

Facial Aesthetics: Collagen and Skin Rejuvenation

The following transcript has been lightly edited for clarity. Elite Learning does not warrant the accuracy or totality of audio transcriptions provided by an independent contractor resulting from inaudible passages or transcription errors. An occasional transcription error may occur.

Guest: Kathleen Wolz, DNP, NP

Dr. WOLZ is an advanced practice nurse who has had the opportunity to have served in multiple fields within the nursing profession. She has been a tenured college professor in an Associate Degree Nursing Program, a hospital educator, a critical care nurse, and a leader in online and virtual reality education. She has served as a volunteer and board member of the local free and charitable medical clinic for over 20 years, as well as participating in three medical missions. Currently Dr. Wolz is co-owner of two primary/urgent care clinics and a comprehensive medical spa. She is fervent about providing access to medical care for those with limited access and mentoring and educating those entering or new to the nursing profession.

Host: Candace Pierce: DNP, MSN, RN, CNE

Dr. Candace Pierce is a nurse leader committed to ensuring nurses are well prepared and offered abundant opportunities and resources to enhance their skills acquisition and confidence at the bedside. With 15 years in nursing, she has worked at the bedside, in management, and in nursing education. She has demonstrated expertise and scholarship in innovation and design thinking in healthcare and education, and collaborative efforts within and outside of healthcare. Scholarship endeavors include funded grants, publications, and presentations. As a leader, Dr. PIERCE: strives to empower others to create and deploy ideas and embrace their professional roles as leaders, change agents, and problem solvers. In her position as the Sr. Course Development Manager for Elite, she works as a project engineer with subject matter experts to develop evidence-based best practices in continuing education for nurses and other healthcare professionals.

Episode 1: Facial Aesthetics: Collagen and Skin Rejuvenation

Transcript

Candace Pierce: Hello, I'm Dr. Candace Pierce with Elite Learning by Colibri Healthcare, and you are listening to our Elite Learning podcast where we share the most up-to-date education for healthcare professionals. Welcome to our podcast series on facial aesthetics, where we're going to be talking specifically about collagen and skin rejuvenation. Now, according to the American Society of Plastic Surgeons, each year over

70% of patients who are seeking aesthetic treatments report concerns about skin aging. That's going to include wrinkles and loss of elasticity. And over the last few years, there's really been an emphasis on collagen-focused treatments, not just for patients, but also for healthcare providers who are stepping into this field. We're seeing more registered nurses, nurse practitioners, and physician assistants, all moving towards this area of healthcare. Now I personally know a few nurses who have trained in this area as injectors and have either moved into this area full time or more as a secondary role for extra income. So, this is definitely a smaller area for healthcare, but it's a growing area. Now in this first episode, we're going to look at the science behind collagen, its role in maintaining skin health and how it's changing with aging. And our goal is really to provide you with a comprehensive understanding of collagen to better support patients who are seeking skin rejuvenation treatments. And joining us for this discussion is Kathleen Wolz, a nurse practitioner who specializes in this area. Kathleen, thank you for joining me.

Kathleen Wolz: Thank you, Candace. I look forward to this.

PIERCE: Yes, now this is what, our third time, our third attempt at trying to record this podcast? So, I'm really looking forward to chatting with you today. Yes, we've had some technical issues, so hopefully we get through this one today. But I just want to say that I just love your joy and passion for this area. It's so apparent, and I'm so excited to learn from you today and to really figure out this area of healthcare.

WOLZ: Well, thank you. I'm excited to bring up the topic. I think aesthetics are growing, as you said, and it is growing in regeneration and rejuvenation, which collagen fits right into.

PIERCE: Yes. So, to start off, what is collagen and why is it essential for skin health?

WOLZ: So, collagen is a protein that plays a key role in the structure and strength of the body. So, we have collagen everywhere. We have it in our skin, our muscles, bones, tendons, ligaments, and connective tissues, and what it acts as is kind of the glue. So, it holds everything together, provides support, provides elasticity, and provides firmness. So, in the area of the skin, it helps keep the skin firm, so it prevents those fine lines and wrinkles. And unfortunately, as we age, our collagen production also decreases. And so, that leads to sagging skin as well as joint discomfort. So, it's really about the structure and the firmness of collagen that kind of supports the dermis in the face, supports other structures, and provides elasticity so we can move easily, maintain joint flexibility, and movement of the face—all of those things that, you know, as we age, are always affected by collagen.

PIERCE: Yes. Now, how does collagen production change as we age? And I guess maybe the question is why does it change as well?

WOLZ: For a couple of reasons. So, collagen loss is about 1% starting in your mid-twenties, but it becomes very evident by the age of 40. So, like in your twenties, you're losing collagen, but you're not really noticing that you're losing collagen. I mean, go back and

look at a baby. You know, they have those chubby cheeks, they have that very round face. They have a lot of collagen in their bodies, and they're very flexible, so their skin heals and changes very easily. And then as you start to age, you'll notice that if you sleep on the side of your face, now you've got a dent. And that dent may last for a couple of hours versus popping up pretty quickly. You may notice that your knees don't bend as well, or you're stiffer in your movements. So, by the age of 40 to 50, the loss is much more pronounced. Your skin starts to get drier, and then by your 60s, you definitely have significant loss. Your skin is thinner, it's less elastic, and it's more fragile. And we all know that in healthcare, when you take care of an elderly person, just moving them in bed or friction on a sheet, you start to see these weird bruises and skin tears. There are a lot of things that affect it. There are also some external things too, like diet. So, there are things we can do and things we can't control. Diet is a big part of it. You know, really, collagen is a protein. You should be consuming one gram of protein for every pound you weigh, and none of us are even close to that.

PIERCE: Okay, wait, wait, I have a clarifying question on that. For every pound I weigh or for every pound I want to weigh.

