

# Glaucoma



Chats

## Latest Updates on Glaucoma Eye Drops

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Transcript of teleconference with Dr. Natasha Nayak Kolomeyer, board-certified ophthalmologist and fellowship-trained glaucoma specialist at the Wills Eye Hospital

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Please note: This Chat has been edited for clarity and brevity.

**MS. KACI BAEZ:** Hello, and welcome today's BrightFocus Glaucoma Chat. My name is Kaci Baez, and on behalf of BrightFocus Foundation, I'm pleased to be here with you today as we discuss the Latest Updates on Glaucoma Eyedrops in 2024. Our Glaucoma Chats are a monthly program in partnership with the American Glaucoma Society, designed to provide people living with glaucoma and the family and friends who support them with information straight from the experts. All vision Chats presented by BrightFocus are also available to listen to as podcasts on the go on YouTube, Spotify, iHeartRadio, Amazon Music, Apple Podcasts, and Pandora. BrightFocus is committed to investing in bold research worldwide that generates novel approaches, diagnostic tools, and life-enhancing treatments that serve all populations in the fight against age-related brain and vision diseases.

Now, I would like to introduce today's guest speaker, Natasha Nayak

Kolomeyer, MD, a board-certified ophthalmologist and fellowship-trained glaucoma specialist at the Wills Eye Hospital. She also serves as an assistant professor of ophthalmology at Sydney Kimmel Medical College at Thomas Jefferson University. Dr. Kolomeyer has received numerous awards and grants throughout her career and is the author of many book chapters and more than 55 peer-reviewed publications and serves on committees for the American Glaucoma Society, American Academy of Ophthalmology, Association for Research in Vision and Ophthalmology, and the Pennsylvania Academy of Ophthalmology. Dr. Kolomeyer is passionate about providing patient-centered care, as well as refining glaucoma diagnosis and medical and surgical management through clinical research and education. Welcome, Dr. Kolomeyer.

**DR. NATASHA NAYAK KOLOMEYER:** Thank you so much, Kaci, for that kind introduction. It's an absolute pleasure to be here today.

**MS. KACI BAEZ:** Thanks for joining us. We're excited to talk about our favorite topic: eyedrops. So, just to jump right in, we wanted to ask you, why would someone need glaucoma eyedrops?

**DR. NATASHA NAYAK KOLOMEYER:** Great question to start with. So, glaucoma drops work to lower the eye pressure—and I'm going to try to use the word "eye pressure" when I can, but it's also known as intraocular pressure, or IOP, if you're reading some journal articles. But it's really important to lower eye pressure in patients who either have glaucoma damage or are at risk of glaucoma damage because they may have high eye pressure or other findings. So, we know that many studies have shown that lowering the eye pressure can slow down the rate of vision loss from glaucoma or prevent it completely. And we know that some patients might be fine with just being on one eye drop. It might lower the pressure enough. Some might need more than one. Or some might really require a laser procedure/surgery to get the pressure down. But, in short, glaucoma drops help decrease the risk of blindness from glaucoma.

**MS. KACI BAEZ:** Thank you. So, there are a lot of eyedrops out there, and what are the most common types of eyedrops, and what are the side effects and benefits of each?

**DR. NATASHA NAYAK KOLOMEYER:** That's a great question. So, there are many types of glaucoma eyedrops, and I'm going to try to keep this out of the weeds here. Don't want anyone falling asleep on the call, but generally speaking, they can lower eye pressure by either decreasing the amount of fluid the eye produces or by increasing the amount of drainage of fluid outside of the eye. And by fluid—I'm going to try to use the word "fluid," but we're really talking about aqueous humor—the type of fluid that's produced in the eye. So, there are a lot of common side effects that are general for different types of eye drops. They can include burning; irritation; redness; and, of course, just generally an allergic reaction in or around the eyelids. But I want to go over some of the more common categories, as you mentioned, but without overwhelming you too much. So, one of the more common classes are called prostaglandin analog. So, common examples include latanoprost, which is referred to as brand name Xalatan, or I use a Xelpros™. For example, bimatoprost, which is also Lumigan®; travoprost, which is Travatan Z®, and tafluprost, which is Zioptan®. They work to lower eye pressure by improving the drainage, or the outflow, and these drops—at least in the United States—they usually have a blue-green or a teal cap, and they're used once in the evening. The side effects can be, as I mentioned before, the general redness or irritation, but also can be more eyelash growth or sometimes eyelash growth in the wrong direction. Sometimes also discoloration or darkening around the eyelids. And rarely, it can cause darkening of the iris or the colored part of the eye. But generally speaking, these are pretty well-tolerated, low-risk medications and, oftentimes, the first class of medications that we're using in a majority of our patients, but that can certainly vary.

