Alan:

I think you're right.

Dave:

Do you think so?

Alan:

I think you're right, just like we figured out how to, basically, put a liquid tan in a bottle for pigment of the skin and so forth. I think that we'll eventually figure that stuff out for the hair follicle, as well.

Dave:

Okay. So, both men and women don't want gray hair, and women will say I dye my hair because it's fashionable. The men that I know who dye their hair are loathe to talk about it. Why is it that dying hair for men is, at least historically has been almost like shameful?

Alan:

I think the problem is that cosmetically when guys go to dye their hair they usually do it too dark. They're not maybe seeking a professional to help them do that. You know, their cosmetologist, their local licensed beauty professional is not steering them in the right direction, or they're not even asking them. So, they're going too dark. It looks too weird, too unusual for whatever their age is. It looks inappropriate, so they run into trouble.

Dave:

Okay, so it's not well done. There's also something about, at least ... So, I grew up in New Mexico and I'm an engineer. You're sort of like, Well, how you look shouldn't really matter, so yeah I got a few gray hairs but so what. It's almost like it's not masculine to take care of your hair, or even to take care of your skin. So, the number of men listening to this who are our age, who have never used a moisturizer on their face is surprisingly high, even though I will tell you when you use a moisturizer on your face you'll like how you look. It changes your skin and it's healthy for you. Likewise, you take care of your hair you feel better.

Alan:

Absolutely.

Dave:

So, a good number of them ... Now, there's articles, men are dying their hair because it helps their career because there is ageism in the work place. It's ridiculous because you want a few ... In Silicon Valley when no one's looking they'll call a few gray hairs in the room, because these are the people who know where all the problems are going to happen, because they saw them before.

Alan:

Maybe they have experience.

Dave:

Yeah, experience, wisdom, whatever, but you want people who just, Oh, yeah, we've seen this pattern in three organizations in our career, so let's not go down that road. It's just the wrong road. Frankly, it should not matter what color your hair is; however, people are saying, I'd like to extend my career by 10 years. I'd like to have my hair and I'd like to control the color.

Alan:

I think with hair loss it's different. There's a lot of studies that show that guys get hired when they have a fuller head of hair, and there's actually some studies where they submitted the same resume with head shots with a guy with male pattern baldness, and then the same guy with a full head of hair. The guy with the full head of hair gets chosen way more often.

Dave:

If you're balding, if you have lots of gray hair, or if you're fat, you will be discriminated against. It's not conscious discrimination where people are saying, "I don't like bald people." It's subtle, it's preconscious. It's a biological choice, and the person making the decision doesn't necessarily know why they're doing that. They don't even know they are doing that. They're sort of saying, I preferred this resume after I read the whole thing. It's really weird.

Alan:

I think it's hard wired. Even facial symmetry, for example, registers in the beauty centers of the brain. You perceive that beauty. The brain perceives symmetry as beauty, so when it comes to a distorted hairline, a receding hairline, your face is less symmetrical, less aesthetically pleasing. It's hard wired.

Dave:

I would imagine, although there probably aren't studies, but I'd imagine if you're a woman who has a very thin head of hair there's probably some subtle thing that goes on with that, and it sucks. It should not be that way; however, there's a lot of unconscious human behavior that's out there. So, you can hack that. I'm very interested in what happens with what you're doing around making the scalp healthy before you go in and move hair follicles around. In your case, you've done crazy stuff to make your scalp healthy that would apply to men and women, I'm assuming?

Alan:

Well, absolutely. Well, first of all I love my hair and I wanted to keep my hair. I watched my dad go bald when I was a teenager in high school, and I watched him struggle with it. I didn't necessarily know what to do about it. I had not gone to medical school. I had not had any training in dermatology, or surgery, or medicine in any way, shape, or form, but I saw him dealing with this hair loss process. His dad, my grandfather, I had never known the guy with hair so I always thought that, Gosh, that's going to happen to me. I guess it's one of the reasons why I grew a ponytail in medical school. I love my hair. I wanted to keep my hair. That kind of shaped my thinking at least, even though I didn't have the knowledge at that point of what to do about it.

Dave:

So, now, give me the list of what you've done to your scalp to make your hair healthy.

Give me the list of what you've done to your scalp to make your hair healthy.

Alan:

For my scalp and my hair. I'm a bit of a hair junkie so I've tried ...

Dave:

Yeah, totally.

Alan:

... some of everything. So, from pharmaceutical therapy, to red light, low-level laser therapy, to nutraceuticals, I've done it. I've had scalp treatments to improve the health of my scalp and keep the hair growing thick and strong. That's what I want.

Dave:

Have you ever had a hair transplant?

Alan:

So, I've never had a hair transplant, not yet. I'm not afraid of one.

Dave:

I would hope not.

Alan:

I just haven't trained that guy yet.

Dave:

You've only done 9000 of them, right?

Alan:

Yeah.

Dave:

I think it would be hard to do it on yourself, that mirror image thing.

Alan:

With the mirror and the scalpel, no that wouldn't, I don't think that's going to work.

Dave:

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

Alan:

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

Dave:

I would think it would be like, geez, Suave or something.

Alan:

So, actually it's Head and Shoulders.

Dave:

Oh, okay.

Alan:

And the reason is-

Dave:

[crosstalk 00:11:52]

Alan:

Yeah, so dandruff and itching happens to over 50% of the people 50% of the time, so it's a huge ...

Dave:

Wow.

Alan:

... problem. Scalp irritation, just about everybody gets some at some point. So, I think it's like 110,000 bottles per minute, or something, are sold.

Dave:

That's ridiculous.

Alan:

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

Totally.

Alan:

... and the production at the level of the hair follicle, of the hair fiber. The hair fiber is dead but the follicle is alive, and when there's inflammation going on in and around that area the follicle just doesn't perform as well. So, scalp health is really important.

Dave:

I used to be a proud Head and Shoulders customer for ... When I was younger I'd have dandruff all the time. When I fixed my diet, I went to Bulletproof, I hadn't thought about dandruff in a long time, except maybe in the last 10 years there's been two times when I had it for a little while after I ate some stuff that I was severely sensitive to, and then I would get dandruff for a week, and then it would go away. So, there's like a fungal component to it. There's all sorts of inflammation things.

Alan:

We know now, obviously, the microbiome of the gut. There's now skin microbiome, microbiome of the scalp. It's a new frontier of hair health that we're just starting to learn about.