WOLZ: Yes, it's doing for what you weigh and then you'll lose the weight to get where you're supposed to. But it just shows you how important protein is. And we're very bad with protein. I mean, all of us as a society. Things like genetics play a role. You know, if you're from a certain ethnicity that wrinkles very easily, very fair skin, you're going to wrinkle. You know, if your parents had wrinkled skin, you're going to be going the same way. Sun exposure, you know, for some of us who are a little bit older than that, you know, used the baby oil and the copper tone and all that, you know, it was tanned. People that went through tanning beds. Yeah, I always say my one claim to fame is I've never ever used a tanning bed. It's like my number one claim to fame. No, for whatever reason, I just don't think it was on my horizon, but it's really tanning beds and even one tanning bed episode is enough to have damaged your skin. So tanning beds are huge. Lifestyle choices. Do you smoke? Do you use alcohol? You know, do you exercise? Sedentary lifestyle is kind of equivalent to smoking now. So, obesity, all of those things. And then of course, overall health. How healthy are you? And there's a lot of fun challenges on Instagram and TikTok about identifying what your overall health is. And I encourage people to try it. Like trying to put your shoes and socks on without leaning on anything and trying to get up from a sitting position without using your hands or knees for extra support. They're just kind of cool things we should all do to kind of figure out where our overall health is.

PIERCE: Absolutely. That's so interesting to think about. You know, when I was growing up, my mom was one of those that loved the tanning bed. So, as a child, I would go put my feet in, you know, while she was in the tanning bed, and I had to go with her. So, I'd put my feet in the tanning bed. So yes, I've been around tanning beds when I was young, not even thinking about what happens to my skin. It makes me sad.

WOLZ: Well, and you know, as a side note, being a health practitioner, because you put your feet in, you need to check your feet all the time for melanoma. Even though it's a weird spot for melanoma to occur, it can occur. So, you need to check your feet between the toes, the bottom of your feet, under your nails. You always get that health provider that comes through all this. You know, take that opportunity for education.

PIERCE: Yeah, and I'm sure there's a lot of people my age today whose parents know, who tagged along with their mom and, you know, probably did the same thing because that's what they did back then. But now I know earlier you mentioned that collagen. Yes, that's true, especially when you don't live close to a lake or a beach or, you know, that's what we did. So, I know that you talked about collagen being in other areas of our body and whether we are losing it as much in those other areas of our body like our joints and our connective tissue as we are in our skin?

WOLZ: We are, but it's fastest in our skin though. So, which would make sense because the skin is thinner, it's more exposed to things. You know, you're not really exposing a joint or a bone to sun and all those kinds of things. So, it makes perfect sense. Most people, you can see this in your face, your driving side, you'll always have more wrinkles underneath your eye on your driving side when you smile or squint. And that's because unless you're wearing sunscreen every single day and reapplying it, that sun is still, you're still getting the UV rays through the window. But so, you will lose bone and again, you lose it in the bone and that's very obvious when we do bone density scans starting at the age of 65. The bones become more fragile. We all know as you age, your risk of developing a fracture is much higher. And again, that's because it's related to the loss in the bones. Joints and collagen for our cartilage formation, you start to see people start to have a lot of joint issues, knee replacements, osteoarthritis, joint pain, stiffness. Again, it's an aging thing as well as lifestyle choices, and tendons and ligaments lose ability of strength and stretch. Your joints become unstable, so then you become at higher risk of having an injury. So, if you fall, you're going to get hurt. Decreased collagen equals decreased muscle mass and strength. So again, if you're not doing something, strength training, some sort of an exercise to build your muscle mass, normal aging and the breakdown of the protein is going to take care of it. Blood vessels become weaker. So, you get more bruising, more varicose veins, potential for more cardiovascular events like heart attack, stroke, et cetera. Your eyes go through it, and decreased collagen in your eyes puts you at a higher risk of dry eye and cataracts and vision problems. So, it really is every part of your body. The nice thing though is the loss does not occur at the same rate for everything. We talked about the skin is absolutely the most visible and immediate impact. And that's also secondary to environmental things whereas joints, tendons, and muscles are going to be a gradual decline. It's not visual. It's more like a discomfort. I mean, when you talk about people that have joint issues, it always starts off the same. You know, they start with a little knee pain, then the stiffness, then the inability to go upstairs, and then it just kind of gradually increases, increases, and increases, until they get to the point that they have significantly lost function. And then decreased estrogen. You know, HRT and estrogen is a culprit too. It affects your collagen production. So, and again, it's all of those things that we talked about, the thinning of the skin, the loss of elasticity in the skin, so

more sagging, more wrinkles, you know, we all get those jowls. Reduced wound healing. We don't even think about that, but it just takes longer for our skin and our body to heal without that collagen. Hydration. You know, we always, we forget about hydration and it's such an aging symptom because as you age your face becomes very dull. It also then opens the door to eczema, dry skin, psoriasis, all of those issues, which are common in the elderly. And we never think that it's really just related to a decrease in collagen.

PIERCE: I have a question for you, right? You are saying all of these things that are so important, things that we should be talking to our patients about, even if we're not in the facial aesthetics world. Why are we not talking about this? Why is this not, why is this not part of identifying, hey, we need to do something here because it helps with wound healing, it helps with our bones, it helps with our joints. Why do we not hear this more?

WOLZ: Well, I think part of the problem is medicine is in the industry of illness fixing. You know, we correct illnesses. We don't do a lot of preventative medicine. We just haven't gotten there. But our whole healthcare system does a lot of preventative medicine. I mean, we have drugs that fix disease. We don't have a lot of drugs that help you with preventative. And we could do a whole thing on obesity medicines and how, you know, they're all fighting it because, you know, the number one cause of illness is obesity. It's way up there. So, I think we are not so into prevention. We also know the healthcare system is broken. You have a few minutes with a patient and really, you're just trying to figure out if they are coughing, have a cold, you know, just trying to get them diagnosed. If they have high blood pressure, whatever. We really need to focus more on prevention, but our insurance model, our healthcare model, it's really not encouraging that. They don't pay extra for that. They pay you 15 minutes for an office visit, and you need to get everything done during that. And if you try to say, we did a psychological profile or we did some counseling, they don't reimburse for that. Do you know what I mean? So, it really is a, it's much more complicated. I think things like the aesthetics industry; we can spend the time. And I think that's great. Concierge Medicine will constantly focus on preventative. My dad's 92 years old, lives in Florida, has a concierge doctor, and he is constantly focusing on preventative. So, but again, that may not be an option for everybody. Exactly, exactly.

