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EMPOWER - Corneal Health and the Relevance of Specialty Lenses

Dr. Jacob Lang:
Hey, everyone. I'm Dr. Jacob Lang. I wanted to welcome everyone to a special episode of the Mod Pod. This is our first installment of our new 2025 EMPOWER series aimed at advancing optometric knowledge to help elevate our practices and our patient care.

Today's episode is going to focus on something I'm very passionate about, as well as my guests, corneal health and the role of relevance of specialty contact lenses in optometry. I'd like to introduce my amazing guests and featured experts. Thank you for joining me, Dr. Diana Chu and Dr. Ashley Tucker.

Dr. Ashley Tucker:
Hey, Jake.

Dr. Diana Chu:
Hello. Glad to be here.

Dr. Jacob Lang:
Glad to have you. So let's dive into this. Why are corneas important? Why do we need corneas?

Dr. Diana Chu:
Well, it's just such an amazing structure. It's essential for vision and overall eye health. The cornea is responsible for a significant part of the eye's total focusing power, so it refracts the light entering the eye so it can properly focus on the retina. So this is kind of the first step towards clear vision. And then, the collagen and the stromal structure of the eye are arranged in a parallel pattern, so that prevents light from scattering, and then we have light passing through without distortion. So of course we want to keep the cornea healthy, but there's a wide range of diseases that can affect it. But it's essentially the first step in having clear and crisp vision.

Dr. Ashley Tucker:
Well, I totally agree with Dr. Chu, but what amazes me is how the tiniest little opacity, a little scar, can totally wreak havoc on that structure that allows so much clarity for the patient. So I'm in the business of, of course, protecting the health, but fixing some of the issues that happen when things go awry. So I'm excited to talk more about that.

Dr. Jacob Lang:
You're a fixer. I like it. I agree. It's really this amazing avascular structure with these very organized collagen fibrils that make that optically clear to visible light so visible light can penetrate. We think about this from our days in optics where light, as it hits a different interface, whether that be water or air, when it transfers from one of those things that can really have some opportunity to bend. And I always think of the cornea as the holder of the tear film, and that tear film is actually what bends the light the most, but we'll give the cornea some credit here. Like you said, so many pathologies can affect the cornea, things that might distort the cornea.

Dr. Diana Chu:
Well, in clinic, I think as optometrists, some of the biggest players would be conditions like keratoconus or Fuchs endothelial dystrophy, dry eye syndrome, keratitis, corneal ulcers, and herpes. So I think those are some of the most common conditions that we encounter as optometrists, though so many to talk about, but I think some of those are the big players.

Dr. Ashley Tucker:
I just wanted to add in those dystrophies that are supposedly rare. But if we're looking for them, we're going to see the EVMDs and all of those sorts of dystrophies that will affect the different layers of the cornea. So again, if we're looking for them, we'll certainly see them

more commonly than we think.

Dr. Jacob Lang:
Anything that might cause irregularity, right? The keratoconus, the irregular astigmatism from things like EVMD, even. Like you said, Dr. Tucker, it's much more common than we probably give it credit, that we'll see it if we look. It's amazing what we'll see. If we breeze by past it, leave the lights low, we might not see it.

But we use that change in shape for one of the biggest revolutions in eye care, right? Refractive surgery, to induce change to our cornea, to change the shape and let light focus. So I think that's awesome.

We appreciate a really healthy cornea, right? And when corneas aren't healthy, we want to fix them. But how do you educate your patients around the importance of corneal health and how to prevent avoidable conditions or avoidable pathologies in the cornea?

Dr. Ashley Tucker:
So, some of these things are genetic and they're unavoidable, especially the patients that are in our chair with keratoconus. The first thing they'll ask me is, "What could I have done? Did I do something that caused this?" And it's the whole chicken before the egg thing. We don't know if eye rubbing had anything to do with the cornea herniating or if the keratoconus is what causes the patient to rub their eyes. So I have mixed feelings on that. I don't really know. So that's tricky to talk about what you can do to prevent that or to make those scenarios any better.

But, dry eye disease is something that is a huge topic in everyday practice. I'm sure Dr. Chu and you, Dr. Lang, as well see this and talk about this all day long. I like to get ahead of these sorts of severe situations, even moderate to severe dry eye. If I'm seeing just small signs of dry eye disease, ocular surface disease, I'm really trying to get ahead of this because I know what end stage looks like, and this is, in my opinion, completely preventable if we as clinicians are getting ahead of those small signs, small symptomologies that we're seeing every day.