Dave:

Do you get dandruff?

Alan:

I have had it in the past but trying to eat a lot cleaner and so forth, and change my diet up quite dramatically over the past couple of years.

Dave:

You're wearing your surgical Bauman Medical branded scrubs and they're black and I don't see any flakes so at least for today-

Alan:

It's working today.

Dave:

Your program is working. I don't think we'll get too deep into dandruff on this, but you mentioned that you're doing low-level light therapy on your head. What does that consist of?

Alan:

So, low-level laser light therapy is a great technology, non-chemical, non-invasive way to impart energy to the hair follicles. Years and years ago we didn't know the mechanism. These devices were not FDA cleared. We didn't know why they were growing hair but they were. We had big in-office units. They were hundreds of thousands of dollars. The patients would come in a couple times a week and sit under these big laser devices. Now, obviously, you can get that kind of treatment in the comfort of your own home. We've progressed over 15 or 20 years from small hand-held devices, to little bands, to laser caps,

and certainly now the devices are a lot more sophisticated, a lot more portable, and a lot more powerful, too.

Dave:

People who've read the blog, or people who are just long-time listeners to the show understand I've really been into light therapy for almost 20 years for cognitive health, making my brain work better, and at Upgrade Labs we have whole-body things. I've used lasers going back almost 20 years, but a lot of it lately has been LEDs. So, you can get these cheap LED kind of helmet things for your head that seem to have some effect, but the one that you sent me, the one that you make, is actually laser.

Alan:

Right.

Dave:

Lasers seem to be way more effective.

Alan:

Yeah. We think that they're a lot more powerful, that the coherentness of the wavelengths, and so forth, of the light energy, is what's really activating those hair follicles, and for skin rejuvenation, wound healing, all the above. I think you're getting a little bit more power out of those laser-like emitting devices than you would out of today's LEDs. Now, it may change in the future. We may get more powerful LEDs, but the lasers seem to be the workhorse, for hair regrowth anyway.

Dave:

You have a high-end cap that you make that's got more lasers in it than I've ever seen in anything else. I'll put that thing on and I'll wear it for five minutes, which is what you recommend.

Alan:

Sure.

Dave:

I notice something in my brain, as well, from it because lasers, and even LEDs, the high-powered ones, they penetrate through the skull, and they cause changes in blood flow, so I think it's probably good for the brain.

Alan:

You're getting like a relaxation effect, or a stimulation effect?

Dave:

It's a relaxation effect for me.

Alan:

Yeah, that's what most patients will say, too.

Dave:

Okay, so you put this laser cap on. You're getting thicker, healthier hair and that's, by the way, what Lana used and she's, literally at her hair stylist people are saying, "What's going on. You have like this huge new wave of two-inch long growth?" It's because she's, "Dave's, what's that thing?" I said, Oh, Alan sent this to me. I'm going to go interview him for everything that there is about hair. So she, basically, stole it. I'd say, she lets me use it. We'll put it that way.

Alan:

Right, right. Well, there's a funny story. One of our patients was in a relationship and he had the laser and I think it was his girlfriend, or fiancé, or something. Anyway they broke up. She took the laser.

Dave:

Oh no.

Alan:

Boy, so not only was he crying about the breakup, but now he's going to lose his hair also. Everybody's crying when that happens.

Dave:

Got it.

Alan:

The TURBO LaserCap is what we sent you. That's the latest and greatest device. It's got the most coverage for sure.

Dave:

It's not cheap to be perfectly honest. Those are what about like five grand or something?

Alan:

Yeah, that one's a $5200 item. It's on the high end for portable lasers, but it's going to cover a lot more area.

Dave:

It's the highest end one that I've ever seen, and the laser density, the number of lasers on that is insane. So, this is a thing, though, that ... Are there providers who have one that, or hairdressers who use them on multiple people, or do people just have them at home?

Alan:

No, these are home units, so patients will take them home and they'll use them. Five minutes a day is the recommended treatment time. It's got great coverage if anybody's ever seen a picture of the TURBO LaserCap.

Dave:

Well, put one here [crosstalk 00:17:37], too.

Alan:

It really treats from the hairline all the way through to the nape of the neck. It really covers a very, very large area. It's got over 300 diodes, and they're all, like I said, all laser, so it's a lot of power right there.

Dave:

Yeah, very different than the little LED caps.

Alan:

Sure.

Dave:

I would say in my experience red light definitely grows hair and that's a good thing. Is it going to be enough if say someone hasn't started losing their hair, they're saying, Oh, I'm 25 and this is, I guess, a question more for about men. Okay, I'm 25. Maybe I'm seeing a little bit, maybe I'm just detecting something going on at 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:

So, 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:

So, if the follicle has died it's too late?

Alan:

If the follicle ... Yeah, it can be beyond repair let's say. You're not going to have an effect there. So, if you 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:

So, how would you get a new follicle there?

Alan:

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

Dave:

So, transplant ... I remember I first read about these in 20, probably when you first started doing this, 25 years ago. That seems so painful. They're going to take a big strip of skin and just move it and staple it onto your forehead. Like, that's not something I would be interested in doing, but in the course of preparing for our interview, and all, I didn't understand that you can actually move a single follicle at a time, basically.

Alan:

Yeah, so 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:

You're, basically, taking follicles that don't fall out with male pattern baldness, things from the side, and you put them where the things that are already dead are, and then you keep them alive by doing things I should have done when I was younger that didn't exist?

Alan:

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 ...

Dave:

How does-

Alan:

... going to be affected by your hormones.

Dave:

How does that happen? How does it get pre-programmed? Is that just from where it grows out?

Alan:

Where they're located. So 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. So, the occipital zone, right 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. So, when we take those follicles and we put them in the new area, the area that used to have hair, they will live and grow forever.

Dave:

Oh that's pretty cool. So, they won't be affected, and as long as you have ... I suppose like chemotherapy, or something, would affect them?

Alan:

Correct.

Dave:

But other than-

Alan:

But not male pattern hair loss.

Dave:

So, toxins could affect them but ...

Alan:

Sure.

Dave:

... the normal hormonal stuff wouldn't?

Alan:

Right. If you were stuck on a desert island, you're starving, if there's a high degree of inflammation, you have an autoimmune disease, or something like that, it could affect those follicles. Chemotherapy, obviously, and other things that are going to knock out all the hair globally, that would be a problem. But the male pattern and female pattern hair loss is relatively permanent, which is good news. But you still have to protect the other hair, so that's where the other therapies come in.

