Glaucoma Chats

TRANSCRIPT

How Other Health Conditions Can Affect Glaucoma

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Featuring: Nitasha Gupta, MD

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

DR. JIMMY LIU: Hello and welcome. My name is Dr. Jimmy Liu, and I am the Director of Vision Science Programs at BrightFocus Foundation. I am pleased to be your host for today's Glaucoma Chat, "How Other Health Conditions Can Affect Glaucoma." Glaucoma Chats are a monthly program presented in partnership with the American Glaucoma Society and supported in part by sponsorship from Glaukos, designed to provide people living with glaucoma and the family and friends who support them with information straight from the experts.

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BrightFocus Foundation's National Glaucoma Research Program is one of the world's leading nonprofit funders of glaucoma research and has supported more than $55 million in scientific grants exploring the root causes, prevention strategies, and treatments to end this sight-stealing disease.

Now, today I would like to introduce our guest speaker, Dr. Gupta. Dr. Gupta is a board-certified, fellowship-trained cataract and glaucoma specialist practicing in Scarsdale, New York. She specializes in complex and refractive cataract surgeries. Dr. Gupta has a subspecialty focus in glaucoma, with an emphasis on early interventional approaches through laser therapy, procedural pharmaceuticals, and minimally invasive glaucoma surgeries. Dr. Gupta, thank you so much for joining us today.

DR. NITASHA GUPTA: Hi Jimmy, thank you. It's a pleasure to be here.

DR. JIMMY LIU: To start off on today's topic of how other health conditions can affect glaucoma, can you briefly explain what glaucoma is and why eye health should be considered part of a person's overall health?

DR. NITASHA GUPTA: Absolutely. Glaucoma is a disease of the optic nerve. There is a slow, progressive loss of optic nerve tissue, which results in optic nerve damage, which can then cause vision loss. So unfortunately, it is chronic, it is progressive, and it cannot be cured, but—especially if caught early enough—glaucoma is very manageable, very treatable. For the purposes of today, though, it's very important to remember that the eye does not live in isolation from the rest of the body. The optic nerve is a complex structure. It contains neurons, blood vessels, and these structures can be affected by many of the same factors that affect the rest of the body. Glaucoma is not simply about the pressure inside the eye, but it's also about how vulnerable the optic nerve is to that pressure.

DR. JIMMY LIU: Perfect! Thanks so much, Dr. Gupta for that explanation. The second question that we have is: How often do you see patients with glaucoma who are also managing other medical conditions, and what are some of the most common health conditions you see alongside glaucoma?

DR. NITASHA GUPTA: We see this all the time. Glaucoma becomes more common as we get older. That's one of the biggest risk factors, is age, and it's also when we tend to see more conditions, like high blood pressure, diabetes, heart disease, other chronic conditions. I'm routinely asking patients if there are changes to their health, their medication—sometimes even at every visit—any changes to your health, any new medications that you've started. All of that definitely plays a role in the overall health, especially the health of the eye. But I'd say definitely diabetes, high blood pressure, high cholesterol, heart disease, sleep apnea. Those are probably the most common health conditions that we see daily.

DR. JIMMY LIU: Got it. Thank you so much. And so, our organization, BrightFocus, is a funder of research into Alzheimer's, age-related macular degeneration, and glaucoma. So, kind of piggybacking off of the previous question: We have also seen studies showing that individuals can develop one or more of these diseases simultaneously. Could you talk to our audience about how these diseases may be related?

DR. NITASHA GUPTA: Yes, Jimmy. I think that's the million-dollar question. It's a little bit of a loaded question, but I think that there are some really fascinating similarities between glaucoma, Alzheimer's, and macular degeneration. And I believe it ultimately comes down to the actual structural and functional properties of the brain and the eye.