And then, I wanted to mention in the last few years, a related prostaglandin analog has been developed that's called latanoprostene bunod, or Vyzulta®. So, it works similarly to everything I just described, but it also has an additional way to improve outflow through another pathway, and it has similar side effects and dosing. Another big class of medications are beta blockers, most commonly, timolol but also betaxolol or carteolol. These drops work differently than the other ones. They work by lowering eye pressure by decreasing the amount of fluid that's made by the eye. And it's important that we try to avoid these in

patients that have asthma or COPD, emphysema, or who may already have slow heart rates or certain heart conditions, like a heart block. Some side effects that are more specific to this might be wheezing or trouble breathing, tiredness, fatigue, depression, or—as I mentioned—a low heart rate. But they can be pretty well tolerated, again, as long as we're avoiding them in patients that might have those preexisting conditions. They can be used twice a day, but sometimes we recommend using beta blockers just once in the morning. And they can have a yellow cap or a white cap.

And then the third class of eyedrops that I wanted to talk about were carbonic anhydrase inhibitors. These are drops like dorzolamide, which is the brand name Azopt®; brinzolamide, like Trusopt®. And this class works similarly to the beta blockers that I just described by also decreasing the amount of fluid that the eye makes. But they have some particular side effects, such as possibly a metallic taste that could occur in the mouth. So, if you drink soda, it might taste a little funny. And they also have an orange cap, and they're used twice a day. There's also pills that are carbonic anhydrase inhibitors, but that's a whole separate discussion.

And then a fourth class—if you're still awake after listening to all this—are alpha agonists, or brimonidine or apraclonidine. They also work by decreasing the amount of fluid that the eye makes but also increasing the drainage. And some particular side effects to note could be dry mouth or dry nose, tiredness, headache. And they might have a particular localized reaction in the eye that we look out for as doctors. And they should not be used in young children, and we're a little bit more cautious in the very elderly in case there's any noted fatigue related to this as well. And there's the newest class of eyedrops, which are rho-kinase inhibitors, or ROCK inhibitors; this is netarsudil, or brand name Rhopressa®. And they work in a variety of different ways, including decreasing the amount of fluid production and also improving drainage. The nice thing about this class is that there haven't been as many systemic side effects, but they do cause redness in about half the people that take it, but some tolerate it just fine. And it's used once in the evening, and they have a white cap.

And I wanted to mention there's a common, older category of drops, which probably very few patients are on, called pilocarpine or cholinergic

agonists, and they increase the natural outflow. And that class is less commonly used because it does have quite a bit of side effects, possibly, such as blurry vision, headaches, or brow aches. And in some people, it could increase the risk of a retinal tear detachment. So, those are the general categories, and I did also want to mention that, in the United States, we have several combination eye drops. So, the four common ones are timolol and brimonidine together, which could be brand name Combigan®; timolol and dorzolamide together, which could be brand name Cosopt; or brimonidine and brinzolamide together, brand name Simbrinza®; or a netarsudil and latanaprost together, brand name Rocklatan®. So, some of these are only available as brand names, but the first two I mentioned are also generic at this time. So, I think it's nice when we can have patients on a combination medication, because then they're carrying around just one bottle, and they're getting more for each drop than they remember to put into their eye. And there are also compounding pharmacies that might carry other combinations, but that's not something that I routinely prescribe for my patients. So, that's, I think, a good overview, but there's great information online, including on the BrightFocus website, that might have more details if you're looking for more.

