



# PEPTIDE SUMMIT 2.0

## Peptide Therapies for Women's Health, Thicker Hair, and Youthful Skin

Matthew Cook, M.D. interviewing  
**Amber Krogsrud, BSc, ND**



### **Matthew Cook, M.D.**

Welcome everybody to the peptide summit. My name's Matthew Cook, M.D. and I'm with Dr. Amber and I'm delighted to be with her today. This is scene one, take two. We did an amazing podcast that was fun and due to technical difficulties, it cut out in the middle. So we get to do it again. I've been actually looking forward to this so I'm delighted to have you on and thanks for taking some time to talk to us.

### **Amber Krogsrud, BSc, ND**

Likewise. No, I'm happy to be here. We had a great conversation but we'll recapture some of those main points for everybody.

### **Matthew Cook, M.D.**

Recapture the magic. So then tell me a little bit about your background. how you got into peptides and how you think about medicine.

### **Amber Krogsrud, BSc, ND**

Yeah, so I'm a naturopathic doctor by training and I really learned all the fundamental tenets of gut health and hormone health and bioidentical hormone therapy, and really built this foundation of medicine in school. But peptide therapy really came afterwards. I didn't learn anything about that in school. I mean, I learned about amino acids and I learned about proteins and biochemistry, but I didn't know about peptide therapy specifically. And so I found peptide therapy in my own health journey at a point in time where I was run down, burnt out, adrenal fatigued, hair thinning from med school. Also had some candida overgrowth, probably from stress and lots of factors. And so I found a lot of the peptides started using them on myself. I was early in my practice realized, wow, these are so transformational for how I'm feeling and started incorporating them with patients seeing really good results as well. So I use a lot of the peptides



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that help improve quality of sleep. So deep sleep. Also peptides that help to support immune function. And we know that high cortisol levels, especially like those being in medical school can suppress that optimized immune function. So I started using a lot of those peptides noticing transformation. My hair grew back, my skin improved, my sleep was deeper. My brain function. I was so much sharper that I had been in a while. So yeah, and then I got trained by A4M. Went through their training course, several other peptide training events. And yeah, it's been I'd say a huge focus of my practice is not only at looking at functional labs, so running stool panels, hormone labs, working with women on a weekly basis, you know, walking through their lab reports, but incorporating these peptide therapies when indicated in addition to everything else that were doing.

### **Matthew Cook, M.D.**

Okay, awesome. I'll take it. So then let's dive into the aesthetic stuff. And so you brought up hair and I think that's probably one of the top things that people think about. I thought I was like two minutes, a couple minutes late. I thought, oh, I'm gonna do an aesthetics interview. I better get my hair right.

### **Amber Krogsrud, BSc, ND**

Oh, it's okay. Yeah.

### **Matthew Cook, M.D.**

Tell me how you think about hair and what you're doing with peptides.

### **Amber Krogsrud, BSc, ND**

Yeah, well, you know, the last couple of years with COVID, I think one of the top Google search terms in 2020 was hair loss post-COVID. How to resolve that or remedy that. So there is a lot of men and women right now that are dealing with hair loss. Whether it be post-viral, high stress levels of the pandemic, other hormone imbalances, lots of medications could lead to that. So I think it's more of a issue maybe than maybe in our current day and age. And there's a lot of internal reasons why that happens and there's some aesthetic and external things that we can do to treat that. So peptides can help on both planes, as well as you know looking at other lifestyle factors. Dietary, nutrient depletions, iron levels. All of these different pieces that we're evaluating for for hair.



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## **Matthew Cook, M.D.**

Talk me through the COVID piece, 'cause we're also seeing the same thing, the hair loss. Talk to me about how you put that together in terms of the internal causes.

## **Amber Krogsrud, BSc, ND**

Yeah, well we know there's a paper actually that was published in the Journal of Biochemistry in 2000. And the main finding of that paper was that high levels of glucocorticoids or cortisol that's stress hormone will kill thymocytes or those cells in the thymus that regulate the immune system. And so we know that when we have poor thymus function, we have worse immune regulation, we have more cytokine production, we have more higher levels of inflammation, more frequent infections. We just don't respond quite as well on an immune level. And so I think that's definitely part of it. We know that there's actually receptors in the hair follicle for IGF-1. So when our growth hormone levels drop IGF-1 is a byproduct of growth hormones. So that could be a part of it, right? As we age, we tend to decrease in growth hormone level. That's a piece of it. But I think that the cortisol, the effect of cortisol is a huge piece in hair loss. Most people that have a stressful event will notice that hair loss about three months after is really where they start to see it. Three to six months is the maximum hair loss. And that just follows the hair growth cycles, right? So we have that anagen growth phase, the catagen, and the telogen, which is like that resting phase. The goal is to keep your hair in that growth phase for longer periods of time. But stress will really stop that growth phase and move you into more of a stasis. So yeah, I think the stress, the immune function that's compromised with a viral infection. I think those are the big players.