Dr. Jacob Lang:
Couldn't agree more. Passionate about early intervention with ocular surface disease. That's so great.

Dr. Diana Chu:
Yeah, definitely. I mean, echoing early and proactive signs and detection specifically for some of those genetic diseases, because we have just so much diagnostic power these days with some of the tools that you can use in identifying early risk factors and being able to empower patients with some of that education and understanding, particularly with family members, or even just wanting to understand the cornea itself in keeping it healthy and what they can do.

I get a lot of patients that want to ask, "Well, what can I do in the future? How can I prevent certain conditions, certain diseases?" Moving towards preventable things, I will talk to them about bacterial or viral infections and what practices and lens hygiene, lens or even lid hygiene practices that you can do in order to minimize the risks and the potential for infection.

So if they're in contact lenses, certainly education about contact lens abrasions, what to look for, signs and symptoms of that, not just what they might be doing or by rubbing their eyes, but just things that they can encounter and better ways to keep their lenses clean. And then of course, for just lifestyle choices and lifestyle modifications that either contact lens wearers or anybody with genetic conditions and risk factors can keep in mind.

Dr. Jacob Lang:
Yeah, I think the dentists, they always do a better job of the hygiene talks, right? Like Floss every day and brush your teeth twice a day and all these sort of good things. I know we glaze over a lot of this stuff if it's a busy day and things like that, but we do need to keep that front of mind when we're educating our patients. What things are high on your list to tell your patients, as far as ocular health or ocular hygiene, to keep their health at a high level?

Dr. Ashley Tucker:
I talk to women all the time, and I find it quite fun, about makeup debris and making sure that they're taking off their makeup and washing off their eye makeup every day. You'd be surprised, if you're not talking to patients about this, how many patients really don't do that. That's a huge no-no, a huge risk factor for bacterial infections, worsening of conditions like Demodex and just all kinds of things that are preventable. So just having that makeup conversation with teenagers and then grown women alike can make a huge difference.

Dr. Diana Chu:
When you talk about lid hygiene, you'll get different responses. And sometimes you want to be careful about that conversation in making sure that that person understands where it's coming from. Instead of getting offended and thinking that, "Oh, they're not cleaning their lids or their face well," versus framing it in a way that, "Hey, this is actually a biochemistry issue. It's not that you're not cleaning

your eyelids or your face or giving good practices to your eye, that these are kind of uphill battles that sometimes at certain points in your life you need to start addressing, whereas maybe in the past you didn't have to worry about."

So framing even that conversation lid, hygiene-wise, as a biochemistry issue, built up debris, et cetera, that actually puts a little bit more power in the patient's mind versus just that they feeling like they can't do anything about it because this is just what happens. So that's one, I think, tip that I've learned as I've been seeing patients and ways to frame the conversation.

Other is making sure that patients understand that a lot of contact lens overwear or overuse is within their power, making sure that they have a pair of glasses to use and giving them tools to make it a little bit easier for them to have better practices instead of just knowing that that's something that they should do.

Dr. Jacob Lang:
I always try and use the... The dental analogy is you brush your teeth. You got to keep your eyes clean, too. Wash your hands. Wash your face. Wash your eyelids. That's a great point.

So let's move on. Let's talk about when special contact lenses are the answer for corneal diseases or corneal pathology. So, I know this is a real passion for both of you.

Dr. Ashley Tucker:
I, fortunately, have a pretty high referral-based practice where I get a lot of patients referred in specifically for specialty contact lenses. But in some regards, I have to pump the brakes and say, "Look, we have some issues that we need to address prior to jumping into contact lenses. I can't wait to get you there." But if the patient has severe ocular surface disease, has dry eye that's kind of out of the realm of what a contact lens alone can do.

There are sometimes patients that have, like Dr. Chu was mentioning, Fuchs that I would love to put them in contact lenses right away, but their endothelial cell count is a little too low. Or patients that have had a corneal graft, again, taking a look at their endothelial cell count, a little too low for contact lenses. So we really have to temper those expectations, not get too excited and throw contact lenses on every patient before we look at them as a whole to make sure they're a good candidate and setting them up for success. That's the key, setting them up for future success and not just fixing the issue right then and there.

Dr. Diana Chu:
Yeah, I completely agree with evaluating candidacy before jumping into lenses, because you want patients to be successful in it. It is a long process to be getting into the right lens, whatever modality you choose, and you want it to be worthwhile for the patient and for the patient to be on board and excited for the process as well.

For those patients who have severe ocular surface conditions, for example, like very severe dry eye or keratitis, utilizing a scleral lens as both a therapeutic and compensatory lens is really helpful for activities of daily living and not having their corneal and surface diseases take away from any of their quality of lives.