The eye is an extension of the brain, so the neurons and the blood vessels that make up the eye are essentially brain tissue. And so, they behave very similarly to brain tissue and the conditions that can affect the brain. All three conditions are neurodegenerative diseases, meaning that they are chronic and progressive. There is irreversible nerve damage that happens in a very selective way in each of these conditions. And I think that's probably the main reason for the overlap. If the eye or the brain is susceptible to some sort of chronic, progressive, degenerative condition, it's possible that it can affect other parts of the same system within the body—the brain, the eye, the optic nerve for glaucoma, the retina for macular degeneration.

I'm not sure that we can draw any conclusions yet, but there is some really interesting research that may suggest that there is an association—not a causation, but an association—between glaucoma, dementia, or Alzheimer's that's more than just high eye pressure. Do remember, glaucoma is more than just high eye pressure. It's not synonymous with eye pressure. But rather, this may be a reflection of factors within the body—things like oxidative stress, low levels of inflammation, overall perfusion throughout the body. These tissues need to function at a very high level. They demand a lot of energy. And anything that compromises the blood flow, the perfusion, or puts these tissues under stress, I think can affect their ability to function at the highest capacity.

DR. JIMMY LIU: Thanks so much, Dr. Gupta, for answering that very complicated question. The next question that we have is: Are there certain medical conditions that may increase a person's risk of developing glaucoma or experiencing disease progression?

DR. NITASHA GUPTA: Yeah, I think this is something that (A) all of us glaucoma specialists are actively considering and thinking about throughout the course of an office day and (B) definitely something that we get asked at least five, six, ten times daily. It's, again, not necessarily cause and effect—X leads to Y—but it's more of understanding what's happening at a fundamental or foundational level. So, as we mentioned before, these neurons have a very high energy demand. And so, any process that compromises adequate oxygen and blood flow may then ultimately affect optic nerve health, as well. So, for example, if you take blood pressure, it's not high blood pressure equals glaucoma—I hear that all the time—but rather, it's the fact that high blood pressure can affect the small blood vessels of the entire body, including the eye over time. But actually, low blood pressure is also particularly relevant to glaucoma and the health of the optic nerve. If blood pressure becomes too low, particularly at night, the blood supply to the optic nerve may be compromised, and that can also contribute to optic nerve damage. So, with respect to blood pressure itself, it's a very complicated dynamic between optic nerve health perfusing the optic nerve adequately, providing enough oxygen, as well as managing blood pressure, making sure it's not too high and not too low—a little bit of

that Goldilocks phenomenon.

The second point is also a little bit more complicated for me to explain but includes diabetes and sleep apnea. And the general idea here is that diabetes and sleep apnea affect your overall metabolic health. That can then affect the eye because, again, these are such high-powered cells that they require a lot of blood flow, a lot of oxygenation, a lot of perfusion. There's actually increasing awareness, and I think a lot of research going into the association between glaucoma and sleep apnea. Again, associations—not causations by any means, but associations. I think the thought is that fluctuations in oxygen levels during sleep put a stress on the overall cardiovascular system, which then affects your overall health, and the whole body kind of gets put into a stress fight-or-flight kind of mode. And someone's overall cardiovascular health then affects their overall perfusion, their overall oxygenation, their overall metabolism, and then that trickles down to the optic nerve through this vicious cycle that is sometimes really hard to stop.

The last point that we sometimes look at and that I'll mention briefly is the idea of vasospasticity, or dysregulated blood flow within the tissues. So, it's not poor regulation. It's not a lack of regulation. It's just compromised regulation of blood flow within the tissues. This may occur in things like migraine variants or Raynaud's phenomenon, where you get issues with circulation in your peripheral tissues, like your fingers and your toes. And this dysregulation might be particularly relevant to normal-pressure glaucoma, where, as the name implies, eye pressure is actually normal the entire time and is never really elevated. There's increasing emphasis, specifically in normal pressure glaucoma, that it's not the pressure itself, but it's rather the structure of the optic nerve, the vulnerability of the optic nerve, and how the blood vessels within it actually provide an optimized blood flow to this vital structure. In general, though, it's not really a checklist. It's not, okay, high blood pressure, diabetes, etc. It's more of, if I have a patient who's progressing, despite what looks like good eye pressure control, I might want to explore some of these things—look at their blood pressure patterns, coordinate maybe a sleep study to investigate if sleep apnea is something we should be looking into. More of associations, someone's getting worse, let's see if we can figure out why.