## **Matthew Cook, M.D.**

Yeah, and I've always felt... And we have to kind of dive into the science a little bit of that more, but then that stress that is generally to me in an autoimmune category. Almost any autoimmune, any stress that it involves an autoimmune. So then that means and so there's antibody going on. There's a whole bunch of things going on at an immune inflammatory process. When those things go sideways, everything else goes sideways. So your growth hormone levels are gonna go down and so then it may be just inflammation in the blood that's affecting but it may be autoimmunity, but then you'll see people that are and they'll come in and we've been seeing a lot of 'em after COVID that are, you know, come in. They say, "It's like, I'm shedding," you know, "and I'm pulling hair out hair is falling up." And so then let's say we got somebody in there they have maybe some autoimmune in their background and then they've



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got COVID and they had COVID and now they've got hair loss. What do you like to do? What are some or some treatments you like to do for that?

## **Amber Krogsrud, BSc, ND**

Yeah. So and I see a lot of autoimmune patients. So many of my women have autoimmune conditions. And I think about it from that model of the declining thymus gland, right? So working on that immune function there's a lot of nutrients that are critical to immune function. Things like zinc and selenium. And if there's gut issues we're not absorbing those that's really pillar one, right? We need to make sure that we have sort of these really critical nutrients for immune function. On the level of peptides I like to use some of those immune-supportive peptides. Things like Thymosin Alpha 1, Thymosin beta-4. And then there's a peptide called Thymulin, which sounds very similar and it has some effects on hair. We can use zinc Thymulin for hair. So yeah, we're really working on improving immune regulation again. There's no mistake in that at... So our thymus gland is optimized working, you know, optimally when we're young. Five, six, seven, eight-years-old. That decline starts to happen about age 15. When women are about 30, their immune function, their thymus function is substantially lowered. And there's no coincidence that we tend to see increased rise in autoimmune conditions, female cancers around that time because we just have poor immune regulations.

So yeah, I'm really working on recalibrating their immune health. Thymosin Alpha 1 is really powerful for me. Many women have multiple chemical sensitivity, they have food reactions. They have a lot of allergies to things, and that's really a sign of immune dysfunction, right? And so anything that we can do to improve that immune regulation. It's not about boosting the immune system per se, right? We don't wanna skyrocket an immune response but we want regulation, which is what's not happening in autoimmunity, right? Where self attacking self is autoimmunity. So Thymosin Alpha 1. A really powerful peptide for doing that. And again, our thymus gland produces these already, right? It makes Thymosin Alpha 1. It makes Thymosin beta. It makes these thymus peptides, which are really hormones right in the way that they act in the body. So we're just improving the production of those by giving these peptide therapies.

## **Matthew Cook, M.D.**

It's interesting. And so you can think of if somebody I've been using in this analogy for the last couple weeks. Somebody described autoimmunity or immune stress as like an immune system that's angry. It's like a little kid that's throwing a lot of punches, but none of those punches are



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actually landing. And so then in autoimmunity, in these cases of immune stress then, the things that regulate immune function often lead people to feel a lot better. And so then things like Thymosin Alpha 1. From a regulatory perspective, that's a little hard to get in the United States now but I still think that it's a profound adjunctive, helpful thing for people. And it's kind of interesting. I remember vividly probably one of my most... I remember it like it was yesterday, having a couple of friends that I knew who were women like right when I finished anesthesia residency, like that was like 30, 31. So this is like 20 years ago. And they basically had that constellation of kind of endometriosis, autoimmunity, inflammation, autoimmune low thyroid. And then it almost looked kind of swollen and then they would get swollen. And then all of a sudden come back to normal and, you know, now I would be like, we would probably see that person and we would do something fairly similar me and you now. So in that sense, you're ahead of me clinically but I remember and I thought, and basically, you know, I remember talking to them and realizing Western medicine definitely has nothing to offer.

## **Amber Krogsrud, BSc, ND**

They suppressed the immune system, if anything, right? Shut it down.

## **Matthew Cook, M.D.**

For that population. Obviously a big of Western medicine in many ways. So then you know that's a vulnerable crowd for sure. And in a way I'm just... And I think now we maybe see a lot of those people. We see those same people when they're in their 50s. We see those same people in their 70s and 80s. So the women's health is such a important thing. And I think that integrative approaches are really important. Maybe we'll kind of go into that a little bit. In terms of women's health, what are some of your highlights you like to think about when you see people?