PIERCE: You have to pay so much more for that because we have some here in my area and most people can't afford that.

WOLZ: Exactly. And Medicare is not going to pay for it. So, you know, again, we're back into the cycle of being a disease-treating medical system and we don't really prioritize prevention. I think we're starting to get a little bit more. But, you know, what I always tell people is looking at your peer group — your peer group, friends, family, whatever — how many of them are exercising three to four times a week? How many of them are eating well? How many are drinking minimal amounts of alcohol? How many are using sunscreen daily? I mean, there are a ton of preventative things that we all know. So, I think it's just that we have to keep singing it from the mountaintops and hopefully, they'll get it.

PIERCE: So, going back to collagen, are there different types of collagen? You know, because we know it's in all these areas of our body. Are there different types or just one type? Okay.

WOLZ: There are, there are. There are actually like five different types of collagen. So, we go anywhere from type one, which is the most relevant to skin health, to type three, which is the most abundant. And then like types two, four, and five, they're kind of like scattered throughout the body. For us, type one is the primary component of the dermis. So, it's a deeper layer of the skin, and it provides the strength, the structure, and the firmness. As we age, we lose that collagen, so things start to sag, they start to, you know, get a little loose. You get the jowls, you get the nasolabial folds, etc. Type three is the most abundant collagen, and it's found in the skin, the blood vessels, the organs, and the muscles. And it works alongside type 1, and it really helps with wound healing. So those are the two big ones. When we get to type three, it's found in the cartilage and the joints, type four is in a layer of the skin, pretty deep, and type five is in the corneas as well as some layers of the skin and hair, which again makes sense because we see most of it in the face and then slowly start to see the other systems being affected by collagen. So again, types one and three are going to be the most relevant. They provide the structure, the strength, the elasticity, and the youthful, firm skin.

PIERCE: Right, so talking about the different types, what about UV exposure? I know you've mentioned UV exposure, you've mentioned pollution, but how does that impact collagen? You said type one is the one in our skin?

WOLZ: Right. You know, it's interesting that you said that because, you know, we all kind of know — like, don't go out in the sun because it affects your skin. Don't do this because it affects your skin. But you know, I don't know if I ever, exactly. I don't know if I ever sat back and said, I wonder why it affects my skin. So, it's kind of interesting to do this because I was like, "My gosh, now I know exactly how it affects the skin." So the UV rays actually penetrate the skin and break down the collagen and elastin. They literally break it down because they're penetrating the skin. So, it triggers the production of free radicals. And if you, you know, we all know free radicals are bad. They're kind of a by-product. They run around. We try to take different supplements and do exercises and stuff to suck up those free radicals because they're damaging the cells. So, they actually trigger the production of free radicals, which are unstable molecules that damage the skin cells as well as the collagen fibers. So, it's really just the light coming in and penetrating the skin that causes the damage. Hence the reason sunscreen becomes so, so very important. And you know, they talk a lot about, you know, this is UVA, this is UVB, this is, you know, etc., but UVB is the shorter wavelength. So that actually causes the sunburn and the inflammation. And as you know, if you have an inflammation process, you're going to have cell damage. It kind of goes together. UVA waves have longer wavelengths, and they penetrate deeper. So those are the ones that are actually destroying the collagen. So again, UV exposure increases an enzyme, which degrades the collagen and other structural proteins in the skin. These enzymes are called MMPs. It's a big, long word, but basically, they're just causing the damage and it's just by penetration. So hence the

importance of sunscreen — two fingers, reapplying it every couple of hours — that we all, the majority of us, are really bad at.

PIERCE: Yes, well, and I don't know that I'd call this a controversy per se, but I see it every summer where people are talking about how bad sunscreen is. So, I have to ask the question, are there certain types, I know not necessarily brands, but like certain types of sunscreen you should be looking for? Because it seems like if there are chemicals in the sunscreen, then that would also play a role in damaging our collagen.

WOLZ: It does. And I think the best way to do it is to use a mineral sunscreen and really look at the ingredients. One of the best pieces of advice I got from a dermatologist was to use baby sunscreen because that's going to be the purest form of sunscreen because it is highly regulated. We hope, yes, but it is highly regulated. And most of the time it's like zinc oxide or something like that. It's not a heavy chemical fragrance, but you know, some of the worst things are like the spray because they have aerosols, they do not provide a good coating. So, stay away from the sprays. Again, the powder is a little questionable because you're rolling it on and is it working? The brush thing, who knows? I think on my face; I try to use a baby sunscreen. And then for the rest, I use a mineral sunscreen. But you can also look at sunproof clothing, you know, the hats that are UVA, UVB protective, clothing that is UVA, UVB protective. So, sunglasses, you know, we forget about sunglasses, but that collagen damage is happening in our eyes. So, like one of the biggest causes of cataracts, put your sunglasses on, you know, especially good sunglasses that protect against the rays.

PIERCE: That's a really good point. I'm glad you pointed that out. Nutrition has to be important too for not just our skin, but also our joints and our bones.

WOLZ: Super important. And again, it's the protein. You know, when you look at collagen, collagen is a protein that requires certain nutrients to synthesize. So, we have to consume nutrients. We have to add to them. The best way to get nutrients and supplements is through food and hands down. Okay. Because then you know that your body's taking it. A lot of people take collagen protein, like they mix it in a smoothie or something like that. And the research on that is really iffy, you know, because of the fact that collagen is good, but it has to go through your system of digestion to get out to the bloodstream where it produces the amino acids glycine, proline, and hydroxyproline. And those are the building blocks of collagen, but it has to get there. So, if you take a supplement, you still have to kind of go through that whole process of it going through your stomach, being degraded by the acid. So that's going to be limiting. Same thing with your face. There are a lot of collagen products on the market, like "put this cream on, put that cream on." What people don't realize is collagen is a very large molecule and it's not going to absorb through your skin. So, you can put it on your skin and spend a lot of money on a product, but it's really not going to make a difference. But there are some things that will help you like vitamin C. Every woman after the age of forty, and probably before, should be applying vitamin C to their skin because it is a cofactor which stabilizes and then adds some cross linking for collagen fiber. So, a little bit of support. So again, really important — vitamin C. The amino

acids that we just talked about, the glycine, the proline, the hydroxyproline, you can get those in bone broth, which I'm not a big fan of, but I have found if you mix it in a soup, like if you're making homemade soup and just throw in the bone broth, it's not too bad. But for me, just to drink bone broth, not a fan. But yes, in soup, it's great.