Dr. Jacob Lang:
And with using these special lenses, there's essentially a artificial cornea, right? There's a bunch of options for that. Dr. Chu, can you describe some of the main types of specialty lenses you utilize in your clinic?

Dr. Diana Chu:
Yep. So there's three categories as I'm evaluating patients for candidacy. It would be for an RGB lens, a rigid gas permeable lens, a scleral lens, and then hybrid forms of lenses. And a lot of what determines what I recommend for a patient is going to be, of course, their corneal condition, things like their astigmatism, their K's, but also just looking at them holistically, looking at the dexterity of their hands, what their lifestyle looks like, if somebody has a very, very busy lifestyle versus... And even their temperament of patients and things like that. So a lot of factors to consider.

But in terms of the tools and the resources that we have as doctors to offer, those are some of the big categories. And developing those relationships with lens consultants and lens companies really opens the door to what we can offer our patients in the clinic.

Dr. Jacob Lang:
It used to be gas perms were kind of the thing, the thing. And then sclerals have really kind of revolutionized contact lenses. Scleral lenses has kind of become the Frank's hot sauce of specialty contact lenses. They just put that thing on everything now, right?

Dr. Ashley Tucker:
Right.

Dr. Jacob Lang:
I know everyone's answer is like, "Oh, just put a scleral lens on it." It's like, "You have a corneal disease? I'll put a scleral lens on it." When do you step back and say, "I'm actually not going to use a scleral lens for this patient. I think this patient would do better in an RGP"? Or when would a patient do better in a hybrid lens?

Dr. Ashley Tucker:
Sure. So for patients that have mild to moderate keratoconus, they can do just fine in an RGP. They really can. It's more cost-effective. It's way easier to put in and take out. So I lean on corneal RGPs for those types of patients. And I really look at any patient for the potential of an RGP. But you're right, scleral lenses have pretty much taken over the industry when it comes to specialty designs.

But for hybrid lenses, that's one of my favorite go-to lenses. I wear hybrids myself, so I am a little bit biased. But for any patient that has had success in a soft lens, with handling, wearing the lens, and you think they're just not quite ready to go all the way to a large diameter scleral lens, a hybrid is a really good intermediate. It can be a lens that could be the end-all, be-all for the patient, or it could be a lens that will just transition an RGP wearer into a scleral lens at some point.

The only limitation with hybrids is that there is no front-surface toricity option. So if the tear layer does not neutralize the astigmatism, then there's nothing else that can be done with a hybrid lens. But you'd be surprised at how many really irregular corneas can do well in a hybrid.

And then one other thing, going back to RGPs, if the patient has a small HVID, a really small one, and they may have trouble with their hands, like Dr. Chu was mentioning, an RGP may be the better option for them just to save them and you the heartache.

Dr. Diana Chu:
I agree that we do have to look at the patient, the physiology, very closely, not just the cornea and the sclera, but also the eyelids and the fissures and all those aspects.

Think because sclera lenses get so much attention, we do forget the option of RGPs and how beneficial and wide range that they can be used as well, especially cost-wise. So keeping in mind the cost specifics and the even insurance aspects of what a patient can and cannot afford or what is considered a financial burden for a patient are things that we also have to keep in mind as well.

Dr. Jacob Lang:
That's awesome. So yeah, anyone any corneal issue might benefit from better vision from an artificial cornea induced by this specialty contact lens, but how do you start the fitting process? Are you more of a empirical fitter, or do you do some diagnostic fittings? Do you use mapping things? How do you get your feet started on determining the right lens for the patient?

Dr. Ashley Tucker:
I am old school. I really like a diagnostic fitting with a really good diagnostic fitting set that you as a practitioner feel really comfortable with, knowing which first lens to go to. That is really empowering to me as a practitioner and to the patient when we can demonstrate right then and there the potential of the lens. So, I lean on just, again, pulling a lens from my fitting set, fitting until I'm happy with the lens, and then over-refracting and making sure the patient can see well.

Of course, technology has allowed us to create these unbelievably custom designs. But for those of us that are just starting out, that may not be feasible to get those certifications that are required for the impression-based lenses, for example, or to have profilometry. I still do not have a profilometer. I've been fitting for 15 years. And it's because diagnostic fitting has served me so well. So that's where I'm at with how to fit.

Dr. Jacob Lang:
You don't have to have these sort-

Dr. Ashley Tucker:
No.

Dr. Jacob Lang:
... of special technologies to get started.