## **Amber Krogsrud, BSc, ND**

Yeah. Well, of course, I'm running a full panel of labs and I'm looking at all those hormone levels, and I'm looking at medications that they're taking. I think inflammation is such a buzzword but also such a common phenomenon. Whether it be chronic pain, migraines. We know the cytokine model for depression. So when we have poor immune function, we can have this elevated production of cytokines, which could drive, you know, mood dysfunction as well. It's an immune-related issue. And so many women dealing with anxiety and depression, and how much is that related to their immune function? So yeah, I look at all those pieces. I'm looking at, you know, homocysteine levels in the blood, I'm looking at CRP or Sed rate. I'm looking at



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inflammatory levels as well as are they tanking in hormones? Are they flatlined in progesterone, low testosterone? And I think about hormones. Hormones and peptides they help tissue repair. So if women are tanking in those hormones, especially early in life in their 30s, late 30s, early 40s, and they're going through an early menopause, they're lacking the signal to repair their bone, their muscle, all of these tissues in their bodies. In their skin, you'll see faster skin aging. And so I really think about pillar one as regulating and supporting that hormone health. And oftentimes there's all these endocrine disruptors, lots of medications, birth control of course, will shut off that signaling completely for those hormones. So yeah, so I'm looking at all of those factors. And then, you know, I think about peptides as an adjunct to really slow that process of aging and by aging I mean that the repair is not happening as fast as the breakdown of the tissue, and that could be any tissue. Muscle, bone, skin tissue. And so women we don't wanna... Most women don't wanna look their age, right? So adding in some of those therapies but thinking about definitely baseline hormone production, what might be interfering with that? How can we improve upon that? And then as women get into menopause, I think bioidentical hormone therapy with these peptides is really the golden ticket for optimizing that process of aging.

## **Matthew Cook, M.D.**

What do you mean by bioidentical hormones?

## **Amber Krogsrud, BSc, ND**

Yeah. So there are synthetic hormones, right? Which is different than what our body makes. Bioidentical meaning it's very similar to the actual hormone that our is producing. And if you look at the research on this, there could be potentially higher risks with the synthetic forms of these hormones versus the bioidentical hormones. Very identical to what our body makes. And I even use that word synonymous in peptides, 'cause we're really helping the body to produce something that it already makes. Bioidentical in that sense. But yeah, there can be much lower risk. We know that cardiovascular disease, risk of neurocognitive decline in women is substantially improved with using these bioidentical hormones. Lots of women's still have this there's this stigma around bioidentical hormones and how they could be harmful even. And there is a lot of research on how it can actually improve quality of life and stave off some of these massive killers of women.



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## **Matthew Cook, M.D.**

So then basically on the bioidentical hormone front, on the good side, good for your bones, good for your brain, good for your heart. Probably good for connective tissue and healing. And so then there's the managing the risk of cancer, you know, for some people. But what are your thoughts on that?

## **Amber Krogsrud, BSc, ND**

Yeah. Yeah, it's definitely a conversation to have. And a lot of my women it's usually an issue of poor liver detoxification. There is a genetic component obviously that we can evaluate for before utilizing bioidentical hormones. But yeah, it's really improving that liver detox of estrogen and looking at those three different types of estrogen, E1, E2, E3. We really don't want high levels of E1. That's really the one that form of estrogen that's more linked with some of those estrogen-related cancers in women like breast cancer. So yeah, so improving liver detox. I like to utilize something called glutathione, which I know you utilize a lot in practice. That is like an insurance policy for women in protecting against any DNA damage, any downstream effects of estrogen in the body, as well as think about DIM and milk thistle. Different things to help support liver detox of estrogen.

## **Matthew Cook, M.D.**

Yeah. So that's a good one. Basically there's this... I like the old movies. I think there's a movie called "The Good, the Bad, and the Ugly." And so then there was this idea that estrogen can get broken down into a kind of a good, maybe a medium-good, and then a form that's more pro-cancer. And so then some of the things you mentioned, like the DIM. There are supplements that will drive it more towards the good. The more that we can balance how we break down and we do our metabolism, like in the liver, which, you know, I don't think I understood that one either going back to when I was in my 30s either. We didn't understand that and interestingly, you know, everything that we did was actually relatively toxic to the liver too, like anesthesia. But so then we're thinking about on the good side of hormone replacement, it's all of these benefits on the worry side then you worry about some people may just genetically have a higher risk, you know, of cancer but then you can do things like a 24-hour urine. You can look at the breakdown of those and so see where you are as a functional medicine. And so then all of a sudden start to do a little bit of testing, look under the hood and say, "Oh, okay, let's look. "We can see where our biochemical pathways are "and we can begin to influence that "and drive us towards a more healthy state." And so then that tells you that suddenly hormone replacement is not necessarily



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black and white and then somebody can see somebody like you and you're gonna walk them through that and then that out and kind of design a program and then continue to track basically and keep them optimized.