PIERCE: I don't think I am either. Yes. But that's why I also have trouble getting protein because I'm not a fan of things like that.

WOLZ: Oh, I agree. I agree. It's so hard. Chicken skin. Who eats chicken skin?

PIERCE: If it's fried, does fried count?

WOLZ: Fish. Exactly. Fish, eggs, dairy products, legumes. I think the best advice I got on protein is to look at ways to incorporate protein without knowing it. So, if I scramble eggs, I scramble them with a cup of cottage cheese and a half a cup of egg whites.

WOLZ: And then I scramble it all together, and I just like that— multiplied the protein. If I'm going to have Greek yogurt, I mix it with a scoop of protein powder. So, it's like, you can do it with cottage cheese. It's always like trying to figure out how I can add something. And it's hard.

PIERCE: Yes, without making it taste terrible. Yes, I agree. I'm not either.

WOLZ: Exactly. And it's hard. I'm not a big meat eater. So, you know, I'm not going to go out and eat like a 20-ounce steak, you know, so I have to really look at protein a little bit differently, you know, switch to eating jerky instead of, you know, chips. And it really is about becoming kind of obsessed with the amount of protein you're getting. Okay. Because again, it's going to release the building blocks for it. Zinc is another one. It's a coenzyme. It's going to help with the collagen formation. And again, shellfish, red meat, legumes, nuts, seeds, those types of things. Copper is critical in cross-linking collagen and elastin fibers. Again, it's going to increase the strength, increase the elasticity. Shellfish, whole grains, nuts, seeds, leafy greens. And again, you know, make sure you check with your own physician and make sure you don't have intolerance either. Proline, eggs, dairy, meat. You know, now we all just have to spend \$1,000 on eggs, and that will just eat the same amount of eggs—just do it for a million dollars. Gelatin, I don't know. Omega-3 fatty acids are a great help. And then, of course, any antioxidants, like vitamin E, and beta-carotene products, which will all help. So just think of colorful fruits and vegetables.

PIERCE: I heard a lot of repeats in there as far as the foods that you could eat. So, I have to sit down and be like, "Right, this one falls under all of these."

WOLZ: Yes, there are. Again, protein, fruits, and vegetables are going to be your best bang for your buck.

PIERCE: Yes, for sure. Now when it comes to systemic conditions like diabetes and autoimmune diseases, what is the impact on collagen production and our skin integrity?

WOLZ: Well, a lot of that has to do with collagen being a major component of blood vessel walls, and exposed collagen in the wound area helps attract platelets, aiding in clot formation and triggering the release of growth factors. So, you can imagine if we have limited collagen, we're not going to have that hemostasis that's going to occur at that wound site. We're not going to have the protein that's available to heal that. And again, environmental factors, poor diet, sedentary lifestyle, aging, genetics, all of those things are going to affect healing. We all know that it's much harder to heal a 90-year-old's bedsore, or decubiti, than it is for a 40-year-old. We all know that, and so much of that is related to collagen. So, what happens during wound healing is you have that initial hemostasis, where the wall ruptures, and it calls in all the things, then the growth factors come in. And then for the first zero to four days, we're in an inflammatory stage. Macrophages secrete various growth factors, which stimulate the production of collagen. Some collagens will be deposited, and it'll start the process. Then the next phase is going to be the proliferative phase, and that can be from four to 21 days. And that's where these fibroblasts migrate to the wound and begin synthesizing type III collagen. The interesting thing is now that we're moving in aesthetics to the use of collagen-based products like PRP, Growth Factor, and PPP, we are coming in at this phase. Instead of doing hemostasis and inflammation, we're coming in with those products at this proliferative phase, where we're actually bringing in fibroblast stimulation to actually start synthesizing and increasing that collagen to make it more flexible and less organized. It kind of looks like a scaffolding. So, these products are actually causing a scaffold for it, and then, of course, the other stage, which lasts from 21 days to one year, is going to be the maturation and the remodeling stage. So that's going to look at organizing and strengthening the collagen fibers. So, as a wound matures, scar tissue becomes more flexible and more resistant over time because it has entered that maturation and remodeling phase. So, it's a big process. I mean, it can take up to a year, depending on factors like genetics, health, and all of those kinds of things, which are kind of scary.

PIERCE: And just listening to you talk about the different stages of wound healing, I've seen a lot of wounds at the bedside, and I've never heard the word collagen come up when discussing how long it's taking to heal and different treatments. So, I just wonder, as we learn more about collagen and we develop more of these products, if there is a way that this could be brought in to help people heal faster.

WOLZ: It is. And I think what we did at the bedside was we just used the term protein. We all know we were always checking serum proteins, albumins, total protein, and all that. And I think we just said protein. "You need a high-protein diet. You don't have enough protein as you age. You're not increasing your protein." So, we use the term protein, which is basically, I think, what we're using for collagen. The new aesthetics field is moving to using that as a way to do that, but it's also moved into wound healing and skin therapy. Skin clinics now are using PRP products, growth factor products, and PPP, and it's just a whole new avenue that's out there. And it's amazing because it bypasses that hemostasis and inflammatory process, starting at the proliferative phase. So, we skip all that initial damage, and we just start at a good level. And you're seeing it a lot in skin and wound clinics. We're seeing more and more of it being used in wound clinics.

PIERCE: That's really good to know. I didn't know that we had moved in that direction, but it makes sense. It makes sense that we go there.

WOLZ: Yes, absolutely, absolutely.

PIERCE: Well, thank you so much for this information you have shared through this first episode. We are out of time, but, man, you really opened my eyes to the importance of collagen. I went into this thinking about just our face, but collagen is really important for the majority of the things that happen in our body. So, thank you for sharing this.