DR. JIMMY LIU: Perfect! Thanks so much for that very detailed explanation, Dr. Gupta. So, kind of piggybacking off of your explanations, how does the overall health of a person affect your approach to glaucoma treatment? I know you talked a little bit about this in the previous question, but could you maybe explain a little bit about some of the approaches that you take, maybe a little bit more in detail about, you know, for people with specific health conditions?

DR. NITASHA GUPTA: Yeah, of course. So overall, health affects every part of the decision-making process, and it's whether or not the diabetes, high blood pressure is well controlled, that, of course, will then contribute to better-controlled eye health and hopefully less progression of glaucoma. The entire body is connected right at the end of the day, so the same blood flow through your eyes, the same blood flow that's flowing through your toes, as well. I'm not looking at the eye pressure numbers specifically in isolation. Thinking more about the patient's age, their state of glaucoma, their rate of progression, and a lot of times what their other medications are and their other medical conditions. So, for example, there's a drop, Timolol. It's a beta blocker. It's a very commonly used drop. It's actually one of the standards for FDA research studies. And if somebody has asthma, COPD, respiratory issues, the drop is actually contraindicated because it can make breathing worse. So that's probably a very direct medical condition, directly affects what I can and cannot use to treat glaucoma.

The other thing I think that's important to keep in mind and that I really actively think about is: A lot of times, we're treating older patients who have multiple medical conditions and multiple other medications. Polypharmacy is a legitimate issue and a legitimate concern for a lot of these patients, and so I try not to add to that. I try not to say, "Oh, you have all of these other medications. Here's yet another one that you have to use." So, I really try to utilize treatments like laser therapy, procedural pharmaceuticals, which are extended-release medications, minimally invasive surgery with as safe alternative and effective ways to reduce eye pressure while also reducing medication burden and not adding to that way in a way that's just going to give more side effects.

DR. JIMMY LIU: Great. Thanks so much for that explanation, Dr. Gupta. And so, the next question that we have is: How important is it for a glaucoma patient to discuss changes in their general health with their eye care provider?

DR. NITASHA GUPTA: I think importance is 10 out of 10. As I mentioned, I ask about general health at almost every visit, sometimes to the point where people are coming in three or four times a year. They're kind of like, "Nope, no changes. I already know what you're going to ask me. No changes, no new medications." But I want to know if there's a new diagnosis, if there's been a major hospitalization or a change in medications, (A) because it affects their overall health, (B) in terms of hospitalizations, a lot of things in their general life get disrupted. And sometimes even eye drop compliance can be affected through nobody's fault, but eye drops might not be prescribed while they're in the hospital or they might be forgotten or the schedule gets mixed up. And that has a direct effect on whether or not their glaucoma remains controlled. Sometimes I do get, "You know, you're just the eye doctor. Why does it really matter?" And they're right. I am just the eye doctor, but I would challenge them with saying, "Is your cardiologist

just your heart doctor?" They still want to know everything that's going on. It's just as important for us to know what's happening with the body as it is for other doctors to know what's happening with the eye. Because something like a little eye drop may affect the entire body. And it's important to not forget that.

DR. JIMMY LIU: Perfect. Thanks so much, Dr. Gupta, for that explanation. I think, just echoing your comments, it's really important for anyone on the call who has glaucoma who sees their health care provider to really ... something that may be completely unrelated can potentially be a good piece of evidence that your health care provider can use to help you manage your glaucoma.