### **Amber Krogsrud, BSc, ND**

Absolutely, yeah. I run the Dutch test, the urine test, and I look at all those levels of estrogen, how they break down and that is powerful information that I don't think we were utilizing in medicine 15 or 20 years ago. So it's probably not you, it's probably just that we've developed that level of detail in terms of our testing and knowledge now.

### **Matthew Cook, M.D.**

Right. Well as an anesthesiologist at a surgery center, I definitely didn't have that. But tell us about the Dutch test. That's a good one. 'Cause then that would be a test that would be if somebody knows how to interpret it, that's gonna be useful.

### **Amber Krogsrud, BSc, ND**

Yeah. So the Dutch test, it could be used in men or women, but I run that test in a lot of women and it's just a urine test. So for women who are very needle-phobic or men as well, you can run that test, but it gives you, I think, a lot more in-depth information than even a blood test can. And oftentimes I'll run a blood test parallel to that. So I'm seeing those blood levels plus the Dutch test. And that can be very, very helpful to have those as well. So yeah, it'll look at adrenal function. It'll look at all of those hormones. So DHEA, estrogen, estradiol. All those forms of estrogen, estrone. And then it'll look at testosterone breakdown of progesterone and it just walks us through essentially, how is the liver breaking these down? It talks about COMT and methylation pathways, which for many women they can have issues with and notice changes in mood. So a lot of more lower mood, anxiety, depression associated with poor methylation. So we can look at all these different factors. It has a mini organic acid panel. So we can look at some of those factors as well. And, you know, just in one test, it gives us a lot of information, clinical decision-making information of what's gonna be most beneficial for this woman at this point in time.

### **Matthew Cook, M.D.**

Awesome. And so then medicine's always an evolution. And so then as you think about hormone replacement, I would say 10 years ago, even five years ago, that if somebody said bioidentical



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hormone replacement or hormone replacement in general, we were basically just talking about the sex hormones, like testosterone and estrogen, and progesterone. And now for almost everybody that we see who does hormone replacement, a lot of those people like to do something to help their growth hormone but that's not actually taking growth hormone. It's something that tells their brain to make growth hormone. And I think you're probably a fan of that as well. What your approach to that? How do you think about that? Tell us how you incorporate that as part of hormone replacement.

## **Amber Krogsrud, BSc, ND**

Yeah, I think that's a really forgotten aspect of hormone replacement now. I think, you know, you and I are very in the loop and utilizing this in our practice, but it's not commonly one that's thought of by patients or practitioners for the most part. And so yeah, growth hormone. We know that those levels diminish. They're about half of what you'd be producing at age 60 as you would in your 20s and 30s, right? So you have substantially high levels in your 20s and that's what, you know, makes your hair grow thick. It makes your skin look beautiful. You can stay up half the night and feel fine the next day. That's what's responsible for that is that repair hormone called growth hormone. And so we also know that growth hormone is really pivotal for mood. So it's involved in PTSD. We often find low levels of growth hormone in PTSD, interference in sleep. And so I think adding in some form of peptide to support growth hormone is one of the most valuable additions. And of course there's some people that are not... There's definitely some contraindications. Pregnancy and breastfeeding. We don't give it to certain people but I think it can be really valuable when added in a protocol for somebody who's looking to age well, feel better. The biggest thing with these peptides that help growth-hormone-releasing peptide, growth-hormone-releasing hormone. I like the combination. There's CJC Ipamorelin, there's Sermorelin. There's different ones that are available or on the market but utilizing some of these can improve that deep-wave sleep, which when you improve sleep right you improve all these other metrics. Brain function, cellular repair, muscle repair, bone health can be better because we're just getting that optimized cellular repair at night. So yeah, those are transformational for me as well in my own health journey.

## **Matthew Cook, M.D.**

The CJC Ipamorelin I also found to be helpful for sleep. And so some people will like to take that at night. Some people will do it twice a day. And so then they'll do it in the morning maybe before a workout and then also at night. And so then we've definitely seen that it can be a



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powerful adjunct for sleep. And a lot of people will take it long-term. Five days on, two days off. And so then that was a good one. There's a small percentage of people that can have kind of a flushing type of symptoms from it. And I generally notice that's in people with autoimmune and immune type of problems. And so a lot of times if we resolve those things first, and so if I have patients with a lot going on on the immune side, usually I'll delay starting CJC.