Dave:

Okay. In full disclosure here, I said, All right, Alan, I want to know about this because when I wrote Super Human I had not ever colored my hair at all, and I talked about ... Look, I've held the line, compared to everyone in my family, pretty darn well from the mitochondrial perspective. The problem is that even though I think my mitochondria are doing pretty well based on all the evidence I have, and all the stuff I've written, I manage my hormones reasonably well, but I used testosterone pellets, and pellets are really convenient but I noticed after about six months of pellets that my hairline had receded, which pissed me off because I've used testosterone since I was 26, for more than 20 years, because my body didn't make it. I had less testosterone and more estrogen than my mom.

So, bioidentical levels no problems with my hair from it, but then I used the pellets, and I'm not saying pellets cause hair loss, they don't for most people, but for me whatever that combination was with my pathways it did that. So I went, Alan, we got to hack this. He's like, "Come on in." So, you guys are going to see in the video, if you watch this on YouTube, or if you just go to the Dave Asprey page, I'm actually going to get some of my follicles moved from that amazing immortal hair zone into the front, and you're going to do the work for me?

Alan:

For sure.

Dave:

I'm going to take one for the team. Also, if you're a guy who's saying, "Oh, that's interesting, but I would never do it, or I'd never talk about it." Yeah, I'm hacking my hair and I'm totally, totally cool with that, because I'm going to live to 180 and when I'm 180 I'd like to have hair at least as thick as yours. I'd be fine with that.

Alan:

Well, you deserve to have a thick full head of hair, as does everybody.

Dave:

I'm not doing particularly badly for, I'm 47.

Alan:

You're doing okay.

Dave:

But, I think, definitely my forehead's gotten a little larger and I'm like, Screw that noise. I want to have hair like I had when I was 30, so I'm going to do that.

Alan:

Right. So, we know testosterone in the body gets converted to DHT, ...

Dave:

Right.

Alan:

... dihydrotestosterone, and that's the trigger for the miniaturization, and the weakening of the hair follicles.

Dave:

Well, it's a trigger. I think that the DHT myth. It's not a myth, because DHT buildup does cause hair loss.

Alan:

Sure.

Dave:

But, that DHT is a bad form of testosterone is a myth because DHT's an important ...

Alan:

Sure.

Dave:

... signaling metabolite, and if you inhibit all DHT in the body bad things can happen to your hormones. In fact, it's one reason I've never taken minoxidil, or there's-

Alan:

Finasteride.

Dave:

Sorry, finasteride. Yeah, I'm doing those backwards, because some number of people who take it orally it kind of [inaudible 00:23:24] be castrated, like all their hormones stop working and they don't get it back. They call it post-finasteride therapy. But, I'm considering doing it topically instead of orally, and that's something that you ... Do you make it or do you just prescribe it? How's that work?

Alan:

So, we prescribe it. We work with a compounding pharmacy that makes a very clever mixture of topical finasteride for the scalp.

Dave:

Okay.

Alan:

So, theoretically that should avoid this large amount of finasteride in the serum, in the bloodstream ...

Dave:

We don't want it, right?

Alan:

... which you don't want. Right, exactly. But, it will still have that activity at the level of the scalp. So, we've seen some very nice results with topical finasteride.

Dave:

So, you can put that on topically and it's probably safe?

Alan:

Well, the data shows that we're getting some hair growth, and fewer instances of side effects than you would if you were taking it systemically.

Dave:

Got it. That's something I would not take systemically, I'd rather be bald. But topically I think that the ROI is there, like the risk/reward looks like it's pretty good.

Alan:

For your listeners, keep in mind that 98% of patients on oral finasteride don't have any kind of side effects, so you have to make that option ...

Dave:

Sure.

Alan:

... and be aware that there are risks and rewards, like you said, and make the choice.

Dave:

Also, if you're already on it and you aren't having massive sexual side effects like no erections whatsoever, then great, you dodged that bullet.

Alan:

I still want to play with that ...

Dave:

Good point.

Dave:

... given my biology. I did not start out with a good biological template, having weighed 300 pounds, autoimmunity, et cetera. I don't know if that's something that I wanted to do.

Alan:

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, all the different ways that we've talked about.

Dave:

What about minoxidil? This was originally a heart drug, right?

Alan:

Sure. So minoxidil was an oral pill for blood pressure originally and those patients started growing hair on their knuckles. No, but they noticed increase in hair growth all over the body, and they figured, Well, one man's side effect is another man's indication. So, that's how Rogaine was born essentially.

Dave:

You can put that on topically, as well?

Alan:

Yes. The main issue with minoxidil, at least in 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.

Dave:

So, you keep your hair but you have greasy hair?

Alan:

Yeah, greasy scalp or even on worse-case scenario, some kind of irritation or inflammation. So, we've got kind of a fix for that, too. Working with the 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. That's Formula 82M.

Dave:

Okay, that's something they make? I haven't tried any of this stuff. I'm just going to try this stuff. Like, hey, I'll just jump in with both feet, so I'm going to move my immortal hair from the back of my head to the front of my head, or you're going to do that, ...

Alan:

Yes.

Dave:

... but I'm asking you to do that, right after the podcast actually. Then, I'm going to try whatever goop you think I should put on there, after I read the ingredients to make sure that there isn't something in there that I just wouldn't put on my body.

Alan:

Sure.

Dave:

I think you formulate pretty effectively. Then, I feel like I'm well versed on the nutrients that support hair, for instance collagen. I've lost track of the number of times people say, "Dave, I eat your Bulletproof collagen but the big problem is I have to go to the hairdresser and dye my roots a lot more often because my hair is growing a lot faster," just from nutrients to grow hair is important.

Alan:

Absolutely.

Dave:

But then there's other things, that biotin, and just all kinds of herbal things that affect hair. You also make hair supplements, basically. What are the hair supplements that you've found, or at least the things like biotin, or zinc. What are the things that people need to take to have healthy hair?

Alan:

I think most people know that biotin and 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 your fingernails and hair is made of. A lot of that information is actually in the veterinary medicine literature for racehorses, and such, to show that biotin supplementation improved with hoof strength, ...

Dave:

Of course.

Alan:

... things like that. Of course, if you're investing in thoroughbreds you want good hoofs, and such. So 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. So, we prescribe a super biotin, ...

Dave:

Yeah, you make that.

Alan:

... 10,000.