Dr. Ashley Tucker:
No, you do not.

Dr. Diana Chu:
Yeah, there is so much power in your slit lamp examination utilizing, putting a lens on that patient. So in my office, we have a Pentacam. We have an OPD and an OCT with special interior segment and cornea lens additions. And all of those are very helpful in being able to

fine-tune and edit and even troubleshoot the lens-fitting process, but really nothing replaces how you look at the lens under the slit lamp, whether or not there is vessel impingement, if the limbus is adequately cleared, if there's adequate corneal vaulting. All of those things are sort of the art to fitting scleral lenses.

And there have been times where things will look almost textbook perfect on some of the diagnostic scans, yet you can see on your slit lamp exam where some edits need to be made in listening to the patient. And so I think marrying the both together is really what sets apart a sclera lens practitioner who is skilled and really hearing the patient and meeting the patient's needs. I don't think you can have one without the other. Both really need to be very strong.

Dr. Jacob Lang:
When we fit these patients in these specialty lenses, they're excited, we're excited, but this is kind of a big change in their life. They're going to be wearing this to see, right? So they're going to be doing things like driving a car or working on a computer for 12 hours or running around playing sports with their kids, hopefully. So there's a lot of demand. And how do we manage these expectations or how do we manage these demands? How do you get a patient to be ready for all the ups and downs that can come with starting something new in life, whether it be wearing a contact lens or starting a new job?

Dr. Diana Chu :
Yeah, you definitely hit the nail on the head where there is a steep learning curve for most patients who begin just the journey of incorporating a lens into their life. I think a lot of it is being realistic and speaking with the patient, not sugarcoating anything, that there is a certain time investment, but also that, like everything, people learn and build the skill to be able to seamlessly integrate it into their life. So realistically speaking, yes, it's going to take time and skill in the very beginning, but stick with it because blink reflexes change and people get better at it as well.

And I think when patients see the difference between with and without the lenses and just how this is a tool to, yes, help them see their kids' soccer games and help them do all the things that they weren't able to do before, yet their eyes do have the potential to see that well, that is a huge motivating factor. And if you can tune into that motivating factor, the patient then is on board as well and you kind of work together as a team. But certainly stressing, especially in the beginning, a steep learning curve and a lot of patience in the fit process.

Dr. Jacob Lang:
Dr. Tucker, do you have any common phrases or... I guess they're pearls, right? These little phrases that we use over and over again, "It's like riding a bike," or any of these sort of things that you use when you're getting patients started in contact lenses?

Dr. Ashley Tucker:
Oh, gosh. I don't have a catchphrase. Gosh, let me think.

Dr. Jacob Lang:
We're going to get you one.

Dr. Ashley Tucker:
I know. I need one. One thing I do kind of want to mention is we all get so excited to create this new life, this new set of eyes for patients, but we also have to recognize that we are also creating a bit of a new set of challenges and problems that we have to be ready to troubleshoot with the patient. Because we think they're going to be so excited to see 20/20 or 20/30, whatever it is, compared to what they had been wearing. But then sometimes when they circle back to us for their follow-ups, they're disappointed for one reason or another. They're not able to wear them as long as they thought that they could, or their eyes are a little bit red towards the end of the day, or they have that pesky fogging.

So we all have to be mentally prepared, like we've said, for the highs and lows because we are creating something new, something also that can be quite challenging. So tempering expectations and letting patients know that, regardless, we are there for them, we are going to get them to the place that they need to be, but following up with us and communicating with us on what the issues are is paramount to their success.

Dr. Jacob Lang:
I love that. Communication, I'm here for you. I think that's so important, just so that they know that if they have questions or when they have questions, when they have problems-

Dr. Ashley Tucker:
Because they will, right?

Dr. Jacob Lang:
... they'll have a resource, right?

Dr. Ashley Tucker:
Yeah.

Dr. Jacob Lang:
Besides just Dr. Google, they can actually lean on their doctor for help as well, right? Awesome.

So this, specialty contact lenses, that can be a huge part of a practice. I know there are many practices that have exclusively specialty contact lenses. How have you found this plays a role in growing your practice, practices you've seen across the nation? Is there an opportunity for special lenses to grow an optometric practice?

Dr. Ashley Tucker:
Gosh, 100%. So I'll tell you just briefly my story. So I joined a primary care pediatric practice 13 years ago and started the specialty lens practice from the ground up. So 70% of my patients are specialty contact lenses. So I started with one patient or started with one referral, and it's just escalated to that. And I can't tell you how rewarding it is to have a practice like that where it's not mundane. It's not the typical patient. Every single day is different.