WOLZ: Absolutely. Thank you. I learned so much myself.

PIERCE: All right, well, I hope that you will join us for episode two, where we're going to discuss innovative treatments and techniques to help with skin rejuvenation.

Episode 2: Facial Aesthetics: Collagen and Skin Rejuvenation

Transcript

PIERCE: Welcome back to Facial Aesthetics, Collagen, and Skin Rejuvenation. If you missed our first episode, I highly recommend checking it out before you listen to this one. Kathleen Wolz helped us really to understand the science behind collagen and the role it plays not just in skin health, but also in the health of our joints and our connective tissues. And in this episode, we're going to focus on treatments and techniques for skin rejuvenation. So, Kathleen is back and ready to share some actionable insights to support your patients' aesthetic goals and even some of our own aesthetic goals, right?

WOLZ: Yes, absolutely.

PIERCE: All right, what are the most effective non-invasive treatments for trying to stimulate collagen production in the skin?

WOLZ: So, in part one, we briefly touched on anything topical as far as topical collagen, which is probably not the best choice. But there are some topicals like retinoids and peptides, which will help with skin turnover, and that stimulation will help increase your collagen production. Most of the non-invasive things, though, take time. And that's where people kind of get a little disillusioned. If you're going to use a retinoid product, it's at least three to six months. And it could be a year before you actually see a difference. So, nothing's going to be quick. Red light therapy, I don't know if you're on the red-light therapy bandwagon or not. I am a huge fan of red-light therapy.

PIERCE: Me too.

WOLZ: Yes, your hair, your face, your neck, your décolletage, you can use it on other parts of your body, like your arms. I mean, it is like the best tool. It's pretty affordable. You can go anywhere from, you know, one to two or three hundred dollars up to thousands of dollars for a full-body one. But red-light therapy, it works with that red light. It stimulates collagen because, again, just like UV rays, it penetrates the skin. So, every day, 20 minutes, I'm a huge red-light therapy fan. Hands— they're perfect for your hands as we age. So, that's a really good one. Chemical peels, again, any things that remove that top layer are going to tighten the skin and help stimulate collagen. So, some of the better chemical peels are going to work. Cryotherapy — you know, freezing cold dips. You know, there's a lot of research on that, those plunge baths. And they have really good results. And again, no, I don't like it— it's cold.

PIERCE: They do, but they just, they just don't make me want to face my battle with the cold.

WOLZ: I know, I know. The only nice thing is at least you get gloves and socks so that your hands and feet, which are always the coldest, stay warm. At least you get that. I've not tried it yet either, but it's definitely on my bucket list. And then, of course, ultrasound therapy has really come into fashion in aesthetics. So, it's kind of like ultra-therapy. And again, just like the waves, it's stimulating the collagen. And those are pretty much the, well, I guess the other one we can mention is the high intensity focused electromagnetic therapy. There's a brand called Emsculpt. And basically, it's a body contouring treatment. You put it on, and then, using electromagnetic waves, it moves muscles. So, like, I thought it simulated contractions because you can't control it. And then all of a sudden, you have a contraction. We had it done on our abdomen. You can also do it in the perineum area, and it's used to tighten pelvic muscles, like Kegels in order to prevent urinary incontinence. And again, there's nothing invasive with it. It's just a machine that does the work. So, there is more and more technology. It's crazy. There's a lot more technology that's coming out, that's non-invasive and that we're using on the outside.

PIERCE: It's like pelvic floor therapy. And I also find those lights, the red lights, fascinating. So, the one that I have has a bunch of colors on it, but there's a blue one that's really helpful for my daughter, who's a teenager. When her face starts to break out, I'm like, "All right, let's go sit underneath the light." And we used to do that when I would go to the dermatologist as a kid.

WOLZ: And it was expensive, you know. The red-light therapy is such a blessing that it's available at home now because it's beneficial for vitiligo and for inflammation. I mean, the possibilities for it are endless. And if you get that at a dermatology office, it's three hundred dollars a treatment. So, I mean, just think about the amount of access now for people with vitiligo or who have horrible acne with inflammation. Even people who are suffering from seasonal affective disorders it's another opportunity for them. The red light has been proven to be beneficial for that. So, it's like, what a cool thing that we can do this at home for a couple of hundred bucks.

PIERCE: Right. Yes. I have seen how things are becoming easier for us to access — not only to get but to also purchase. It's not an outrageous price, and that is really big for us.

WOLZ: It is, especially for things that are more topical or more non-invasive. When we start to get into the invasive stuff, it gets expensive. Of course, the bang for the buck's going to be bigger, but it's going to be \$1,000 a treatment, \$3,000 for three treatments. A package may cost you \$1,800, but the volume that you get out of it is going to be much different, of course, because it's more medical grade.

PIERCE: Now, I know that in episode one, we talked a little bit about collagen powder, and I do use collagen in the mornings, but mainly because it has so much protein in it. So, I mix it into my tea. And I'm like, "I'm getting like a whole breakfast in my tea now," because I don't really like to eat breakfast just because my stomach's not awake yet. I don't know what the deal is. But I'm really grateful that that's an option that I can do. I never meet my daily protein quota like we talked about. But is that collagen supplement really helpful in decreasing the loss of, or adding back any collagen that we've already lost in our skin, our joints, and our connective tissue?

WOLZ: It will be because it provides the building blocks. So, you get glycine, proline, and hydroxyproline. So those are amino acids that are kind of the building blocks for collagen. It's not going to replace your collagen. There's a lot of probably false advertising, like "take this collagen and it'll strengthen your nails and your hair." I've not seen that. I've taken so much collagen to try and grow my fingernails, and I don't think it's ever going to happen. Prenatal vitamins probably worked better. But I think that it's definitely part of a healthy diet, and a healthy diet is going to stimulate those amino acids and peptides to help you start to grow your own collagen. So, I don't think, again, that it's one of those things that you're going to see instantaneously. I think it's kind of like a lifelong commitment. It doesn't hurt you — what your body doesn't need, your body gets rid of. So, you know, it's a pretty safe alternative. And I think if you look at it that way, it definitely won't hurt. Just make sure you get one that's clean, you know, again, because there's so many things out there that are not clean. Find a protein powder or a collagen product that doesn't have a lot of supplements or other additives to it. Look for one that's rated as non-GMO or clean-certified.