Dave:

It's funny you mention racehorses. I don't think that hair loss is a big issue but hoof matters.

Alan:

Hoofs.

Dave:

The low-level laser therapy was pioneered on race horses, and the first device I bought for that ... This was before it was allowed by the FDA for any human use. I just bought one designed for racehorses and I used that on myself, and it worked so very well. Now you can clearly get human grade lighting systems.

Alan:

Oh, yeah.

Dave:

I love that they are going back to that research, because, Hey, if you have a million dollar horse you're going to measure what works. It's the idea of measuring what works that's now carried through into humans. You've measured what works with these topical preparations. You've measured what works with light therapy on the head. What other things are going on with hair that maybe people don't know about? What are the secrets?

Alan:

So, probably one of the most exciting therapies that we have is platelet-rich plasma that has 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. We've leveraged those platelet-rich plasma treatments, and the growth factors that they provide, for better hair regrowth.

Dave:

I've had stem cells, my own stem cells. Harry Adelson and Amy Killen, who've been on the show ...

Alan:

For sure.

Dave:

... did those.

Alan:

Friends of ours.

Dave:

Friends of course. In fact, you went to school with Harry, right?

Alan:

We did the first stem cell certification program through the American Academy of Anti-Aging together, so I've known Harry a long time ...

Dave:

Excellent.

Alan:

... [crosstalk 00:29:44] what he does, and we have many mutual patients.

Dave:

He's got a new stem cell documentary that just came out. I was just there for the premier in it.

Alan:

Awesome.

Dave:

What he and Amy did was they did inject some stem cells, and probably PRP, up there, but none of the work that you do. I think it helped, but I don't know that it was enough, given that I already had dead hair follicles in the front that probably died a while ago.

Alan:

Right. Well, there's some nuance to applying PRP, making sure that we're using the right number of platelets per microliter, for example. There's a sweet spot, 1.5 million platelets per microliter is what we think is the right amount. Then, in the field of regenerative medicine it's not just the cells and the signals but also scaffold, so what are the scaffolding components that we can use in conjunction with PRP? So, not all PRP is really created equally, and I guess that's what I've noticed over the past six or ten years is that PRP is now available everywhere, and many of your local dermatologists, and so forth, may think that the skin PRP that they're using to reduce wrinkles, and improve skin tone, can be used on the scalp. They may not be getting as powerful a result as what we can get.

Dave:

They probably aren't in terms of what you're doing is yours is very specialized, not just PRP, but you're doing a lot of other things that go way beyond that. We just toured the facility and you have these six different rooms full of all the latest robotic toys, all the cool stuff, but PRP is in the corner of one of the rooms because it's kind of one of the many things that are part of making your hair grow back.

Alan:

Sure. Well, we have a PRP room. That room is specifically for PRP, but you may have noticed that there's centrifuges in every room because we spin PRP on every hair transplant patient. Every procedure that we do we're going to use PRP in a number of different ways, not just for hair regrowth, but also for wound healing, and things such as that.

Dave:

So, I'm going to get more PRP that you've, basically, specified how it's going to be to support the growth of the hair follicles that you move?

Alan:

Exactly.

Dave:

Okay, that's pretty exciting. In terms of all these other things that are out there, stem cells, exosomes, stem cell juice, and things like that, usefulness for hair? I know the FDA is now talking about regulating those things even they're all over the place.

Alan:

Sure. So, you can use adipose tissue, for example, and harvest the mesenchymal stem cells in a small liposuction procedure and use that for hair regrowth. There's some interesting data on that.

Dave:

Read Super Human if you want to get the details on all that. There's a whole chapter on what's going on with stem cells. So, it's possible to do that?

Alan:

Now, we think that the latest and greatest really exosomes, which are these little packets that cells use to communicate with each other, can do the work that the stem cells were doing without having to use the cells.

Dave:

That's really cool. I call them stem cell juice because stem cells secrete exosomes once they go in there, so if you don't get the stem cells because a regulatory body said you weren't allowed to use your body's own cells on yourself. I'm not sure how that works, but that's the current state of things, at least in the U.S.

Alan:

There's certain regulations in the U.S. on what you can do to those cells that you harvest, let's say out of the body, what you can do to them. So, if you minimally manipulate them, use them in the same surgical procedure, same day, then you can.

Dave:

You can, okay?

Alan:

If you want to try to avoid that more invasive procedure of stem cell then exosomes might be, might be, a nice solution for that. Growth factors today are being bioengineered, so there are bioengineered growth factors that we can get right out of the laboratory that with these cells, these mesenchymal stem cells, have been manipulated in a certain way to produce a secretome, which is that balance of different types of growth factors, ones that have different activities at the level of the scalp, let's say. We can apply those directly to the scalp during a procedure, during a PRP, microneedling, and you can even get that off the shelf and go home with that.

Dave:

Alan, someone came to you tomorrow, maybe me, with a million dollars and said, "I want a perfect head of hair, cost is no object," what would you do?

Alan:

Well, so actually that depends on what we're starting with, because if someone is coming in with a pretty decent head of hair to start with then we can help protect it and enhance it, right?

Dave:

Let's give you a little more data.

Alan:

Okay.

Dave:

It's a guy, and he's got a little bit of hair loss but not tons. I'd like to keep it. It's different if someone comes in with no hair at all.

Alan:

Like my dad.

Dave:

Yeah, that's a different scenario. Someone who's fighting the good fight and has given up some ground but is still keeping it going, and this is a man at this point.

Alan:

Sure.

Dave:

Your answer might be different for women. He's like, Look, I got all the money in the world, I want all the hair in the world. Hook me up. What would you do?

Alan:

So what's possible. So, first thing we would do if someone came in is find out what their goal is. If they have let's say a goal to restore their teenager hairline ...

Dave:

There you go.

Alan:

... that might not be such a great idea, because we want the hairline to look normal and natural. So, we have to choose a hairline, and a shape, and a design. If we're talking about restoring a hairline we have to restore something that looks normal and natural, that's not going to draw attention to itself as something that's bizarre or crazy.

Dave:

Okay.

Alan:

But let's say we've chosen a hairline that's lower than what he has right now. We want to turn the clock back a little bit. We have to do two different things. There's two battles to fight at the same time. There's, of course, the restoration. We got to turn the clock back a hair. We have to reframe his face, but we also have to protect the other hair that he has. So, the transplant process might ensue. We're going to do follicular unit extraction. That's the minimally invasive style of harvesting. We've got some new technology that allows us to take the follicles one at a time without trimming the hair.