But it did take quite a bit of legwork on my part, putting myself out there to different practitioners, different practices, letting them know that I want to be the go-to person in the area to fit those patients that they're having challenges with or patients that they just don't want to see. I want to be the doctor that will see those patients. So it's absolutely invaluable to be able to start a specialty like this within our profession.

Dr. Diana Chu:
Yeah. Well, it's because it is a specialty, it certainly differentiates you as a provider in your area, both within a professional network and then also with patients and being able to meet the needs of your community and of your patients.

I think in my practice, I work very closely with a corneal surgeon, and so being able to receive those patients pretty much just a few months after corneal crosslinking or those with corneal ectasias, and there are times where surgery is step one and then contact lenses is the next step, and that's sort of the even management algorithm for that patient. And so, it's been very rewarding to be able to offer patients a vision that they weren't able to see before.

And I think even as a practitioner, all of us, no matter how long you've been in practice, all of us are still fed and kind of receive some joy from that wow factor of patients as well. And I think cataract surgeons are lucky to get that with their patients, and this is kind of a form that we get as well through these lenses.

And so I think it's rewarding on both ends. You differentiate yourself when you work with different contact lens companies and start to build your repertoire there. It does put your name on the map. There are certain tools to have your name as a patient resource so that your own SEOs go up for what services you can offer. But then also as patients are coming through your door and as you're being able to offer them all these different lenses, specifically because you are the specialist in that, it adds to just being able to meet patients' needs and decreasing that healthcare burden and continuing for patients to bounce back and forth between different providers and not finding true answers in their vision issues.

Dr. Jacob Lang:
Beautiful. Yeah, you get to steal the wow factor from the corneal surgeon, right? Instead of just LASIK and wow, out the door, you'd be like, "Oh, I get to be the wow factor here today, and we'll put a contact lens on you and see what we can do." That's awesome.

And these patients are so loyal afterwards, right? So there's so much loyalty when you are the deliverer of their vision and this therapeutic device that gives them the opportunity to see well and treat these different pathologies, whether it be ocular surface disease or other conditions. So definitely a loyal following once you established yourself as an expert there.

It's been an awesome discussion and summary of all the amazing things we can do with contact lenses, really talking about there are more than just one specialty lens. It can even be a high toric or a custom soft lens that we're using, and that's a special lens that'll deliver a lot of great things to patients. It doesn't have to be just scleral lenses, although it has been amazing to see the growth in scleral lenses over the last couple decades. They're an amazing thing, and it's been great seeing them grow.

What would be one piece of advice, as we kind of wrap up, that each of you would give to an optometrist looking to specialize in these specialty contact lenses?

Dr. Ashley Tucker:

Sure. So I would say don't shy away from the patient that you know in your heart needs you. We have these patients that have corneal disease, that keratoconus, that have a variety of things that we inherently know need a specialty contact lens. They aren't seeing their best with a simple refraction with regular contact lenses or spectacles. So just pick a patient like that. Let them know that you want to help them, and they would be more than happy, I'm sure, to be your guinea pig, so to speak.

But letting them know that you're willing to help, that you want to help, I think will speak volumes for you as their eye care provider. And if not, just don't be afraid to refer. There are people in your community that would be more than willing to help. But I just encourage you, empower yourself to take on that one patient, because that's all it's going to take. Then you'll be hooked.

Dr. Diana Chu:
Yeah, that's great. I agree that take any case that comes your way because that's actually how we learn. There are times where... Of course you use your own judgment on what you feel prepared for and what you don't, but a lot of times getting stretched to grow in that way is how people become specialists.

And so many times there have been times where cases that I've taken on, and because I know what this patient needs, yet I have to reach out to either a mentor or someone I know who is not in my area but has that knowledge, and that's how I've built relationships with other mentors, other providers, and then also with the lens consultants in order to now have that as something that I feel completely comfortable with recommending a patient.

And so I guess that word of advice would just be to don't shy away and don't fear these harder cases, but really take them on as a challenge. You'll probably surprise yourself in how creative you can be in finding solutions, and there are a lot of resources out there.

Dr. Jacob Lang:
Yeah, takes a village, right? Takes a village, whether it's manufacturers, practitioners, patients. All of us lean in on each other and help elevate the care of our patients.

So, thank you both. Thank you, Dr. Chu and Dr. Tucker, for such an awesome evening here, having a little chat about contact lenses. Again, I'm Dr. Jacob Lang. Thank you for listening to the special episode of the Mod Pod. Stay tuned for another installment of EMPOWER series coming your way shortly.