**MS. KACI BAEZ:** Wow, thank you so much for that detailed information. There really are a lot of options when it comes to eyedrops, so, of course, it's always important to consult your doctor. And we did mention some side effects related to these different types of drops. Are there any techniques to minimize or prevent side effects from glaucoma eyedrops?

**DR. NATASHA NAYAK KOLOMEYER:** Yeah, that's a great question. The biggest one that I recommend is called punctal occlusion. And this is something I definitely recommend you Google or try to see if you can find a video of this, as well. I'll try to describe it in words, but you can close your eyes and use your finger to put some pressure on the inner corner of your eye because that's where the tear drainage system is. So, by applying pressure in that area for one minute after putting in your eyedrops, it'll decrease the amount of eyedrop medication that's leaving through the tear drainage system. And why is that important? It's because it allows more time for the drops to be absorbed by the tissues around the eye. So,

maybe you'll have more effectiveness. And also, it makes it less likely that the eyedrops are going to drain quickly into the nose, or eventually, into the blood stream. So, there's less likelihood of side effects on the rest of the body. So, again, just try to see if you can look online for a picture of that, or I know, again, the BrightFocus website does have information on that. It's important to make sure you're not poking your eye, that your eye is closed during this time, and you're not putting pressure on the soft part of your eye. You're just putting pressure on the boney part of the inner corner of the eye. And if that sounds too complicated, you can also close your eyes a bit more tightly than usual for about a minute after you put in your eyedrops because that also closes off the tear drainage system and could achieve the same thing. So, that's described as punctal occlusion, if you want to look that up.

One other thing is patients are oftentimes complaining about redness around the eye, or I see this streak of red. I can see that they're having a reaction right underneath eyelid, but actually, the eye itself is tolerating the drops fine. So, it is important that we remember to avoid the drops running down your cheek or your eyelid. So, have a tissue ready. You can dab that away. Some people who have very sensitive skin actually apply Aquaphor® or some other ointment, not in the eyelid but on the eyelid or on the cheek to prevent any absorption of that drop in or on your skin. But those are people who are particularly sensitive.

And then, I wanted to mention it's really important that sometimes what we think about of as side effects from medications are actually side effects from the preservatives. So, most drops have preservatives in them, and the preservatives in each different medication, although it's not the same, you may be sensitive to a preservative even more than you are to a medication, and the more medications you're on, like, maybe you tolerated one preservative and one medicine, but now your doctor started you on another one. So, we know that more medication and more preservative burden can increase the amount of side effects—more redness, more irritation. So, it's important to see if you can get a preservative-free option. Talk to your doctor about that. Some of the medications I described, some have preservative-free options, some don't. But certainly, there's changes that your doctor might be able to suggest. And, in general, there's just



some intermittent irritation or redness. I encourage you to use some artificial tears because glaucoma drops and their preservatives do induce more dryness. And so, getting over-the-counter artificial tears, you can put in those drops, oftentimes, four times a day, but if you're using it more often, it's important to get preservative-free artificial tears, and again, anything you're putting into the eye, you want to wait at least 5 minutes between either any eyedrop medications or any artificial tears and the medication to make sure that one is not washing out the other.

**MS. KACI BAEZ:** Thank you for those wonderful tips. That's really helpful. Our next question is: Are there risks to using eyedrops if you have been diagnosed with other diseases? Who should not use glaucoma eyedrops?