DR. NITASHA GUPTA: Yeah, actually, it's kind of the next question, I just recall the patient I had who has glaucoma, we're treating her pressure, and she was prescribed steroids for something by her primary care physician. And then, she started to have some pressure, some pain around the eyes. Came in, her eye pressure had gone up. And she just kind of had called their primary care physician, said, "Oh, by the way, I stopped the steroids for X, Y, Z reason." And she said to her, "I didn't even know that you have glaucoma," or, "I didn't realize, it didn't even cross my mind. I'm sorry I even prescribed that for you in the first place." So it's like, we want to know what's going on, and every provider wants to know what your condition is, what medications you're on, what eye drops you're taking. It's more interconnected than people may think.

DR. JIMMY LIU: Yeah, 100 percent. Yeah. You know, these tissues are not in isolation in your body, they all work together. So, like what you said, it's really important to disclose everything, whether you think it's unrelated or not, to your health care provider, because you just never know. So yeah, kind of piggybacking off to your response from what you said previously, you talked a little bit about steroid medications and that specific example that you had. Is there any other prescription medications that also may affect eye pressure or glaucoma treatment?

DR. NITASHA GUPTA: Yes, definitely a few to keep in mind. Just to go back to steroids for a second, or just medications in general, the key is that some people can be affected by certain medications. It is not a blanket statement across the board, but it's certain people ... and it has to do more with the anatomy of your eye. And not all eyes develop glaucoma, so if there's an eye that's susceptible to pressure, susceptible to glaucoma, they're more likely to react than an eye that has never had an issue with pressure. So, this next section is not necessarily to scare anybody or anything like that, but some people may react to medications, but not everybody. It's not a blanket statement across the board.

Steroids are probably the most important ones to discuss. I'll probably just take an extra second to address steroids specifically. They're extremely useful medications, and oftentimes they're medically necessary for certain conditions. But some people are steroid responders, like the person I had mentioned before, meaning that their eye pressure goes up when they're exposed to steroid medications, whether it's an eye drop; an inhaler, even, like for asthma; or oral steroids. Does not happen across the board. And in general, what I try to recommend is if you need a steroid, that's okay, because chances are you need the steroid to help with your breathing if you're in an asthma attack or something like that. You need the steroid. We will treat your pressure. We know how to do that. Just let us know that you're starting a steroid, that you're going to be on the steroid. If we have an estimated duration, that's helpful, as well, but we'll figure it out. The key thing is to let us know that we can manage the eye pressure accordingly.

On the non-steroid route, there are medications that are important to consider if someone specifically has a diagnosis of narrow angle glaucoma, where there's crowding of the drainage system in the eye. In this case, I usually ask patients to avoid scopolamine patches, medications for overactive bladder, or more commonly, decongestants like Sudafed and antidepressants or anti-anxiety medications, like Prozac. Another little anecdote: I have a patient that I've been monitoring for a number of years. He has narrow angle glaucoma and he's been stable, stable, stable, and the other day, maybe a couple months ago, he came in and his pressures were probably about 15 percent, 20 percent higher than they have been, and the first question I asked was, any new medications? His wife was kind of kicking herself. She was like, "Oh shoot, I can't believe I forgot to tell you. We started sertraline," which is usually used for anxiety/depression, but they were trying it for memory in his case. And she's usually very good about telling me about any change. And she said, "It completely slipped my mind. Could that play a role?" And I said, "It's definitely possible." So, she spoke with the psychiatrist, and they decided to stop sertraline or taper off of it, however they did it. We checked his pressure again in about a couple of weeks later, maybe 2, 3 weeks later, and it was back to where it was.

So, these are medications that we definitely can see a direct effect on the eye pressure, but it's in very susceptible people. So, again, key point here is: Let everybody know if there's a new medication and a new change in medication. To emphasize, again, the medications are not the boogeyman. They're important. They are necessary in a lot of ways, but they may carry a risk. So, make sure that we're monitoring things adequately and appropriately for each person.