Dave:

What is that? Is it like a little melon baller? How does this actually work?

Alan:

A melon baller? No, no, I've never heard it quite described like that. You will find out that it is the use of a very, very small microsurgical instrument that's kind of round in shape, but it's more like ... Imagine trying to remove a palm tree from your backyard and putting it into the front yard. So, you have to kind of carve around the root and then lift the tree up and put it in its new location. So, we're going to do that one at a time for either a single-hair follicle, or a group of two or three hair follicles.

Dave:

How big of a chunk of root does it take to go with the hair?

Alan:

It's-

Dave:

[crosstalk 00:36:22] pull the hair out?

Alan:

It's extremely tiny. So, the good news is that this is not your father's hair transplant. This is not a row of plugs which contain 30 or 40 hairs. This is not going to be a painful process. So, under local anesthetic we're going to literally make a scoring incision around each and every follicle that we're going to harvest, each graft. That incision is literally less than a mm, so it could be 0.8 mm tool that's being used. So it's very small. Then, that follicle, or that graft, is going to get plucked out of the scalp.

Dave:

Okay, and so you're going to spray me with Lidocaine. It'll be numb. You're going to do these little tool things-

Alan:

Guess what, it's going to be an injection.

Dave:

You're going to inject it. I'm fine with that.

Alan:

Yeah, it's going to be an injection of Lidocaine, but you're not going to feel it.

Dave:

Got it.

Alan:

You're not going to feel that.

Dave:

So, then you're going to do that, and then you're going to ... When you plant it do you have to make a little incision for it, or how does that work?

Alan:

Yes, so the incision, or recipient sites, which is where they're going to be implanted, is based on the design that you and I create together. So, we'll actually work on that shape and design.

Dave:

I get to pick one?

Alan:

Well, you're not really picking, but we're going to work on it together that we're at least looking at the same end goal, let's say.

Dave:

Okay. I really like Wolverine. You know how he does that thing where he like shaves his chin and then has that cool beard, the mutton chop thing? I want to do the reverse so my widow's peak comes down to my eyebrows. Could I do that?

Alan:

Yes, Eddie Munster. Yes, sure, that would look great on you, Dave.

Dave:

The real question is, Can you plant those hair follicles anywhere you want?

Alan:

Yes we can. So, I did-

Dave:

I could use chest hair? I could do that?

Alan:

We can use chest hair.

Dave:

I'm not going to do any of that, but they will grow anywhere?

Alan:

Any follicle that we use can be planted anywhere as long as the skin bleeds in that zone. Yes, it will live and grow forever. So, I did have a YouTube celebrity ask me for a lightning bolt shape on his forehead. We declined. We declined, but he did convince me to transplant a few hairs into his hand.

Dave:

How far forward would we move my hairline?

Alan:

That's an excellent question. So, if you look in the mirror and you raise your eyebrows, you will see where that hairline used to be. Where the wrinkles stop and the smooth scalp beings that's the anatomical location that you used to have. You never had a super-duper low hairline but we can obviously check photos from years ago to determine that. So, we're probably going to move that hairline about a fingers breadth or so.

Dave:

Okay, so not down much?

Alan:

Yeah. We can decide what we want, what would look appropriate. The great thing is that when you and I work together on that design it's done with a pencil, so we can draw it in. We look at it a couple different ways, left to right, so forth. Take a picture of it even, and then if we want to see what it would look like with a lower hairline we can erase it and draw it in again.

Dave:

All right. That's-

Alan:

Once we decide then we'll execute.

Dave:

You have to get some photos of that. That's going to be cool.

Alan:

Absolutely.

Dave:

All right. What about things like peptides? I know you can speed surgical healing with red light, and with peptides, with ozone. So, are there specific peptides that you use in the practice?

Alan:

So, 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:

Wow.

Alan:

It's been a long, long time with copper peptides. That was, basically, like 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. Of course, in those days we had a row of stitches in the back of their scalp that they needed to heal.

Dave:

Ouch.

Alan:

So 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 2 narcotics anymore for years now. You wouldn't need it.

Dave:

I'm looking at this as a pretty minor thing where it's going to take a good amount of time but it's a bunch of tiny little things. Given that I inject myself with peptides just about every day I'm like this isn't really on the scale of crazy stuff like having my bone marrow taken out. I'm like this is a walk in the park.

Alan:

Right. Many of the peptides that you're probably already using are going to be helpful for wound healing and recovery from this process.

Dave:

They're not a standard part of what you do?

Alan:

Not every patient wants to do peptides. Obviously, there's going to be costs involved.

Dave:

But you're willing to ...

Alan:

Absolutely.

Dave:

... work with them on that?

Alan:

We're on top of that. Yeah, absolutely.

Dave:

Things like, I'm guessing BPT157, and then GHK, the copper peptide.

Alan:

Copper GHK, yeah.

Dave:

Are there other ones that are useful?

Alan:

There's thymosin beta, TB.

Dave:

Like a TB500, okay.

Alan:

Yeah, which is one that we're looking at. So, again, the data is very preliminary at this point, ...

Dave:

Sure.

Alan:

... but stay tuned. For patients who want to try it we talk about risk/benefit and if they want it then we do it.

Dave:

Growth hormone?

Alan:

So, growth hormone will not grow your hair back contrary to popular belief, but it can be used for wound healing and recovery after surgery.

Dave:

Okay, got it. So, if you were like a Hollywood star and you had to look really good faster you might get another ... It's only seven days of healing anyway, so you might get it in four?

Alan:

Actually, most people's concern is not necessarily that healing time but it's the haircut that's required for large sessions of hair transplant. So we have some new ways to kind of avoid that now for people who don't want to look dramatically different. You have a short haircut. You're not going to look much different immediately after the procedure.

Dave:

I was loving it when we talked about doing this. It was like, Oh, the sides are going to have to be short. I'm like, That's awesome because last year for Burning Man I went to the hair stylist place across the street from Bulletproof headquarters, and I'm like, Hey, I need a CEO-hawk. They're like, What's that? I said, Well, I'm a CEO but I'm going to Burning Man. I want a Mohawk so I have to be able to look like a CEO and have a Mohawk at the same time.

Alan:

Perfect. The CEO-hawk is exactly the haircut that I'm going to give you ...

Dave:

[inaudible 00:42:05] short.

Alan:

... for a hair transplant.