### **Amber Krogsrud, BSc, ND**

Yeah. Yeah, and I, you know, would do a very similar thing where I'd work on immune function before adding in more of those repair peptides like CJC Ipamorelin combo.

### **Matthew Cook, M.D.**

This is thematically an interesting one when you think about sequencing on all of this stuff. And so then, you know, we're talking about the hair stuff. And so then even though there are peptides that are great for hair, a lot of times if people are losing hair, I may think about immune stuff before I think about doing good things to the hair. Maybe we'll do 'em at the same time but we're trying to go upstream and find the cause. And so then often if somebody has fatigue, we'll look at immune stuff before we try to do things that might be stimulating. For example, mitochondrial-stimulating things. So it's kind of just interesting for people who are hearing to recognize that in this whole palette that we have to paint with the sequencing of which ones you start with and then cycle on and off is probably gonna be helpful.

### **Amber Krogsrud, BSc, ND**

Very true. I couldn't agree more with that, yeah. So many things boil back down to that immune function and then the connection between the gut and the immune system. That gut immune and looking at what else could be driving the hair loss? It's often an inside-out issue, whether it's hair or skin. If it's showing up aesthetically or externally where we're thinning hair, we're having faster skin aging or rashes or anything showing up on the skin, it's usually something much deeper and often related to that immune function. So completely agree starting--

### **Matthew Cook, M.D.**

No, but going back to the hair thing. In terms of topicals, and there's gonna be a lot in the area of... Let's say we said, "Oh, okay, "we're gonna get that dialed in. "We're we're gonna resolve some "of our autoimmune stuff." And maybe that's gonna be through functional medicine and some naturopathic principles, which we're gonna be deeply supportive of. Let's say that we might take



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some immune peptides. And then we said, "Hey, I need to put something, "I wanna put something topically on." What am I gonna put on? Talk me through that.

## **Amber Krogsrud, BSc, ND**

Yeah. Yeah, so we're just at A4M and went through this amazing discussion and also demonstration of injecting many of these peptides into the scalp. Yeah, you can, you know, inject nano fat and you can inject these peptides. BPC and Thymosin beta, and GHK-Cu. But you can also get blends that are available over the counter that you can apply topically that don't really require that numbing and that whole sort of procedural process of injection of those peptides. And so the one that I think is most simple to use from home and a lot of women can benefit from is that those copper peptides. And so that's the GHK-Cu. So a tri-peptide connected to copper and we know copper is really important for collagen synthesis, connective tissue. And one of the things that I think the copper peptides excel at is resolving that issue. As we age, we tend to have less blood flow to the capillaries, which means less blood flow to the hair follicle that's in the dermis, right? And so if we can improve that, it's the same root cause of erectile dysfunction, right? We're just getting less blood flow in the capillary. So copper peptides are really phenomenal at helping with angiogenesis or blood flow to the hair follicle again.

And so we're bringing new nutrients and we're able to really feed the scalp with proper blood flow. So that's one of the amazing things. We can improve that peripheral circulation in the scalp but we've found the copper peptides when we're researching wound healing. So for women who have scars, noticing faster aging, applying that the copper peptides topically, I use it as a night cream or if I'm ever doing any sort of microneedling or laser therapy or anything, you can actually apply those for better collagen synthesis and production. And it helps with elastin. It helps with collagen. It helps with the glycosaminoglycans, which are in the deep layers of skin. And so that one is really phenomenal. And again, we know that this level will decrease with age. So when we're at age 20, our blood serum level of copper peptides is around 200 nanograms per milliliter. And by age 60, that'll drop to about 80 nanograms per milliliter. So less than half of what we have. So it's really beneficial to add in some of that support and to help repair tissue, hair, and skin.

## **Matthew Cook, M.D.**

Okay. So then that one was a good one. And I'm just gonna dive into that a little deeper. So we can take GHK copper and if there's copper in a peptide you are gonna know when you look at it



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'cause it's gonna be a brilliant kind of Prussian blue color. Kinda like the dream bigger behind you. And so then you can inject that one into the scalp and we've seen it to be helpful for hair stuff, and then we can combine it with PRP or sequence it with PRP or other, you know, growth-factor type of injections that we do in the hair. But then you said another one good one, which is just to unpack it a little bit tell us about microneedling. So that's another way to get the peptides and interestingly it's good for the face as well as the hair. But tell us about microneedling a little bit.