DR. JIMMY LIU: Thanks so much for that insight, Dr. Gupta. I think your insights and your examples with the patients that you work with on an everyday basis are so insight-

ful to the people in the Chat. So, thank you so much. The next question that we have is: What questions should listeners ask before starting a new medication if they have glaucoma? So, I know you talked a little bit about this before, but is there anything that our listeners should be aware of about this?

DR. NITASHA GUPTA: I think specifically if it's a prescription medication, sending a message to the ophthalmologist can be helpful. I know I would rather get a phone call or a portal message or anything from a patient rather than not. I always appreciate when someone's being proactive about their health. It's a little bit harder if you think about things like supplements, over-the-counter medications, herbal products. They are supposed to be natural, but natural does not automatically mean neutral. So, while from a glaucoma standpoint, it's probably not as directly a concern as maybe something like a steroid or a decongestant medication, but they can also increase somebody's risk for bleeding, for example. And so they can make blood thinning effects worse if someone's already on a blood thinner, so something to make sure that they're asking any doctor, whether it's their ophthalmologist or their primary care physician.

From a glaucoma standpoint specifically, if somebody is one of those people that likes to read the little tiny inserts inside of everything, if it even mentions the word glaucoma, it's worth just bringing up with your eye care provider. Your primary care physician may not know the details exactly, but I would say go straight to your primary eye care provider, and they can just help risk stratify where you are in terms of that medication. Again, just communication, being proactive about your health. All doctors love that. We'd rather hear from you than not.

DR. JIMMY LIU: Thanks so much, Dr. Gupta, for that explanation. So, we have time for some listener questions. I think the first question that I asked, maybe to follow up with what you were talking about previously, was: When you're looking at those little inserts or slips on the prescription drug or wherever, would maybe asking your pharmacist also be a good way to get that information, as well, if you, you know, can't read well or can't find that information?

DR. NITASHA GUPTA: Absolutely. I think your pharmacist is a great resource, as well. They also know your other medications, or can hopefully see everything in a snapshot, so also interactions or concerns. They actually might be able to pick them up faster than the doctor who actually prescribed it.

DR. JIMMY LIU: Perfect! Great! Team effort. The next question that we have is when you talked a little bit about steroids a couple of questions ago, one listener asked: Is there a difference between oral and injected steroids?

DR. NITASHA GUPTA: Yes, there is. Unfortunately, with glaucoma, a lot of the answers are: It kind of depends. But oral steroids are typically absorbed throughout the entire body. So, if somebody's starting an oral steroid, I want to know about it. With injected steroids, for me personally, I consider it a little bit less of a concern because it's more localized. So, I've had actually orthopedic doctors also call me or patients themselves call me and say, "You know, I'm going to give an injection in their knee," or something like that, "of a corticosteroid, or in their lower spine. Is that okay with you?" And usually I say, yes, it's okay, because it's so localized. And even if it diffuses into the tissues around that area, it's far enough away from the eye that I don't feel like I typically see a response. But depending on how frequently they're getting injected corticosteroids, I might maybe move their appointment up just to make sure that their pressure is still okay. But I'd say for me, the hierarchy of steroids is probably eye drops, oral steroids, and inhaled steroids, like asthma inhalers for COPD. And then after that, the topical steroids that are used on the skin and injected steroids, for me personally.

DR. JIMMY LIU: Got it. Thanks so much Dr. Gupta for that. The next listener question that we have is: Are there any supplements in particular to avoid?

DR. NITASHA GUPTA: Specifically for glaucoma, that's I guess a great question. Specifically to avoid, I don't really ask people to avoid anything unless they have—and I don't know if this necessarily counts as a supplement, but it's more of in the world of the over-the-counter medications—if somebody has a diagnosis of narrow angle glaucoma to try, I will use the word "avoid" decongestants because that can affect the anatomy of the eye and can precipitate narrow angle issues. So, it's not really a supplement or an herb necessarily, but it's within the over-the-counter. General supplements and herbs, I don't necessarily say, "You have to avoid X, Y, or Z." The exception is niacin, which is a vitamin B3, because that's a very tricky dosage consideration. So, there is active research … in fact, one of my good friends is actually doing active research on niacin for glaucoma progression and visual field preservation. But the dosage is so specific that lower doses are protective, but higher doses may be hurtful and harmful. So any vitamin, any herb, I wouldn't do anything in excess. Definitely in moderation, and lower doses are probably better. But again, don't want to sound like a broken record. Let your doctor know if you're going to start something.

