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Chats

Marijuana and Glaucoma—Where Does the Science Stand?

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Transcript of teleconference with Mona Kaleem, Associate Professor of Ophthalmology at Wilmer Eye Institute, Johns Hopkins Medical Institute

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

MS. KACI BAEZ: Hello, and welcome to today's BrightFocus Glaucoma Chat. My name is Kaci Baez, Vice President of Marketing and Communications at BrightFocus Foundation, and I am pleased to be here with you today as we discuss "Marijuana and Glaucoma—Where Does the Science Stand?" BrightFocus Glaucoma Chats are a free monthly audio information program in partnership with the American Glaucoma Society, designed to provide people living with glaucoma and the family and friends that support them with information provided by glaucoma experts. The American Glaucoma Society counts some of the most renowned glaucoma specialists in the country in its membership. BrightFocus funds scientific research worldwide to defeat Alzheimer's disease, macular degeneration, and glaucoma and provides expert information and free bilingual resources on these diseases. BrightFocus is committed to investing in bold research that generates novel approaches, diagnostic

tools, and life-enhancing treatments that serve all populations. You can find more information and free resources on our website at www.BrightFocus.org.

Now, I would like to introduce today's guest expert, Dr. Mona Kaleem. Dr. Kaleem is an Associate Professor of Ophthalmology at Wilmer Eye Institute at Johns Hopkins University who specializes in glaucoma and cataract surgery. In addition to running a busy clinical and surgical service, she is also a dedicated researcher, educator, and volunteer. Dr. Kaleem is best known for her interests in developing models for patient-centered care, investigating social determinants of health, and integrative medicine. A co-host of the Diagnosis Glaucoma podcast and a worldwide speaker on the topic, Dr. Kaleem has also published numerous peer-reviewed articles and book chapters on glaucoma. Welcome, Dr. Kaleem.

DR. MONA KALEEM: Thank you very much for having me on the program.

MS. KACI BAEZ: Thank you so much for joining us today to talk about this hot topic. Our first question is: What is the effect of marijuana, or cannabis, on glaucoma, and does that vary by consumption method?

DR. MONA KALEEM: A very good question. Marijuana has numerous effects on glaucoma, and we'll break it down by the different forms of how marijuana can be ingested or consumed. The bottom line is that marijuana, if it's the THC form, can lower the eye pressure, and when we lower the eye pressure, we can potentially reduce the progression of glaucoma. It's not a cure for glaucoma, but by lowering the eye pressure we can thereby have some effect on reduction of, again, progression risk. We know that there are other forms of marijuana used, such as ingestibles. Ingestible THC can lower the eye pressure, as well, but because of the effect of metabolism and how it varies on everyone's bodies, we don't exactly know how long the ingestible lasts for or when it's going to actually take effect. We don't know what the dosage, or we don't have any of that information. So, what I generally tell people is that THC, if it's inhaled, can lower the eye pressure for about 3 to 4 hours by around 30 percent, but the ingestible form of THC we don't have enough information—we don't know exactly when its effect takes place.

Some people also ask me about CBD because that's a pretty common form of use of marijuana for various things—for a massage or to help you get to sleep at night. In fact, the use of CBD can potentially increase the eye pressure. There isn't enough information or research that's been done in the area for me to make broad statements, but, generally, the information that we have is based on animal models at this time. And it's been shown, again, that the use of CBD can potentially increase the eye pressure, and anything that increases the eye pressure, that goes above a target or to an uncontrolled level, that could potentially make glaucoma worse. And so, again, my bottom line is and what I tell patients is that with marijuana, the THC inhaled, that can lower the eye pressure, but the CBD you definitely want to stay away from.

MS. KACI BAEZ: Thank you. Do you recommend marijuana as a treatment for glaucoma patients?

DR. MONA KALEEM: I actually do not recommend marijuana because in order to have the eye pressure—lowering effects, again, it only lasts for 3 to 4 hours, so you'd basically have to inhale THC several times a day, and that would make it very hard to function, to hold a job, even to be able to drive. And also, the effects of generally inhaling anything can be harmful over a long period of time.

But I also wanted to mention people also ask about eye drops. I forgot to mention that earlier, like a marijuana eye drop, like a THC or a CBD. There was actually an eye drop that's available, I don't know if it's in the United States, but there's an eye drop that was created in Jamaica. It's called Cantimol or Canasol. That eye drop was used for a little while to try to treat eye pressure, but because THC is not soluble in water, that eyedrop form is very toxic to the eyes—it causes redness, discomfort, scratchy sensation—so we also don't have an eye drop form of marijuana or cannabis. We don't currently have anything on the market that has THC or cannabis that's prescribed for glaucoma. Patients who do get THC can get it at a medical dispensary, but the statements from the American Academy of Ophthalmology, an American association of ophthalmologists, is that we don't recommend it as a treatment for glaucoma.

MS. KACI BAEZ: How would the side effects of using marijuana to treat glaucoma compare to the side effects of FDA-approved treatment? For those that maybe do have a medical prescription, what is the guidance there?