**DR. NATASHA NAYAK KOLOMEYER:** That's a great question. So, I started mentioning earlier about beta blockers, such as timolol—they can affect the lungs or slow down the heart rate. So, people with active asthma or COPD, lung issues, or who already have a slow heart rate should avoid beta blockers, or if you're not sure, you can talk to your doctor or your cardiologist. But, of course, with everything that I'm discussing, you don't want to make any big changes without talking to your eye doctor first. And then another thing is prostaglandin analog I mentioned earlier on. They're pretty well tolerated, but in certain cases, like patients with active herpes infection in the eye, we would tend to avoid that, or in very particular cases of macular D or swelling in the retina after cataract surgery. But, again, this is usually something that your eye doctor will be taking into consideration. And alpha agonists, like brimonidine, you want to avoid in children, babies. And then, in general, I would say alpha agonists and beta blockers, they can cause dizziness, tiredness in anyone, but it's certainly much more likely in children and in the elderly. So, if it's happening and you're not sure—this happens sometimes with my patients. I usually recommend they do a trial without that drop and see if they're feeling better, and sometimes it is the reason, sometimes it's not. But it, again, this is something definitely to talk to your eye doctor about if you suspect you're having a side effect such as that. And then, of course, there's alternatives to any of these drops. So, we don't want to be torturing our patients with these side effects or these risks if we have other options, which I'm sure we will get to later on.

**MS. KACI BAEZ:** Thank you. You mentioned a way to try and lessen the side effects from the glaucoma eyedrops. Do you have any other advice on how to best use glaucoma eyedrops or what to do if someone has a tremor or trouble squeezing or aiming the drops into their eye?

**DR. NATASHA NAYAK KOLOMEYER:** Yeah, that's a great question. I wish we had video capabilities, because we're going through so much. But I am happy to try and discuss some ways to get the drops in. But if my words are not enough, I really encourage you ... there are some great videos online, and, again, including on the BrightFocus website. But I usually recommend that patients use their non-dominant hand—so, oftentimes, the left hand for many people—to pull down the lower eyelid and then use their dominant hand to place the eyedrop into what we call the pocket, which is when you pull down your lower eyelid, there's that space between the lower eyelid and the eye socket. So, that's where we want you to aim for the medication, and you can rest one hand on top of the other if that helps to stabilize things. And you want to be careful, you don't want the tip of your bottle to touch your eye or your eyelid. That's going to contaminate it, and we don't want you to get an infection because your medication bottle is contaminated. You just need part of that eyedrop to make it in. I wanted to mention that the eyedrop is a much bigger volume than what the lower eyelid pocket can really hold. So, even if you aimed in the right spot, it's very normal for part of that to roll away. As long as some of it got in, that's fine. And as I mentioned, it's good to dab away the excess.

Now, some people like to do this while they're looking in a mirror because they feel like they can aim and get it in, but then there's a little bit more of a risk of things rolling down without getting into the pocket. So, usually, I recommend that you look in the mirror to make sure you feel like you're in a good position, but then roll your head back so that gravity is on your side and you're more likely to get the drop in. And some people, actually, prefer doing this while completely lying down. But if you are having trouble, I do recommend if you have somebody around, ask a family member or friend. Again, if they feel a little queasy about eyes, just let them watch a video as well. But it is important that you get the drops in consistently. Some people like to also refrigerate eyedrops because then



they feel the cold is getting in and they feel reassured that some of it has gotten into the eye.

And then you also mentioned, I believe, a tremor or some people have trouble squeezing. I honestly have trouble squeezing those drops out of the bottle, as well, especially towards the end of the bottle. This is not uncommon. I think people should know that this is certainly possible. There's a lot of eyedrop assistance devices that are available, and sometimes they help with allowing the squeeze to be less powerful, or they also help with people with aiming in the right spot. So, I encourage you to look for these options online on Amazon or Walmart or in person at various pharmacies. I've also been told that, if you're a veteran, you can get these through the VA. So, I think that this is certainly something that I wish more of our patients knew about, that there are ways to improve the likelihood of getting your drops into your eyes. And if all of these things don't work, then again, I think it's very important that we have a transparent conversation—patient and doctor—so that we can navigate this further and look for alternatives.