### **Amber Krogsrud, BSc, ND**

Yeah, I love microneedling. Essentially what we're doing is creating a little bit of microtrauma, whether that be to the scalp or to the skin. And so when we damage that tissue and then we supply something topically to help it repair, we end up getting a better effect. Versus if we just applied something topically without doing the microtrauma. Essentially the microneedling is usually I have 36 needles in the head of that microneedling pen. And so it's just a really fast rotating head that will damage that tissue. Oftentimes you do want some numbing on the scalp or the face because it could be painful depending on how the depth that you're going. But yeah, that combination can be really phenomenal, I think for hair and skin.

### **Matthew Cook, M.D.**

And then that's nice because basically it's just like a little thing that creates these little holes and then you're rubbing the peptide on and we've been doing kinda microneedling forever. And one thing that I find is is that if you use peptides, the downtime is much less. And so people seem to recover a lot faster. Have you noticed that?

### **Amber Krogsrud, BSc, ND**

I've definitely noticed that. I think that, you know, whenever you do microneedling, you really need a suite of products or certain things that you're applying after to enhance that repair process. Without the repair peptides or whatever you're using, I use hyaluronic acid and then the copper peptides sometimes Argireline, Leuphasyl, which is those Botox-like peptides as well. It can be really helpful for repair. Yeah, faster skin repair.

### **Matthew Cook, M.D.**

And so then we've got those, but then we could just put the GHK copper right on the face or as a topical serum or in the hair.



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## **Amber Krogsrud, BSc, ND**

Correct.

## **Matthew Cook, M.D.**

How has your experience been with that?

## **Amber Krogsrud, BSc, ND**

Yeah, I like to combine that with those other two peptides to create this there's a blend it's called the trio and it has I call 'em Botox-like peptides. So the Leuphasyl, the Argireline, and the GHK-Cu all in one. And so, yeah, that can be a really good night cream. It can be something that you put on a scar, especially like a post-surgery scar. I love having women apply that if they don't wanna have such dramatic scarring. It can really help with wound healing and proper collagen cross-linking to prevent scarring.

## **Matthew Cook, M.D.**

Awesome. What have been your highest areas of success with acne scarring?

## **Amber Krogsrud, BSc, ND**

Yeah, the microneedling is really I think the way to go with some of those peptides topically. I think that's a great way. I'm trying to think if there's anything else that I've used aesthetically for that. Yeah. For rosacea I'll tend to use like ECGC in a combination of some of those peptides, like BPC. You can get that in cream now, and that's super antiinflammatory. That could be a good one.

## **Matthew Cook, M.D.**

I've been a big fan of BPC for topical. And then also even for little problems. Barb, I live with Barb. And so then Barb has probably had about 15 or 20 times when she's kind of burned herself cooking. And so then it became a joke because it would be like, "Oh, we needed another BPC miracle." And so then I would like make, you know... I made creams and did injectables and topicals and BPC and TB4-fragment and at times with metoprolol. So kind of all fairly helpful for burns. But BPC topical has been quite impressive for me. So then all of a sudden here you got a peptide that you could take it orally. It's helpful for your gut. You can put it topically and it's helpful for your face or burns. It's kinda interesting.



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**Amber Krogsrud, BSc, ND**

Yeah. And then you can inject it for more of those musculoskeletal.

**Matthew Cook, M.D.**

Right, right.

**Amber Krogsrud, BSc, ND**

Process. So that one's, yeah.

**Matthew Cook, M.D.**

And BPC... And so then I'll just tell you I think I'm kind of currently kind of in this journey of my idea is is that people are gonna start to do Botox less and start to kind of intersperse like every other time to do the peptides. And I think that there's gonna... You start to build. We went to that great lecture at A4M and I remember somebody raised their hand and then they said, "Oh, who is this good for?" And then she says, "Well, "that's good for people that have had too much filler "and too much Botox and their skin's getting unhealthy. "And so then we have to bring it back." But then if that's the case, what if we start to intersperse some things to bring that skin back and keep it super healthy and looking good at the same time?

**Amber Krogsrud, BSc, ND**

Yeah, and you're a living example of that. I mean, you're face looks so much younger than your actual age.

**Matthew Cook, M.D.**

Well, I mean, as a 70-year-old, I mean, it's kinda..

**Amber Krogsrud, BSc, ND**

Yeah.

**Matthew Cook, M.D.**

It is kinda funny. It's interesting. I've noticed, like it was interesting. I was like five years ago remember I would be like, oh there would be always a little hair in the bottom of the shower. I thought I was just like in the shower the other day, I was like, I never have any hair in the shower



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anymore. And so then it's kind of interesting as you start to get healthier. I don't really do too much as for aesthetics. And yet I notice I keep feeling and looking better or younger, you know?