PIERCE: Right. And that's a really good point too. And I actually like the collagen powder more than the protein powder because I have a hard time finding a protein powder that I can just get past the aftertaste of. It's hard to find something that I can get down. But going to injectable treatments like collagen stimulators and dermal fillers — how do they work to rejuvenate the skin?

WOLZ: So, the newest thing that's on the market now is any type of product that's going to cause us to move forward in actually more invasive product. So, when we start looking at the market, the market is really changing. You know, micro-needling is huge, and micro-needling just kind of puts little holes in the skin. Well, those holes also help you apply a topical collagen or a topical PRP. You're seeing a lot more where we take your blood, spin

it down, remove the platelet-rich plasma, and remove the platelet-poor plasma. We can mix them together so they become injectables, or we can just take the platelet-rich plasma and just use it on the top of your face like a vampire facial. So, it's really a big movement into using your body's own products to begin with. For years, we just used HA fillers. Everyone got, you know, the typical fillers — Voluma, Restylane, and Juvéderm — which are good products, and they're still on the market. But truly, only 4% of the total population will ever use a filler, and many don't because of the caricature effect, or because we sometimes overfill the face. The neat thing that's happening now with these collagen products is that they provide bio - stimulation. So, you actually are inserting a product that will be absorbed by your skin. It's a natural product. It comes from you, so your body recognizes it. It doesn't last as long as a filler because it gets reabsorbed, and that reabsorption then causes that second phase — that proliferative phase of collagen restoration. So, we don't just get that hemostasis and inflammation response — we're more into "let's produce our own collagen." It's usually a series of treatments, but it starts that collagen regeneration process. And that's where all of aesthetics are moving now — to products like Sculptra, which is not your typical HA product. Radiesse and other bio - stimulants also work by causing you to start to produce your own collagen. Then, PRP, PRF (platelet-rich fibrin), and PRGF (plasma-rich growth factors) — they're just growth factors that are rich in clotting factors and fibrin proteins, and those help the skin regenerate. Exosomes are huge right now. Exosomes, again, are peptides and amino acids that have been created by the cosmetic and dermatology world. They go on the outside of the skin and work well for stimulation, especially when combined with micro-needling. or micro-needling RF (radio frequency), which also uses radio frequency to stimulate collagen growth. The newest one that's hitting the market is polynucleotides — which come from salmon DNA. It's really big in Korea, and it also enhances collagen synthesis. Yes, salmon DNA — it increases firmness and elasticity. There are also heat-based products.

PIERCE: I hear a lot about Korean products, so I mean it must be good.

WOLZ: Yeah, Korean skincare, well, that's where everything comes from. But it's like everything else that comes outside the United States. You just want to be careful when you look at the efficacy and safety of all these products. Because there's a lot of things that come out from outside the country that are not safe. But Korea is known for their skincare.

PIERCE: Mm-hmm. And that's a really good point. Yes, they really are.

WOLZ: Yes, but they're known for their skincare, like microneedling, microneedling with RF. And there's also things that will heat the collagen level and cause that to stimulate itself. Things like Thermage, which is a very old product. It's been around for a long time. But now it's gaining resurgence again, because there is something that it helps. Morpheus-8, they're all like kind of coming into their own now as far as being able to be either used individually or combined with the PRP, the PPP. I use a product that is a PRP and then it's converted into a PPP gel. And I do a lot of injections with that. And what it does is you inject it into the lines, and it fills the lines. You never overfill with it. You just

take it to fill. The greatest thing about it is it's your body. So, the risk of a vascular occlusion and stuff from an HA filler is nonexistent. I mean, it's always a potential, but in the past three years that it's been on the market, they've never had one. It can be used anywhere in your body. You can insert this product anywhere. We do it into knees, PRP into knees, shoulders, toes, joints, to stimulate collagen production, to stimulate cartilage, and to lubricate the joints. So again, you know, like collagen, these injectables are just continuing to grow and grow and grow and grow. They're relatively safe. You can't have an allergic reaction to it because it's your blood. So, and if you do inadvertently occlude a vessel, your body comes in and disperses it. You just put a little heat on it, your body comes in, it disperses it, and that's the end of it. There's no hyaluronic acid or hyalinelix that you have to use. There's no trips to the ER. There's no necrosis. There's none of that, because it's your body. So, your body's like, hey, let's fix this. Let's send those macrophages and take them out.

PIERCE: Yes. Is this type of product being used in places like orthopedics where people are having joint issues?

WOLZ: Yes, absolutely. And it's even being used in chiropractic. In the state of Illinois, chiropractors cannot do injectables, but a lot of them have aligned with medical professionals, which is a great source of income for people that are looking for different sources of income, to align with a chiropractor in your state, and then you can come in and do the injections. And truly, the injections are pretty easy to do, especially in the big joints, the knees, the shoulders. You know, they're big joints. They're very easy to get into. It's when we start looking at the toe for gout, that gets a little tricky, but the rest of them are pretty big joints. But yes, you're seeing a lot of it in ortho. Yes.

PIERCE: So, this can be used to treat gout? I have not heard of this in ortho, so I do find this really interesting to see. We were specifically talking about collagen for the face but look at all these other places in our body that benefit from the use of collagen.

WOLZ: And it's not one and done. That's the thing that's really important with any of this collagen. Because it's biosynthetic and it's stimulating the body to create its own collagen, this is not like an HA filler where it's one injection and now you're good for 18 months. This is always going to be a series. I have a client who's having PRP put in her knee for bone on bone, no cartilage at all. And it's a series of one injection per week for the next six weeks. So, every week she's going to go in and get an injection. So, this is never going to be a one and done. For the treatment of knees and shoulders, those types of things, it will be covered by insurance in an orthopedics office. So again, you know, there are some other options people can look at too.

PIERCE: Mm-hmm. That's really good to know. Thank you for sharing that. So, I know that we've talked about microneedling, radio frequency. You did mention light-based therapy. What about laser, laser therapy?