Dave:

It's like short on the sides, basically, and normal on top, right?

Alan:

Exactly.

Dave:

But not as high as a Mohawk.

Alan:

Right.

Dave:

That's actually becoming in fashion anyway.

Alan:

Absolutely. It's because everybody's getting hair transplants. No, no, I don't really know. Yeah, so we call that a wide shave and that's the most efficient way to get the most amount of hair in the least amount of time access to all the donor zones. Some of our patients have previous old-style harvesting so they have maybe old linear scars. So, we've developed a new technique that allows us to take the hair without trimming it.

Dave:

Oh, interesting.

Alan:

This is called a no-shave or here at Bauman we call it a VIP FUE procedure. So, it's long hair, no shave, preview hair transplant.

Dave:

Wow. So, you have to work on your marketing because VIP FU, everyone knows what that means. I'm just kidding. So, VIP for you. That's what it means.

Alan:

FUE.

Dave:

FUE. Yeah, got it.

Alan:

FUE.

Dave:

FUE.

Alan:

Follicular unit extraction. That's the term. So, VIP, very important person. This method allows us to take the individual hair follicles and graft.

Dave:

And it doesn't fall out? Wow.

Alan:

Well, the hair does. So that's the caveat. When we harvest those follicles they have a long hair attached, and then when we implant them you can actually see the hair immediately ...

Dave:

Wow.

Alan:

... after the procedure so that helps cover some of the crusting.

Dave:

Okay.

Alan:

Then, also, those hairs they're going to shed, so in about two weeks the follicle shuts down. Those hairs are going to shed and then they're going to regrow at the regular time about four months or so later on.

Dave:

So you can do me.

Alan:

It's kind of a fun process.

Dave:

You can only do that for a little while.

Alan:

Right.

Dave:

Just to know you get two weeks of that and then you don't see the hair for a while.

Alan:

The major benefit is not that, Oh, my god, you're going to have that hair instantly, because obviously it's temporary, but the cool part of the process is that you don't have to dramatically change your hairstyle.

Dave:

That's interesting. I would have no need for that.

Alan:

Right. You have short hair. That's not for you.

Dave:

You can totally do that.

Alan:

Wow, okay.

Dave:

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 and move it to the front, and that's gone.

Alan:

Correct. That's not what we do anymore.

Dave:

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:

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

Dave:

You're been a leader in that.

Alan:

... pioneer on that. I really see the medical management of hair loss as being the key location that a lot of changes are going to be made. So, 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 HairCheck 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 you're going to know the response, if you give it enough time. So, 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.

So, whatever hack you want to do, and this is often a discussion I have with my patients. They're very aggressive in new technologies, and we may not have a lot of the published scientific research on much of this set in stone yet. There's maybe some inklings towards this, that, or the other.

Dave:

It never is.

Alan:

So, we want to know. Remember, individualized, personalized medicine your response may be different then the next guy, it may be different then the next woman. How do we know what's working on you, and it's this follow-up measurement, this follow-up protocol. What I see changing in the future is you either taking some kind of device home with you that will help you track your hair, or visiting someone in your local neighborhood who can actually do that measurement for you, perhaps someone even in your house, like your wife could literally hold this device up to your scalp and get a measurement.

Dave:

It's kind of like a blood pressure measurement for your hair?

Alan:

Exactly.

Dave:

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

Alan:

So, even though through the door, which we see about 1000 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. 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. So, they're feeling the changes in their hair maybe more quickly. They made notice that their ponytail volume is changing or they're having ...

Dave:

[crosstalk 00:47:10]

Alan:

... excessive shedding.

Dave:

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

Alan:

Absolutely. So, 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:

For sure.

Alan:

... or changing your work schedule, staying up at night and things like that.

Dave:

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. Well, get into sleep and hair. What are the things that women can do, specifically, to protect their hair? What do you say if someone comes in, Oh, you have thin hair and you're not a candidate to move hairs around on your head, what ...

Alan:

Options are there?

Dave:

... other things can they do?

Alan:

Well, the first thing is that they have to get an evaluation by a hair restoration physician. So 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. So, getting in touch with someone who can actually measure and evaluate their situation is the first most important step.

Dave:

What are the top three metrics you need to look at?

Alan:

When the person comes in we're going to get their medical history, so 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 medical conditions like hormone imbalance? As you mentioned thyroid in yourself, thyroid problems in women are very common. 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.

So, 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 in 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.

Then, we're going to measure different areas. We're going to look at the back of the scalp versus the front with the HairCheck tool. Basically, it's a cross-sectional bundle measurement. It's noninvasive so it makes a small bundle, squeezes it, gives us a cross-sectional area without any trimming, and we compare that good zone, the occipital or back of the scalp, to other areas and we can tell them, Hey, you've lost 30% of your hair, 40%, that's why your part line is looking a little bit wider.

Dave:

So, super quantitative?

Alan:

Absolutely.

Dave:

I had no idea.

Alan:

So, you're going to go through all that. Then, we'll look with the microscope and we'll be able to see. Think of the head of hair is 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? The treatment regimen is basically designed to accomplish those things, based on her goals.

Dave:

That's amazing. It's a detailed analysis, but it's sort of like if you come to an anti-aging doctor and say, Hey, what vitamins and hormones do I need. They would say, Well, could we draw a blood test or two,

and let's look at the data, and let's get your genes, let's look at your microbiome and all of that. Is there a name for all of these metrics where someone can get a report, or a standard lab? What's it called?

Alan:

There's basically two things that we do in the office. One is the HairCheck. So, HairCheck measurements gives us that hair mass index or that cross-sectional bundle measurement, cross-sectional area.

Dave:

Is that a device or?

Alan:

The HairCheck is a tool, and you're going to get the data from that tool when you're in the office for that consultation. So we're going to measure a few different areas with the HairCheck tool.

Dave:

So this is only at your office?

Alan:

Correct.

Dave:

Okay, got it.

Alan:

Or at someone's office that we've trained. It could be a licensed professional in the medical field, or in beauty, but-

Dave:

So, you're training people to use the tool set.

Alan:

Yes.

Dave:

So you might be able to go to a hair person and say I want HairCheck and then note it is.

Alan:

Yes, if they are a certified hair coach, which is a training program that we do here in the office every quarter, they will be certified on the use of that tool.

Dave:

Okay, good deal. So you are training other professionals in ...

Alan:

How to use that.