**Amber Krogsrud, BSc, ND**

It's all the inside out things though, too, right? Which is really the goal of what we do is when your system and you're repairing, you have enough growth hormone on board, your thymus is working, your immune function is more optimized, that's a natural byproduct.

**Matthew Cook, M.D.**

Right and so then that's why... Really, I love that attitude because it's kind of like if I was going to pick somebody to come see as a doctor, that's exactly what I would want 'em to do, you know? So good job.

**Amber Krogsrud, BSc, ND**

Yeah. Well yeah, we both share that. And I think that it's a counter-cultural ideal in a world where, you know, there's a pill for every ill and whenever it's cosmetic we wanna fix it immediately and not really work through the underlying reasons why we're breaking down tissue faster or why we're aging faster. But the secret is the inside-out approach. And I think peptides, as well as, a lot of the work that you and I do and IVs and glutathione, and a lot of these nutrients and dietary therapies, and supplements these are really where that change happens.

**Matthew Cook, M.D.**

Now you mentioned the term the Botox-like peptides. Take me through the little bit of your thoughts on that.

**Amber Krogsrud, BSc, ND**

Sure, yeah. So again, that's just that combination of GHK-Cu. So those copper peptides, the Argireline and the Leuphasyl, and that's just the combination of those three are called those Botox-like peptides. And I created a video on YouTube about those where it just talks more in-depth about what they do. There's some research on how they can decrease wrinkles in women. They've shown pretty extraordinary results. Decrease in like 30% of wrinkles just by once-a-day use. So the Argireline is a six-amino-acid-peptide. The GHK-Cu is the three amino acids and the copper and then the Leuphasyl as well. And so really just used topically. Not so much for hair but really specific for the anti-wrinkling effect 'cause it's really what Botox does,



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right? It paralyzes the muscle. The Leuphasyl actually has this aspect to it where it works on the calcium channel and it can prevent acetylcholine release, which is preventing the muscle contraction that leads to those smile lines around the eyes and around the face. So there is a little bit of a effect there on acetylcholine in the Leuphasyl. And that's why we add it with those other three peptides combined. There's, you know, synergistic effect. Yeah.

**Matthew Cook, M.D.**

Good one. Do you ever use GHK without copper?

**Amber Krogsrud, BSc, ND**

I have, yeah. Yeah, I'm familiar with that. Yeah.

**Matthew Cook, M.D.**

So then that one the GHK with copper for some key people can burn. It sting a little bit with injection. And so sometimes we'll do like a little bit of a 50/50 between the two of those. However, I think for aesthetics, the GHK with the copper is the best.

**Amber Krogsrud, BSc, ND**

Is ideal, yeah. The other consideration that I have some people ask me about too is if I'm injecting the GHK-Cu, those copper peptides, is there gonna be any issue with that zinc-copper ratio? So the ideal ratio is an eight-to-one ratio. More zinc than copper. And so I haven't really seen an issue, but you know you have copper toxicity when your nails start to turn blue. There's some other symptoms of that. It's never really been an issue, but I do have women take zinc anyway because zinc tends to be really phenomenal at supporting thymus function, which is another goal for us is supporting immune regulation and helping the thymus gland. So it doesn't hurt.

**Matthew Cook, M.D.**

And then also there's the peptide zinc Thymulin.

**Amber Krogsrud, BSc, ND**

Yes. Yeah, and that one is really good for hair growth as well. So yeah, the zinc is really pivotal for Thymulin. So you don't wanna really separate them. You wanna have the zinc on board or have sufficient levels of zinc when you use that. But the goal of that one really is to improve the anagen phase, that growth phase of hair, just like many of the other peptides. So we know the



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copper peptides help with the blood flow to the hair follicle, the PTD-DBM, which we haven't mentioned yet. That's another topical hair peptide. It helps with putting hair back in that anagen growth phase. We can be in that not an anagen growth phase when we're highly stressed we can go into that more dormant phase of hair growth.

**Matthew Cook, M.D.**

How will you dose that? How often will you have people do the PTD-DBM?

**Amber Krogsrud, BSc, ND**

Yeah, there's two droppers that you can get. It's like two bottles that have two peptides in each. The one has the PTD-DBM with valproic acid, I believe. And then the other one has the zinc Thymulin and something called methyl vanillate. And so I'll have them do those two droppers. Do the drops on the scalp after they get outta the shower or before bed just kind of massage it into the scalp. Ideally you're doing some microneedling to cause some trauma that's gonna be your best result, but I've even seen really good results. I have several men. 40s, late-40s and 50s noticing hair thinning and this is one of the things that we're adding in among other treatments internal sort of therapies and yeah, I notice thicker hair growth over time. More of those baby hairs growing in, you know? So yeah, it can be really helpful to utilize those topically.