WOLZ: Lasers are great. I will tell you the downside with lasers is the expense. You know, a good laser is usually a hundred and something thousand dollars. For most of us starting out in aesthetics, it's just cost prohibitive. You know, that's like the hardest thing. Unless you're a big box store, it's hard to come up with \$180,000 for the latest, greatest laser. But lasers are amazing. And there are so many of them out there now. There's an ablative kind like CO2. I want a CO2 laser treatment so badly just because I'm amazed by how it takes off a whole layer of skin, gets rid of fine lines and wrinkles, stimulates the collagen. It's amazing. You know, there are just so many good ablative lasers out there. They're great for acne scarring. They're great for significant sun damage. The thing is though, there's downtime. It's going to be a couple of weeks before you can go out. With the CO2 laser, your whole face is going to peel, and it peels in huge layers. So, it isn't like you're going to go to the prom in two days. You're not going to be happy. You know, I don't think it is though. I think we're really, the other interesting thing about aesthetics is we are really moving to painless aesthetics. So, we're doing a lot more things like the use of lidocaine.

PIERCE: That sounds so painful.

WOLZ: We're doing a lot more nerve blocks, you know, like with lips, we're actually going in and creating big nerve blocks. We're using lidocaine to make the pilot holes in order to insert the cannulas into. I do PRP on the head and anesthetize the scalp in order to inject all the PRP for hair growth. Some places are using nitrous oxide, laughing gas, and they're using that now incorporated in order to deal with the pain. And of course, you know, the topicals BLT and those, but we're really moving into as pain-free aesthetics as possible because this stuff is going to be invasive. It is going to be painful at some level. I think where we really run into problems a lot with these lasers is when you have people that are not well-educated operating lasers and then you start to see the laser burn. And that's scary. You know, the world of aesthetics is kind of like the wild, wild west right now. Anybody can hang a shingle and say like, "Hey, I'm a spa." And unfortunately, there's not a lot of good oversight. You know, American Med Spa is excellent. And everyone who's running a medical spa needs to be part of that because they provide good insight, lawyers, and all of those things. But in my state, people just have to hang a shingle, and they can call themselves a med spa even when they don't have a physician. And they're doing lasers, they're doing hair removal, they're doing all these things. And then we get patients coming in that are burnt, and we're trying to deal with those burns because we can write prescriptions and do those kinds of things. I said, "I'm going to make an Instagram about how to choose a med spa." I think it's very important that people make informed choices, and they don't realize that. So, as we're moving into these areas that are going to be more invasive, they're definitely more pricey. You know, an HA filler, you'll pay \$600, say, for two syringes. You may make \$400, \$500 profit off of that. But when you start to do PRP and PPP injections, your return on investment can be as much as 300%.

PIERCE: Wow, that's something to really think about for people who are going into this field.

WOLZ: Right, so exactly. Because the product we use for our PRP, PPP is a \$7,000 investment. And you're charging over \$1,000 a treatment. And the kits are, you know, minimal. Yes, there's a lot to look at. And again, when you start looking at those big lasers, they're \$180,000, \$200,000. They're amazing, but it's a lot of capital to come up with when you're starting a new spa.

PIERCE: Absolutely. Now I want to go backwards a little bit because we've talked about a lot of these invasive procedures and things that can be done to help with collagen production. But I want to go back to the retinoids and the peptides that you had mentioned earlier. I feel like that's probably what most people are using right now, and that the highest population of people are using right now. Can you talk a little bit more about the benefits and the limitations of these topical treatments?

WOLZ: Sure. So, the retinoids are an amazing product. First of all, you have to probably be an NP, a PA or a physician in order to prescribe it because they're a prescription medication. Now there are a lot of over-the-counter retinoids and if you use a medical grade skincare product in your spa, again, you'd have to be a physician or sometimes like a full practice nurse authority, but you have to be able to, they'll have some higher doses of retinols. The ones at CVS, Walgreens, Sephora, Ulta, they're going to be pretty low in retinoids. So, they're not a bad product, but they're not going to give you the same bang for the buck that you're going to get off a prescription one.

So, when you start somebody on a retinoid, most of the time the problem is, the side effects of being on a retinoid is you're going to get a lot worse skin before it gets better. So, everybody has to understand that if you're doing it for acne, your acne is going to get much worse before it gets better. If you're doing it for fine lines and wrinkles and skin rejuvenation, which it works great at, it takes time, at least probably six months before you see anything. When you commit to retinoids, this is going to be kind of the rest of your life thing. This isn't something you go on and then you don't see something in two weeks, and you go off of. One of the biggest side effects of it is it dries your skin, and some people are going to be more sensitive to it than others. For those, what we always start with is we prescribe Tretinoin or Retinol A or whatever the product is, and we'll say, okay, this is how you're going to do it. For the first month, you're going to use it every third night. For the second month, you're going to use it every second night. And then by the time you get to the third night, if you are tolerating it, you're going to use it every night. We're also big on sandwiching it. So, you know, wash your face, put lotion, a moisturizer on, put your retinoid on, and then put moisturizer on top of it. Stay away from faces like parts like around the nose, around the corner of the eyes, corner of the mouth, because those are sensitive areas anyway, and you're going to wind up getting, they're going to dry out and crack really quickly. We tell them not to spot it. You have to use it as a pea size amount over the whole area. Don't try and spot treat with retinoids. It doesn't work. Tell them that your face is going to get worse before it gets better. If you start to develop a lot of dry skin, then back off on it. If you're using it every other night and your skin's really getting dry, then back off of it. Go back to every third night. Your results will be slower, but your skin integrity will be better. We tell them to avoid it for a week if

they're doing a waxing or anything like that, just because of the fact retinoids will make your skin sticky. And so, it's not that you can't do it. It's just that it makes it a little sticky. So then when you do a wax and you yank, you're going to yank off some of the skin because it's made your skin a little sticky. So, we tell people, just be careful with that. I always tell people if you're pregnant, nursing, trying to get pregnant, you need to check with your OB-GYN before you take it. Even though it's topical, I don't even want to go down that route. So, we're pretty good about that and then we tell them it's a long-term product. Most of the time your insurance won't cover it. And in our area, you can get a tube for probably like \$35. And just depending on how you use it, you can use it on your back. We use it with back acne. We use it with chest acne, same thing. Even sometimes, and the cool thing about these retinoids is they also help with hair growth. So sometimes with patients that are losing hair around the scalp, we'll go ahead and have them put their retinoid into their hair. And it will stimulate, because again, it's stimulating circulation. It's stimulating follicles. So, then you wind up getting a little hair. It's a great product. It's just, it's not a short term.