Dave:

... all of your secret knowledge of hair mastery?

Alan:

Yes. There's what we call the HairCam. HairCam is a microscope. That's where we take photos of the scalp under high-powered microscopy to look at the hair density and the hair caliber qualitatively. Also, there's a HairCam analysis which is an AI analysis of that photograph that enables us to look at exactly what the hair counts are and the thickness of each individual hair. Stay tuned for that. That's available in the office at the moment, but we may have other ways to have you do that kind of analysis on your own.

Dave:

Awesome. Sleep and hair loss. I've been pretty vocal about the fact that if you wake up really early in the morning it makes you a bad person. No, more to the point that I'm a big fan of the fact that some people are morning people, some people are night people, and there's a circadian genetic component to it, and that most people have a normal thing. You got to go to sleep at the right time for you regularly. Let's assume that we take that out of the equation that we're talking about now. Say, you're going to bed at the right time versus prescribing a right time, what is sleeping when it's dark and sleeping well do for hair quality versus getting bad sleep or shift work?

Alan:

Well, here's how I think about chronobiology. First of all, we know, as you just mentioned, circadian rhythm is regulated by light and dark cycles, and evolutionarily we're built to hopefully sleep about eight hours a night. In the modern world we know that's, basically, been significantly disrupted, more than two hours less sleep per night just within the past couple hundred years with the industrial revolution.

The hair follicle is a cyclical organ. So, every hair follicle, a healthy hair follicle on your scalp, is going to grow for a number of years in antigen, or growth phase, for about five to seven years is the average length of antigen, and then it's going to stop and it's going to rest and it's going to degenerate. That usually takes about 90 days, and then it's going to click in and start up again. It's going to regenerate, rebuild, and create a new hair fiber. That cycle is going to repeat itself over and over and over again. That's why we see in a healthy head of hair, of 100,000 hair follicles, 150,000, you're going to see about 100 hairs per day shed, 100-200 every single day.

If there's disruption at the level of the follicle of the chronobiology you're going to see a lot more shedding. Follicles are going to spend a lot more time in the resting phase and not as much time in the growing phase. We do notice this in women who, for example, are nurses and they shift from day shift work to night shift work. Their sleep cycles are disrupted, they can enter into a shedding phase and it can dramatically affect hair volume. It can accelerate hereditary hair loss. This is something that we see clinically in the practice quite often. Even patients who are severely jet lagged often will have a triggered shedding phase.

I don't know necessarily that all the biology has been worked out correlating the master clock, the circadian rhythm, with what's going on at the level of the hair follicle but, of course, we know that in nature different times of the year animals that have fur will shed their winter coats and then grow the summer coat and vice versa in the change of seasons. We know that there's something that's related to that central biologic clock and also the hair follicles. So, who knows.

Dave:

What else about hair should I have asked you that everyone listening ought to know. Maybe like how often to shampoo? I haven't asked you that.

Alan:

Oh, yeah, that's a great question. Hair care and scalp care is very much like skin care. The skin as we age ... Well, first of all, you're born with certain tendencies, oily or dry, let's say, certain number of sebaceous glands, which are the oil glands on the scalp, and their level of activity can fluctuate over the course of your life depending on a lot of things from nutrition, diet, to hormones, stress, medications, you name it. Cholesterol medications will dry out quicker than anything else, basically.

My point is, is that it's kind of a moving target how often you should shampoo and then also follow with conditioner. It also depends on the quality and quantity of your hair, because if your hair is super coarse, and super curly you might need something that's more of a deep conditioner. Whereas, if you have thinner, finer hair you may be able to get away with something that's more lighter in terms of conditioning. If you have thin hair, and you have oily scalp, then that's a separate issue, and you have to use more let's call it a sudsy type of shampoo, ...

Dave:

Sure.

Alan:

... which is a degree of surfactancy, for example. These degrees of surfactancy or sudsyness depends on different ingredients and how these shampoos are manufactured. The short answer is that you really need an evaluation of your skin of your scalp to see exactly what's going on. That's one of the things that we do here in the practice is a trichology evaluation. Trichology is the study of the scalp, and hair, and we would use a variety of tools, like something that would measure pH level, moisture level, sebum level. We look with different types of microscopic cameras, blue light, white light cameras to really determine what's going on at the level of your scalp ...

Dave:

Wow.

Alan:

... to coordinate that with the quality of your hair, your hair styling issues, whether you're coloring or not, and also what you're trying to accomplish with your hair growth regimen. All of that gets distilled down into some recommendations. Many patients will come in with itchy, dry, or some other symptomatic, type of scalp and we have to rectify that. We have to apply a therapeutic intervention. That could be a treatment in the office. It could be something you take home. It could be just a change in your current regimen. Maybe just shampooing less and conditioning more.

Dave:

So you're doing a very quantified scalp analysis when people are lucky enough to come in and see you?

Alan:

Yes, we're going to hack your scalp.

Dave:

Okay. I'm excited to see what you have to say. I've found that if I shampoo like 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, hair you can chill.

Alan:

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

Dave:

Wow.

Alan:

If you're going to the gym and things like that, and depending on the styling products. So, there's a wide variation geographically in the world how often people shampoo. 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 conditioning wash, or co-wash system. 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 depending on what kind of ... You say, "Well, how often should you shampoo?" It kind of depends on what you're using to wash your hair.

Dave:

And also your goals. I went 18 months without washing my hair. There's lots of research that you grow a healthier biome when you do that. So, I'm going to do this No Poo thing and it worked pretty well. But, if I wanted my hair a little bit longer it seemed that oil would build up after a while, so I'm not a fan of washing it a lot, but I also am using natural stuff.

Alan:

Did you have any symptoms? That's pretty interesting. What kind of symptoms did you notice going from whatever shampoo regimen you did before to like this No Poo thing? When you say No Poo you did conditioner?

Dave:

No conditioner, no shampoo.

Alan:

No shampoo?

Dave:

Yeah, and what I found was it saved me a lot of time. I would just get my head wet and dry it and it worked. The first maybe month of not washing or conditioning my hair at all it was a little bit oily, and then the oil production just ramped down and it was perfectly normal. One of the reasons I started shampooing again, and all that, is that when you go on like a TV show, like Dr. Oz, or something, and I do

that for my book tours when I launch a book, they spray all kinds of crap in your hair. If you're going to be putting gel and stuff in your hair you have to wash your hair because otherwise you're going to have like stalactites. How do I get this out of my hair? If I wash it then it's going to go through this whole cycle of like being too oily, then too dry. So, I wash and condition once a week maybe.