**Matthew Cook, M.D.**

Yeah, I would totally agree. And then I echo everything that you said around the zinc-copper sort of conversation. And then, you know, the zinc I think is part of the inside-out kinda wellness. And so then we we'll do testing for zinc and we're doing testing for coppers sort tracking that and we've never... We're always paying attention to that and we, like you, are always pushing a little bit of the zinc conversation. And so then I've never seen that. However, in talking to other people, I've been hearing the people who take the GHK copper for an extended period of time without any balancing can run into some trouble with that.

**Amber Krogsrud, BSc, ND**

Yeah. I could see that, you know. Yeah, and I did a test on myself. I've been taking 30 milligrams of zinc for months on end. A liquid form of very, you know, bioavailable form. And I wasn't even up to that therapeutic level. So it should be above 80 nanograms per milliliter. And even with that dose. So, you know, and if you're sick, your body utilizes zinc. Zinc can help with preventing viral replication. So I think about having adequate zinc levels not only for immune function, but



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also for hair growth. All of these other things. So yeah, zinc's a pivotal one and I mean, I'm not even up to that therapeutic level after a couple months of taking a pretty good dose.

### **Matthew Cook, M.D.**

Right so then that one's so good because then you realize, oh okay. Suddenly it makes quite a bit of sense to kind think about coming in and check your... So I think for where we are in the world right now, maybe it'll be really good idea to check your vitamin D because we know low vitamin D you're more likely to have a bad experience with COVID, okay? If you have low zinc, you're probably also more likely 'cause what does everybody tell you? The first thing that you hear with these big viral infections is, "Oh, zinc can help immune function." And then the great thing is, is if you have some numbers, then that gives you a little something to track towards and come back and follow up on and it takes three or four months or six months to sort of bring things into balance. And so that's a good one. That's an interesting one also.

### **Amber Krogsrud, BSc, ND**

Yeah. Yeah, and the pivotal thing too is when we're giving somebody's zinc to ensure that they're actually absorbing it. So gut health and making sure that, you know, their bowels are moving too quickly or they're not really absorbing the foods that have zinc or the nutrients that we're giving them. I think that's another piece too. Especially with those fat-soluble vitamins like vitamin D. I found that sometimes I can give that to people on high doses and their gallbladder bio-function and ability to absorb fat-soluble vitamins is so diminished because of their gut being so unhealthy. Gallbladder issues. So yeah, really looking at other forms. Sometimes I'll do the injectable vitamin D. I have had other ways to get that to them. If you're giving that or you're taking that consistently and it's still low on your labs, that's something to consider.

### **Matthew Cook, M.D.**

We always said in functional medicine... We talk about the gut-brain axis because if you have inflammation in your intestines, then toxicity leaks out from the intestines into the bloodstream and it can affect the brain. But we could probably say there's a gut-hair axis also.

### **Amber Krogsrud, BSc, ND**

There is. Very true.



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**Matthew Cook, M.D.**

Because that's another thing. And so then when you hear somebody comes in and they're losing a lot of hair, if it's not any of the things that we've been discussing up until now, one thing is to begin to think, you know, if you think gut and often a gastrointestinal inflammation is actually a cause of autoimmune stuff in the first place.

**Amber Krogsrud, BSc, ND**

Yeah, we need to coin that gut-hair axis.

**Matthew Cook, M.D.**

The gut-hair. Okay, we can do that. GHA. Well it's super delightful to talk to you and kind of go through this stuff. And I think this is a nice little package of a whole bunch of interesting things to think about and where can people find you, Dr. Amber?

**Amber Krogsrud, BSc, ND**

Yeah, absolutely. So a couple places. They can find me on my website, which is just DrAmbernd.com. I'm also fairly active on Instagram, which is just gonna be doctor spelled out. D-O-C-T-O-R Amber ND or YouTube. I'm the peptide doc. So I'm creating a lot more videos, content about peptides, the copper peptides, BPC. I have so many people who have commented on those videos about their own personal experience asking questions. So it's kind of a forum of exchange to talk about peptides and what's happening and new developments in that space. So yeah, so they can find me at all those places.

**Matthew Cook, M.D.**

Okay, awesome. Well I think if you go to any of those places and see Amber, you're gonna end up looking better than you already do. So thanks so much for comin' on the show. It's delightful to talk to you and I look forward to working with you.

**Amber Krogsrud, BSc, ND**

Absolutely. Thanks Dr. Matt. Appreciate it. This was great.