**MS. KACI BAEZ:** Thank you. Our listeners would like to know some things related to timing: “Does it matter what time of day I use my drops?” and “What if I can't remember to take my glaucoma eyedrops?” are some questions we have regarding timing.

**DR. NATASHA NAYAK KOLOMEYER:** Great. Yeah. So, timing does matter. So, I think it's important to balance what is the ideal timing for an eyedrop, but also, what makes it most likely that you're going to get the drop in consistently every day? And we can't always achieve those. But it's important to balance both of these ideas. So, prostaglandin analogs and rho-kinase inhibitors—like latanoprost, bimatoprost, or Rhopressa—these ones are both once in the evening. And sometimes, they're written out as—or we default it to—once before bedtime. But I find that a lot of my patients forget to take things right before they go to bed. They fall asleep on the couch, then they're rolling into bed, and then they just forget, and they remember to take it in the morning. So, rather than that, I would prefer for patients to take it any time after 6 or 7 p.m. in the evening, if that means you're going to be more consistent with it. But they are better

placed in the evening, and there's two reasons for that. Number one is because studies found that they're more effective that way, rather than in the morning. And number two, because they do both tend to cause some redness, and if most of that redness is occurring while you are asleep, then it's less noticeable when you wake up. But obviously, discuss this with your doctor. I have people who work nightshifts, and I think there's no right or wrong answer, but I tend to just have them use it after their shift and things like that—an important thing to discuss.

And then, I think there were some questions about timolol or the beta blocker, whether they should be used in the evening or not. So, timolol works by decreasing the amount of fluid that the eye makes. And the eye makes the most fluid, we think, in most people, at least, early in the morning. So, for a drop like timolol, it's most important for it to be placed in the morning. And a study did find that there was no big difference in putting it just once in the morning or twice a day for most people. And so, I actually personally, what I tell my patients, which is not, maybe, what your eye doctor will tell you—everybody has a slightly different situation. But for most of my patients, I recommend that timolol just be used in the morning and to avoid the evening dose because, in this scenario, it could also be doing some harm in a very small subset of patients because it can also lower your blood flow around the eye, and that's a little bit more of an issue overnight. So, in people who have low pressure or normal-tension glaucoma, we may want to avoid using the timolol in the evening. But again, this is a patient- and person- and physician-specific question, so definitely want to make sure you discuss that with your doctor.

And then, the other ones that are twice a day or three times a day—like brimonidine or the alpha agonists and the carbonic anhydrase inhibitors or, like, Durezol®, Mydrin®, Alomide®. They can be prescribed twice a day or three times a day. We know people are much less likely to use things when they're prescribed three times a day. So, I tend to not recommend that. Twice a day means, usually, early in the morning and then again in the evening. So, if you can do that with your meals, then that's great. But one thing I did want to mention, especially if you're on more than one eye drop, it's important to space out your eyedrops. So, I know everyone's in a rush to get going in the morning, but if you're on

two different eyedrops in the morning, you should wait 5 to 10 minutes between them to avoid washing one drop out with the other. And then, I know you mentioned, “What if we can’t remember?” and I can totally sympathize with this. Life is busy. It’s hard to keep track of things. So, whatever you can do to make this a part of your life, the more likely it’s going to be. You don’t want to make it hard for yourself. So, if you’re really good about brushing your teeth twice a day and you’re on a twice-a-day eyedrop, then maybe keep it next to your brush, and make sure you do your drops first before you brush your teeth. Or if you eat meals consistently at the dinner table, then you remember to do it before you eat your breakfast and dinner or before you get your cup of coffee or just try to bundle it. Or if you’re already taking other oral pills, try to keep your eyedrops there.

