

Practice Development Series

Advanced Fitting and Management Techniques

My Best Fitting Tips for Solving Scleral Lens Fitting Problems

Q&A with Maria Walker, OD, MS, FAAO, FSLs

An interview with Craig W. Norman, FCLSA



Craig Norman

Are fitting outcomes higher with scleral topography versus diagnostic lens fitting?

Dr. Maria Walker

In terms of what's been experimentally tested and published, to my knowledge there's not any study that says they're better. It depends on what the metric is you're looking at. Is it better for comfort? Is it better for vision? Is it better for the number of times that you have to remake a lens or have the patient in your chair?

I think overall, it will make your life easier and will make probably a better lens quicker for a patient. You can compare it almost to corneal GP fitting. You can do what you need to do by looking at the cornea, but how much easier is it knowing what the shape of the cornea is through topography?

It's possible we're heading towards a time where most of our lenses are going to be made like that. Some studies have looked at subjective symptoms and subjective success with custom peripheral zones, like torics. And

based on the data about scleral shape that most people have asymmetric scleras. So, it naturally leads you to think, "Yeah, people are going to do better with these designs." Some unpublished data from Dr. Greg DeNaeyer, who only fits empirically, tells us that patients are happier, and things go more efficiently in the office and that he's able to get better fits on patients.

Craig Norman

If we were to say that if everybody had the ability to measure scleral topography like they do keratometry, would they be using that to fit lenses? I think the answer would be, "Yes."

Dr. Maria Walker

Absolutely, because it's also something that the doctor doesn't have to do. So, if you're well-staffed, you get your scleral topography measurement and it's automatically going to tell you what lens to select. Your staff will put that lens on then the Doctor can quickly evaluate the diagnostic fit, do an over-refraction, and order the lenses. So yeah, I think

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if you've got the flow right, and you've got the staff, it will help.

Craig Norman

I have the feeling, if we were to reconvene in five years, we would be laughing that we're having this discussion, right? Where you could even make a bigger case for the use of empirical fitting systems like scleral topography is in the age of COVID and post-COVID.

Dr. Maria Walker

For sure. At our practice at the university, once a lens goes on an eye, it must go through full overnight disinfection process. And having to maintain these fitting sets and keep everything wetting and clean is time-consuming.

The one thing we haven't figured out still, and I don't know how we will, is how to figure out what the power we want to order is, especially on irregular corneas. Because typically, if you're ordering empirically, you're taking the manifest refraction and the Ks and doing some math. But when you've sometimes got 20 different K values over the pupil in a keratoconus patient and a refraction that only gets them to 20/100, it's a little harder to empirically figure out the power.

Craig Norman

There's a lot of discussion about lens care. During your webinar this evening there were numerous questions like "Do you use Progent? Do you not? What about Hydra-PEG and plasma coating?" Can you just talk about how you communicate the proper way to have patients manage their lenses?

Dr. Maria Walker

Sure. I had a couple of new wearers in the clinic today, so this is fresh on my mind. I like to personally remind patients that the success of scleral lenses is so dependent on how clean the lens is because not only will it affect their vision, but it's also going to affect the inflammatory response. So, the lens has to be clean but it has to be free of bacteria and other germs and it has to be able to wet and you don't want it to be too susceptible to deposit.

The cleaning conversation is extremely important with every patient and it's not always going to be the same. Typically, I don't have the cleaning conversation with the patient until I've seen how the lens looks on their eye after 20 minutes of wear. There'll be patients who already have globs of debris underneath the lens, or it's not wetting so great - versus other patients who will look pristine and when I look, they don't have a single flake on their lid.

For patients who I predict will have more deposits and more stuff on their lids that can get on the lenses, I'm having a different kind of cleaning conversation.

I'll usually start patients with whatever is simple. If there's a multipurpose solution or one-step peroxide I want to use that's how I start them. And then a week later I may say, "Okay, maybe we need to reorder this with Hydra-PEG. Maybe we need to get Progent into the mix. Maybe we just need to have you use a different cleaner and a conditioner, there are many out there and some patients just tend to do better with one versus the other.