DR. MONA KALEEM: That's also a very good question because we know that glaucoma eye drops can also cause redness, stinging, blurred vision; there are so many different potential side effects that can occur with the medications that we prescribe. What I recommend to people is that if you're having side effects, that you do something called punctal occlusion, where you actually take your thumb and index finger and you place it over by your nose—that's your drainage system. After you put your drops in, you just pinch over there for about 2 minutes, and that generally prevents the eye drop from going down your nasal passage and causing many of the side effects. If you get redness of your eyes, obviously that can be a problem, but there are over-the-counter eye drops, like artificial tears, that could potentially help with blurred vision or redness. With the THC drops, those—again, because it's not soluble in water—they haven't been able to come up with a drop that can be marketed or that works and doesn't cause side effects. The side effects of that eye drop are actually worse than anything that we currently have out.

MS. KACI BAEZ: Wow. And so, are there other effects on vision from marijuana use or from CBD use?

DR. MONA KALEEM: Certainly. A person can get blurred vision, or potentially dizziness, but there are not effects like loss of peripheral vision or contrast sensitivity, for example, but certainly the vision can become blurred.

MS. KACI BAEZ: Okay. Are there clinical trials taking place to learn more about marijuana and glaucoma? It seems like there's a lot of information out there and people are growing more interested in the topic.

DR. MONA KALEEM: I agree. There's a lot of interest. We know that marijuana has many medicinal purposes, and there's growing legalization around the United States, so understanding how marijuana can be used to treat various ailments, I think, is very important. Right now, all of the

clinical trials are being done in animals, so we don't have any on humans at this time. But in the '70s, there actually were a couple of trials—not randomized clinical trials, but trials that were looking at the effects of THC and glaucoma—but again, nothing that's available right now.

MS. KACI BAEZ: And for those looking for other alternative treatments or supplements to help with glaucoma, is there anything else that's backed by research or in the research pipeline that listeners should know about?

DR. MONA KALEEM: There is actually a strong interest in lifestyle and diet in the treatment of glaucoma. I recommend looking at the World Glaucoma Association's website. They have a really great webinar from May 2021 that talks about diet and lifestyle modifications, and the nice thing is that there were world experts on that webinar. I also have, as you mentioned earlier, a podcast called Diagnosis Glaucoma. And on that podcast, we feature different experts, and we have a few episodes that are related to these supplements, vitamins, and also exercise and things that can be done in your daily life—what I call, again, lifestyle modifications—to help with treatment of glaucoma.

MS. KACI BAEZ: Okay, great. Another question we have here: Is marijuana contraindicated for people with normal tension glaucoma and variable blood pressure? A question from a listener.

DR. MONA KALEEM: I think I'd be careful with normal tension glaucoma. We're still learning a lot about that particular form of glaucoma. We're trying to figure out exactly what causes it. We know a few basic receptors. I can tell you that when blood pressure runs low, especially the diastolic blood pressure, if you're looking at your blood pressure reading, there's a top number and a bottom number. When that bottom number in particular runs low or when it varies a lot in a day—by 20 mmHg or more in a day—that can actually cause progression of glaucoma. I'd be very careful. If marijuana lowers your blood pressure or causes dip fluctuations, I think I would stay away from it.

MS. KACI BAEZ: Thank you. Another question we had from a listener is: They use CBD salves on their feet and want to know if that will affect their eye pressure. Would you think CBD, like a CBD lotion or something like

that, on your feet affect your eye pressure?

DR. MONA KALEEM: Well, again, all we have is information from mice. And in models of mice, there was an increase in the eye pressure. I would say that if you have advanced glaucoma or you're someone who's really borderline, I would probably avoid it.

MS. KACI BAEZ: Okay, great. Thank you. I think that's our last question for today's Chat. Thank you so much, Dr. Kaleem, for all of the important information that you shared with us. To our listeners, thank you so much for joining our Glaucoma Chat. We really hope that you find all the information that we share helpful.

DR. MONA KALEEM: Oh, I'm so sorry. I just wanted to make sure that I gave the address for our website, for the podcast, it's www.DiagnosisGlaucoma.com. We actually have episodes that you can listen to on the website, or you can go to your podcast player, but we have information about glaucoma and marijuana use on that, as well, and some handouts and that sort of thing and links to other resources for patients. And I apologize, I'm a little bit hoarse today. My son is at daycare. I don't know what he brought home, but that's limiting my voice right now. Thanks again for having me.

MS. KACI BAEZ: Thank you so much. We certainly hope you feel better, and thanks for joining us, Dr. Kaleem, while you're a little bit under the weather. And with 80 million people worldwide affected by glaucoma, it's important to stay informed, so we really appreciate having you here with us today, Dr. Kaleem, and we encourage everyone to visit www.BrightFocus.org/glaucomachatresources to learn more about all of the information that we have available at BrightFocus, including glaucoma resources for patients and caregivers. Tomorrow is actually World Sight Day, October 12, and so we'd just like to share a friendly reminder that the only way to catch and diagnose glaucoma is by getting a regular eye exam. Our next BrightFocus Glaucoma audio Chat will be on Wednesday, November 8, and is titled, "I Hate My Glaucoma Eyedrops! What Are My Other Options?" Thanks again 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](#)

Other resources mentioned during the Chat include—

- Punctal occlusion
- [American Academy of Ophthalmology](#)