And some people think you have to put your eyedrops in the fridge, and that’s not the case for most medications. But the prostaglandin analogs, like latanoprost, says that, but that’s for unopened bottles to keep them fresh while they’re not being used. But again, double-check with your particular medication, but people sometimes forget because they feel like they need to keep it in the fridge, and that’s only true for a very particular subset of medications. So, I tell my patients to be bold. Place sticky notes wherever they need to on the fridge or involve their family. But I have to say, I recently had to take an antibiotic three times a day, and I did horribly on the first day, despite knowing these little tricks. Then I asked my iPhone to set a daily alarm for me to take it three times a day, and that really worked. And I knew I was going to be doing this Chat, so I just wanted to see how easy it was, and actually, I just asked Siri to set a daily alarm—not a reminder, but an actual alarm—to place an antibiotic at 8 a.m., and it did it for me, like, real quick. I didn’t even have to go to any of the screens. And then I asked it to do it for me again for 1 p.m. and then again for 7 p.m. So, in less than 30 seconds, I had a daily alarm for those three time periods. So, I know not everybody has a smartphone or not everybody feels comfortable using it, but if you can just take the time to set an alarm or have a family member do it for you, I think that’s one additional way to just remind yourself or have a nice checkpoint about it.

**MS. KACI BAEZ:** I love the iPhone alarm. They’re so helpful. Our listeners

want to know if these glaucoma eyedrops are something they have to use for life, which sounds intimidating. Are there any alternative treatments?

**DR. NATASHA NAYAK KOLOMEYER:** Yeah, I mean I hate to say, “Oh my God, you have to use this for your whole lifetime,” because that sounds depressing. There are definitely other options, and we’ll go over those. So, yeah. If you don’t use them, they don’t work, right? So, my patients, initially, when they’re just starting out treatment, they may think, “Oh, yeah I’m going to use this for a month, and then I’m going to be better.” But the eyedrops we’re talking about, they really only work while you’re using them, so if you miss them for the weekend because you were traveling, then your pressure probably went up during that time period. So, try to avoid those periods where you’re missing them. But there are some great alternatives, and this is something that’s going to continue to expand, and it’s something so exciting for our field.

One big thing is selective laser trabeculoplasty, or SLT. It’s a type of laser that’s in the office. It’s very commonly used. It’s not an option for every patient, but it’s a very good option, especially early on in open-angle glaucoma patients or those with high eye pressure. This is a laser that stimulates your natural drainage system of the eye and encourages it to work better. So, it can bring down eye pressure in about 75 to 80 percent of people, and the good thing is that this laser procedure comes with very little risk. There are risks, but they’re very, very small. So, if you’ve not had this laser yet, I would certainly check with your doctor if you’re a candidate, because not everyone is. But it is a good, safe option. And then, of course, there’s a variety of surgeries that can also lower eye pressure by improving the natural drain or creating a whole alternative drain to lower eye pressure. These can include goniotomy; trabecular meshwork devices, like the iStent; trabeculectomy; XEN® gel stents or tube shunts—a variety of different options. So, again, great. If you’re sick of your medication and you haven’t talked to your doctor about it or been honest with them, I definitely do encourage you to be honest because there are these alternatives.

And then the third option is the stain release medication. So, what does that mean? It means it’s a medication, oftentimes one that we’ve already

discussed before that can be injected into the eye itself and that slowly releases on its own without the need for the patient—for you—to place the eyedrops into the eye. And this is a rapidly expanding field. Lots of research is going into this. So, I think it's really exciting, but currently, there are two options that are actually available for patients. And one option is called bimatoprost-SR, or Durysta®. It's a pellet—a small pellet—of a prostaglandin analog, bimatoprost. So, we discussed that category of medication, and it gets injected right in the office. And it just self-dissolves, and it can last a few months, but in some patients, it continues to have an effect over 1 year. So, that's really exciting, and the issue right now, I guess, with this is it can only be placed once, per the FDA. They have not allowed it to be placed again. And it's not covered or not relevant to every purchase or type of glaucoma patient, but it certainly makes sense for some. So, that's one option that is available. And another option is called the iDose. This is an implant that can be placed in the natural drain of your eye, and, again, it emits the medication, and it can last even 3 years in some patients. But this is not an in-office procedure, it's a surgical procedure, but it could potentially last a long time. But again, this is actually very new, and insurance companies are still trying to figure out how to cover this. These are both very promising technologies, but at this point, only relevant for a subset of patients. But I'm really excited that, I think, in the next 5–10 years, there's going to be more and more options like this, as well, that can be even more useful to a larger proportion of our patients. So, if you're interested in these alternatives, certainly talk to your doctor about it. I think the future is bright.