I really do think it's important to break down lipids and debris on the lens surface, then condition it. And I find that if some patients, if they only use a multi-purpose solution, they just

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can't quite get the lens as clean and debris-free as they want to. I find a place for every different type of solution that's available to use with different patients depending on their individual needs.

Craig Norman

A key takeaway from your presentation was that before you proceed with the scleral lens fitting that you fix all the problems on the eye that you can in advance.

Dr. Maria Walker

Definitely! And I think that often falls on deaf ears. Especially as new fitters, there's excitement of fitting sophisticated designs, like sclerals. Often, they will "kicked that ball down the road and see if it causes a problem later." I think that's a mistake. And I've even talked to colleagues who will do a steroid pulse prior to lens wear. They say to the patient "take this steroid home, use it once a day to clean off the lids, clean up the inflammation before you even start to wear scleral lenses." I don't typically do that myself, but I'm not opposed to it if it's needed. But regardless, eyelid and ocular surface health should be addressed as much as possible before scleral lenses go on the eyes.

Craig Norman

Can you remark about one of today's hot topics in scleral lenses - temporary increased intraocular pressure? Is it a big deal? When should it be a big deal? And when does it mean that we should not consider a scleral lens?

Dr. Maria Walker

I'll start off by saying I have I have never not fit a scleral lens nor pulled a patient out of scleral

lenses because of an IOP related issue. I am interested in the research regarding IOP and a stickler about it in clinic. The students know that I want them to take the lens off and measure the IOP immediately. The reason I do that is so that to help us all learn what we really do need to do. So, I'll tell you, when I measure it, and when we look at it in clinical studies, we do see a bit of an increase anywhere from two to five millimeters of mercury on average. But remember too that those corneas are diseased and often very thick or thin, so we need to consider what the data we get is really telling us.

We know that IOP fluctuates a bit anyways. For a normal patient, I think, if their IOP is going between 10 and 15 on a normal day, it's going to fluctuate between that anyways in a normal intraocular pressure homeostatic system. So normal in terms of not a glaucomatous eye, they can still have keratoconus, but without having a disease of the optic nerve or IOP system.

You'd think that a normal functioning system should be able to compensate. You put a scleral lens on the eye, maybe you've reduced the resistance to outflow a bit. But the system compensates, the trabecular meshwork has mechano-sensing cells. Cells that can sense how much force it's taking to pump out that aqueous humor. And they'll pump it out with more force so that you maintain the same intraocular pressure.

Now this is theory and it's been tested in all sorts of different models, but as you can imagine, it's really hard to test in a patient. We don't even have good ways to test IOP, never mind what's going on at the level of the trabecular meshwork and outflow pathways.

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But I don't think we need to worry in most of our patients.

So, I acquire a baseline measurement. Then I measure it as soon as the lens comes off the eye. I've had a couple of patients where it gets a little high, and so I play around with the fit and it's never gotten to a point where I've had to take them out of the lenses.

The patients you have to worry about are glaucoma patients. I think those you can worry about it by measuring IOP and taking OCT images. So follow their OCTs, follow their visual fields. And for those of us who are interested write cases on it, share, because none of us or few of us I should say, are seeing enough glaucoma scleral lens wearers to really have a good read on whether or not this is contributing

Craig Norman

One last question. Tonight, you talked about the use of customized lenses. Have you ever analyzed your database to determine the percentage of scleral fittings are in these customized lenses?

Dr. Maria Walker

We do lenses that are customized, like BostonSight or with the Latitude from Visionary.

In general, I think it depends on what kind of practice you're in. I was just having this conversation today regarding notching, truncating, taking chunks out of lenses. I think we're certainly going away from that. Today, the technology is in lifts and freeform lenses so we're not really taking parts out of the lens.

So, I would say we do big customizations, like wavefront optics or freeform lenses, only about

10% of the time. But I am in a community health center, so money is oftentimes the issue.

Craig Norman

Thank you, Dr. Walker – you sharing your expertise is greatly appreciated.