DR. JIMMY LIU: Of course. The last listener question that we have for today is: How does cholesterol and cholesterol medication affect glaucoma and overall eye health?

DR. NITASHA GUPTA: That's a really interesting question. So, I'm not necessarily aware that high cholesterol itself is an independent risk factor necessarily for glaucoma. But again, it kind of comes down to how cholesterol affects your overall cardiovascular

risk and your overall metabolic health risk. And there's, I think, definitely the accepted association about high cholesterol, controlling cholesterol, and in a way that's positive for your overall cardiovascular risk. So, just kind of going back to the blood pressure, diabetes, sleep apnea conversation we were having, cholesterol medications … it's a little bit more nuanced. There's some research that's come out recently talking about if statins are helpful or harmful to certain neurological tissues. And I think the optic nerve is something that can be included in that conversation. Not to say stop your statin tomorrow. They're very important medications, and they're very helpful medications, but there might be a little bit more nuance to particularly statins and the effect that it might have on neurons specifically, and the optic nerve I think is one of those structures that should be included in that conversation.

DR. JIMMY LIU: Perfect! Thanks so much, Dr. Gupta, for all your insight today. So that's all the time we have for questions today. Again, thank you so much, Dr. Gupta, for answering so many of our questions and all the information and insight that you provided with us. To our listeners, thank you so much for joining our glaucoma chat. I sincerely hope you found it helpful. I would also like to mention that both BrightFocus Foundation's and the American Glaucoma Society's websites have a wealth of information about glaucoma. Please visit www.brightfocus.org and www.AmericanGlaucomaSociety.net to learn more. If you are already subscribed to National Glaucoma Research emails, you will automatically receive an email that links to the transcript and resources from today's call when it's ready.

So, Dr. Gupta, before we close, my last question today is: What are your top recommendations for protecting vision while managing multiple health conditions? And is there anything else that you would like to have our audience take away from you?

DR. NITASHA GUPTA: Yeah, great. Thanks, Jimmy. I think I just want to emphasize that glaucoma is complicated. It's a very gray area, considering the diagnosis often comes with a very heavy emotional component—the anxiety about going blind, the desire for, honestly, just better, more concrete answers. No doubt, eye pressure is a big part of it, but glaucoma is not synonymous with eye pressure, and it's more than just a number. We look at everything: a person's age, their family history, their overall health of the eye, visual field tests, rate of progression, and what's happening in the rest of the body. I think the one thing I'll leave you with is: Two people can have exactly the same eye pressure and yet have very different risks for glaucoma. Thank you, Jimmy. It's been a pleasure.

DR. JIMMY LIU: Of course. No, thank you so much, Dr. Gupta, for taking time out of your very busy day to come join us. So, thank you so much for that takeaway advice.

Our next Glaucoma Chat will be on Wednesday, September 9, 2026. Thanks again for joining us, and this concludes today's Glaucoma Chat.

Useful Resources and Key Terms

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

- Glaucoma Chats Archive
- Research funded by National Glaucoma Research
- Overview of Glaucoma
- Treatments for Glaucoma
- Resources for Glaucoma
- Medications that may Adversely Affect Glaucoma

Helpful treatment options or resources mentioned during the Chat include—

- American Glaucoma Society
- National Glaucoma Research Program
- Important tips:
- Keep all of your doctors apprised of all of your medical conditions, medications (both prescription and over-the-counter medications), and supplements so they know what warning signs to look for.
- Speak with your pharmacist if you have any concerns about medication interactions when you pick up a prescription.