PIERCE: Right. Now, how can a healthcare professional guide patients in choosing the right skin rejuvenation treatment?

WOLZ: Well, you know, again, the only thing I forgot to add to about the retinoid is sunscreen. You have to wear sunscreen. It will absolutely make your skin very sensitive to the sun. So that's the other tip we have. We have like a little chart that we give them. As far as like establishing a skin care, I think one of the things that people do, that's probably the worst thing they do is they think the more expensive a product, the better off it is.

Okay? And so, we buy these products that are, you know, I mean, you can buy a moisturizer that's \$500 a tube, you know, or you can go to CVS and get La Roche-Posay, you know? So, I mean, we're all over the place with it. So basically, the things you need to have healthy skin besides like a diet, sunscreen, you know, protein increase, exercising, besides all of those things, the best things you can do for your skin are, clean, moisturized sunscreen. And really after that, you don't even need an eye cream. There is no difference between the skin in your eye and the skin on your chin. It may be a little bit thinner, but there's no magic to an eye cream. And you know, we all buy this very expensive eye cream and there's no magic to it. Stay away from alcohol-based things like toners, spray some of those things. Do you know what, I'm a victim of Instagram all the time. I bought the snail mucin oil. I bought some nice spray that you do afterwards, because some dermatologists said this is a great product. So, I do that. It doesn't do anything. It smells good. Mucin, Vaseline. Vaseline is an amazing skincare product. You got dry skin, moisturize, put some Vaseline on it, bam. Aquaphor, again, these are amazing products, but because they don't come in a jar that says something French, you know, we don't think they're good products. So really look at your skincare. I think that the part, probably the highest risk group right now are these kids that are going to the Sephora's and the Ulta's and they're buying the Drunk Elephant and they're buying these products which their skin does not need. And I think one of the markets that estheticians really need to get into is we need to do preteen evaluations. Start doing some preteen facial, some preteen skincare lines,

more organic, mild products. They just don't need Drunk Elephant. It's a great product, but they don't need it. So, I think it's really about us trying to educate and move people to a line that works for them, but they don't have to spend hundreds and hundreds of dollars.

PIERCE: That's a really good point. It's easy to get pulled in with all of the social media and influencers and advertisers on there telling you that these are really great products. And unfortunately, they are pulling in a lot of doctors and nurses as influencers to help them sell more product. And that's really hard for us to choose what we're supposed to use.

WOLZ: It is and it's a billion dollar a year industry. You know, face products are a billion, the beauty industry is a billion dollars a year industry. And I know myself, you know, like, I bought this, you know, look, it's so expensive. Do you know what I mean? And then you're like, well, it's not really doing anything, but I bought it. So again, you know, use the red light. If you really want something that you're going to get a big bang for your buck, use red light therapy.

PIERCE: Yes, that's really, really good to know.

WOLZ: And sunscreen, really sunscreen, sunscreen, sunscreen. You know, if you can't, there's one thing you're going to do, do the sunscreen.

PIERCE: Right. Well, thank you so much, Kathleen, for joining me for this discussion. And for many of us, this was a really eye-opening view into another area, aesthetics, and even just seeing it's more than just face and skincare. And it's definitely another option for health care professionals that's really continuing to grow significantly. So, it was really interesting when you were pointing out that they're teaming up with chiropractors and now this is moving into orthopedic offices. So just really eye opening to see where this is going. But what I want to ask you as we wrap this up is do you have any advice or any insight for any healthcare professional that is maybe looking at going into this area of care, maybe full time or they just want to dip their toes in to see if it really interests them.

WOLZ: I think the best thing is to get a mentor. You know, I think one of the things that we laugh about all the time, because when we started this, was a group of doctors and I went to education courses. And we were with people that were not at, that educationally were not at the same level. You know, they were kind of it was just a mix, aestheticians, RNs, you know, just a mix. And then we had this core group of five people, and they were all doctors and me. And the funny thing was, we struggled more than anybody because we're like, my gosh, how much is that? Like we were so cautious on every decision we made and everybody else was just like, okay, we'll just do this. So, I think we have to stop that. I think we have to make sure we're educated and we're comfortable. And the best way to do that is get a mentor. I mentor constantly at our spa. I bring people in, PAs, MD students, DO students, nurse practitioners, RNs. Do you know what? I'm happy to show you because I think that, you know, continuing education is huge. I'm always listening to a podcast, attending it and in service. The market changes consistently.

And I think that you have to continue to learn. And it's not just about knowing about the product. You have to understand the psychology of the client. You're really working with a group of people who want to improve their self-esteem. And it's very important for healthcare providers to understand that. And that, to me, is one of the biggest things. Sometimes we're all focused on making money and not focused on the fact that this is a very intimate relationship. You're working with people who have a lot of mental, emotional issues, and they're not just coming in for a facial, they're coming in because they're uncomfortable about how they look. They're uncomfortable about something that is a true concern to them. And when you realize that and you give that kind of advice and you're that mentor, that's when you're going to become successful.

I do think that the industry itself, if you want to get into it, is such an exciting field, and I do think it's growing. The best thing you can do is, again, get a mentor, get involved in education. Continuing education. Because it is not like nursing. And the reason I think nurses struggle with this is because it's not a set and dry environment. There are no strict protocols when you're doing aesthetics. It's a lot of being able to read people, read situations, use your knowledge, use the tools that you have, but also have the ability to be flexible. I really think the flexibility in aesthetics is huge.

PIERCE: Yes, absolutely. Well, thank you so much, Kathleen. I really appreciate your time.

WOLZ: Thank you!