**MS. KACI BAEZ:** That's wonderful that there are so many options. It just shows the power of research. So, just to touch on research, what kind of work is being done to develop, potentially, anything new that might be coming onto the market in 2024 or 2025 for glaucoma eyedrops?

**DR. NATASHA NAYAK KOLOMEYER:** Yeah, that's a great question. I mean, there's lots of medications in the pipeline. It takes many, many years for ideas to become reality. There's a lot of testing involved. So, there are medications that are similar to what we've discussed, with maybe a bit of a twist, maybe a different preservative, maybe a different combination. But also, I think, as I mentioned before, that the sustained relief medication,

there are other ways—not just injections—but some people are looking into putting a plug into the knack, a tear drainage system that could release medication, or a contact lens that could release medication, or a hydrogel—a gel that, maybe, you have to use less often to get the same amount of medication—or emitting medication through the lens that’s implanted at the time of surgery. So, there’s a lot of innovation in the actual molecules and then, also, how the molecules are getting to the right spot.

But another part is also neuroprotection. So, everything that I’ve talked about right now is all talking about lowering eye pressure. But lowering eye pressure, we know, it doesn’t guarantee you’re not going to go blind or lose more vision, but it does slow it down. And then for some people, it’s just not enough. So, neuroprotection refers to ways to stop or reverse damage to the optic nerve as it relates to glaucoma, and there’s some exciting research there, whether it’s an eyedrop or supplements and things like that. So, definitely stay tuned for other things that are going to continue to be more promising. I wanted to also mention earlier, but it actually didn’t come up, but I think someone was asking about the Nanodropper, which I think is an exciting technology. It’s not technically a new medication, but I encourage you to look it up, especially if you’re running out of your eyedrops too soon or if you’re on a medication that’s pretty expensive. This is a separate company than the company that’s making the medication, but it’s an attachment to the eyedrop bottle, and so it can actually decrease the amount of volume that’s being released every time you squeeze the eyedrop bottle. As I mentioned earlier, you really don’t need all of the volume of the eyedrop that comes out from a standard bottle. So, this Nanodropper will decrease the amount of volume, but from the studies that I’ve seen—and again, I don’t have any interest in this—but it seems that it’s as effective at lowering the eye pressure—in at least the studies that I’ve seen so far—and it may make that bottle last longer, but it’s only okay to use once. It’s like a one-time use. So, it’s an additional cost to the patient, so, each patient is different, whether that makes sense for the patient or not to use. It just depends on your particular situation. But I would see if that’s an option for you as well. So, I think it’s really exciting to see how there’s a lot of work being done to not just ... we think about medications or surgeries, but there’s a lot of



also work just generally speaking about how can we make life better for glaucoma patients or how can we make life easier.

And one other thing I wanted to talk about is advocacy—sorry that I’m going on forever—so, it’s something that I feel really strong about that us as doctors and then you as patients or family members, we really need to tell our legislators why it’s important for them to prioritize health care or what they can do to make your lives easier. So, just recently—I practice in Pennsylvania—and I think it was 2 years ago that we passed the bill that allowed and required insurance companies to refill eyedrops earlier than what might be otherwise calculated because you mentioned earlier that people sometimes run out or sometimes miss. So, then my patients tell me, “Well there was a whole week I didn’t have my drops because I wasn’t due for a refill.” So, look up in your state or in your area if this is possible. But in Pennsylvania, for example, it is required that if you have an appropriate refill and everything that is that instead of at 30 days—but even at 21 days—you should be allowed to get a refill earlier. But it does require, unfortunately, a lot of self-advocacy and arguing with the pharmacist and the pharmacy. But I think there are so many different ways that we can improve quality of life and make this process easier for our glaucoma patients. So, whether it’s the medication itself or how to get the medication into your eye or how to get the medication early, these are all different ways, and if you have other ideas, I think, we’re all ears. So, I’d be happy to hear from you.