Alan:

Yeah, that's pretty interesting. The body will self-regulate in that way. I think that maybe over shampooing is probably the cause of a lot of irritation.

Dave:

I agree with you and [crosstalk 01:00:48] chemicals. You formulate some shampoos that are specific for hair loss with good ingredients. I suppose even those you don't want to use them twice a day because it's probably not useful, or is it?

Alan:

Oh, no. They should just continue to use that all the time. No, I'm teasing. Of course, it's going to be-

Dave:

Put it in your coffee, it's great.

Alan:

Every time you think about it you should put it in your hair. The point is that the correct frequency of use of those types of therapeutic ingredients is going to be based on the quality of your skin, and your hair, and we can figure that out scientifically. We can measure that actually.

Dave:

Okay, so there is the right answer ...

Alan:

The ingredients ...

Dave:

... [crosstalk 01:01:24] day.

Alan:

... that we have generally are antiandrogen-type ingredients, which are very good for the scalp to diminish sebum production, things like that, which very often when you have too much sebum you get a little bit more hair loss situation going on.

Dave:

Talk to me about a common body-building ingredient that messes up men's hair.

Alan:

So, most likely what you're asking about is creatine.

Dave:

Yes.

Alan:

For many, many years in the practice we had young guys come in, body builders, athletes, and they would be on creatine and wondering why their hair was excessively thinning, why did they see some kind of acceleration in their hair loss. We didn't really know why but we knew that there was some kind of a correlation perhaps between that particular age group, and their lifestyle, and these creatine-containing substances. Now we know. There have been several clinical trials that show a direct correlation between creatine intake and an increase in DHT in the body, and DHT, as you know, that's the bad guy. That's what's going to cause your follicles to miniaturize, or at least one of the reasons why you could be having male pattern hair loss.

Dave:

It's interesting because DHT can actually help you build muscle. It's not like it's a bad for you throughout, but it's part of the whole male hormone thing, and very low DHT is anti-muscle. If you get too much of it it's really bad for your hair. So creatine, and I did not know this, creatine's good for mitochondria, at least at certain doses, and as you age you get less of it, but it may be tied to hair loss. Maybe backing off from the creatine a little bit is a good idea for body builders?

Alan:

Absolutely. Whenever you ask me about a question about a particular ingredient I'm always going to answer it from the perspective of how it's going to affect your hair. Many of our patients come in and they want to look good, and feel great. They're on testosterone replacement therapy perhaps, or they're taking supplements like creatine to improve muscle mass and to feel good in that way, but they need to know that what's the downside, and the downside of excess, or excessive, creatine use is that they could be increasing their DHT, which could hurt their hair follicles.

We have a couple of ways to fight that process. You mentioned decreasing the amount of creatine. Certainly we can do that. There's anti-androgen therapies that are nutraceuticals like saw palmetto, for example. There are pharmaceutical interventions like finasteride, and dutasteride, and other systemic medications. Of course, now we can put finasteride topically into the scalp to reduce the amount that you would be exposed to systemically.

Dave:

Is there a name for all of these metrics where someone can get a report, or a standard lab? What's it called?

Alan:

There's, basically, two things that we do in the office. One is the HairCheck, and so HairCheck measurements gives us that hair mass index, or that cross-sectional bundle measurement, cross-sectional area.

Dave:

Is that a device or?

Alan:

The HairCheck is a tool, and you're going to get the data from that tool when you're in the office for that consultation. So we're going to measure a few different areas with the HairCheck tool.

Dave:

So this is only at your office?

Alan:

Correct.

Dave:

Okay, got it.

Alan:

Or at someone's office that we've trained. It could be a licensed professional in the medical field, or in beauty, but-

Dave:

So, you're training people to use the tool set.

Alan:

Yes.

Dave:

So you might be able to go to a hair person and say I want HairCheck and then note it as?

Alan:

Yes, if they are a certified hair coach, which is a training program that we do here in the office every quarter, they will be certified on the use of that tool.

Dave:

Okay, good deal. So you are training other professionals in ...

Alan:

How to use that.

Dave:

... all of your secret knowledge of hair mastery?

Alan:

Yes. There's what we call the HairCam. HairCam is a microscope. That's where we take photos of the scalp under high-powered microscopy to look at the hair density and the hair caliber qualitatively. Also,

there's a HairCam analysis which is an AI analysis of that photograph that enables us to look at exactly what the hair counts are and the thickness of each individual hair.

Dave:

Okay.

Alan:

Stay tuned for that. That's available in the office at the moment, but we may have other ways to have you do that kind of analysis on your own.

Dave:

Awesome. I have 14 years of sleep data. I've been tracking my hormones since I was 26. I have stacks of things, and I've used different lights, and I've used now the LASER TurboCap that you make. In fact, I write about it in Super Human, all these different hair things and sort of the three reasons that I can find, and three systems, but have never actually measured the hair, which is kind of funny now that you put it out like that, given how quantitative I am. I just didn't know that you could. We're going to get the numbers. I'm really intrigued at this idea of coming back in a year and saying what happened and what does the hair look like, and all that.

So, let's get going on this. Guys, you definitely need to check this out on YouTube. We're going to have, or even my Instagram page, dave.asprey, because there's going to be a video of what's going on here. So, if you're curious what does this look like, and all, we're going to take little bits of this and string it together in a little story so you can see kind of what I'm going through here with Dr. Alan Bauman. You have a website for the clinic?

Alan:

Baumanmedical.com is the place where any patient anywhere, anytime, can get in touch with us and schedule their virtual consultation. Many of our patients-

Dave:

You do remote consults?

Alan:

Absolutely. Absolutely, and that's one of the most common ways that patients will connect with the practice.

Dave:

Awesome. Well, I am grateful that you are going to be hacking my hair for me, and I'm happy. On 23 years of focusing on this, I get that you have a real passion for it. You've got all the toys, all the data, all the different ways of getting at this very complex systemic, or systems biology problem. It's not just one thing. That's why when I tried to pin you down on a few of the things like what's the right amount of shampoo, or whatever, you're saying, "Well, it depends," which is an educated answer here. Thank you for practicing your art well, and I wouldn't let anyone do this to my hair. In fact, I don't think I need a hair transplant, I just want to try it.

Alan:

No, you need it, Dave.

Dave:
Thanks, Alan.