**MS. KACI BAEZ:** Thank you so much. We have just one final listener question, and it’s related to something you touched on regarding just making people’s lives easier. Our listeners want to know: Why do some of these drops cost so much, and are there cheaper options when it comes to glaucoma treatment?

**DR. NATASHA NAYAK KOLOMEYER:** Yeah. What a great question. I wonder sometimes why they cost so much. But, of course, I’m no expert in that area about cost, but it does take a lot of time and resources, I know, for medications to get developed. But I do wish that there were less-expensive options. So, number one, I think it’s important to see, “Is there a way for me to get this drop at a lower cost?” And sometimes, it

may not be just going straight through your insurance, but sometimes it's important to just reassess and look to see that that medication isn't available cheaper through GoodRx or other ways, or there might be a coupon deal. But it's important to look at that online. GoodRx is a website or an app. But for some medications, it's actually cheaper to use that coupon rather than go through your insurance. Alternatively, if that doesn't work, I think it's really important to talk to your doctor about how costly it is. So, some patients think, "Well, my doctor must know that this new medication is \$300 a month." But unfortunately, we don't. We don't have that transparency. Our health care system is so broken. So, every drop we prescribe is a different cost for different people, depending on their insurance and what part of the year it is. And so, it's important to just let your doctor know, "Hey, this is how much it costs me. This is something I can't do." Or, "Maybe I could if you feel like this is really the only option." So, just be upfront with doctors. And sometimes we can do a prior authorization if it's costly because the insurance company didn't cover it. Or sometimes we can do a tier exception, which means that we're arguing that you should have to pay less for it than what the insurance company is requiring at that point. So, there are different ways that we can work together. But, certainly, it starts with a conversation about how expensive it is and then knowing our alternatives and working together on that.

**MS. KACI BAEZ:** Thank you so much for that incredible wealth of information. Self-care and taking care of yourself when you've been diagnosed with glaucoma can be incredibly challenging, and we're so excited that you joined us and our listeners today to provide all this amazing information. And to our listeners, thank you so much for joining Glaucoma Chat. We sincerely hope you found it helpful, and as our time together ends, we'd like to get your feedback. We'll be taking a short break during August, so our next Glaucoma Chat will discuss glaucoma treatments on Wednesday, September 11. Thank you so much for joining us, and this concludes today's BrightFocus Glaucoma Chat.

## Useful Resources and Key Terms

BrightFocus Foundation: (800) 437-2423 or visit us at [BrightFocus.org](https://www.brightfocus.org). Available resources include—

- [BrightFocus Foundation Live Chats and Chat Archive](#)
- [Glaucoma research funded by BrightFocus Foundation](#)
- [Overview of Glaucoma](#)
- [Treatments for Glaucoma](#)
- [Resources for Glaucoma](#)
- [Expert Advice for Glaucoma](#)

## Drugs and other forms of treatment mentioned during the Chat include—

- Xalatan (brand name Xelpros)
- Bimatoprost (brand name Lumigan)
- Travoprost (brand name Travatan Z)
- Tafluprost (brand name Zioptan)
- Bimatoprost-SR (brand name Durysta)
- Rho-kinase inhibitors (latanoprost, bimatoprost, or Rhopressa)
- Carbonic anhydrase inhibitors (Durezol, Mydrin, Alomide)
- Timolol and brimonidine combination (brand name Combigan)
- Timolol and dorzolamide combination (brand name Cosopt)
- Brimonidine and brinzolamide combination (brand name Simbrinza)
- Netarsudil and latanoprost combination (brand name Rocklatan)

- iStent, trabeculectomy, and XEN gel stents or tube shunts
- Nanodropper
- Eyedrop assistance devices